



Annual Report 2020

Perform all your activities with Love.
Love should originate from the source, i.e. the heart and not by force. Chant His name wholeheartedly at least for half a minute, that is enough. One teaspoon of cow's milk is better than barrels of donkey's milk. God is interested in quality, not in quantity.

Excerpts from Divine Discourse: 4 March 2000

SRI SATHYA SAI BABA
Revered Founder Chancellor, SSSIHL





Foreword

Sri Sathya Sai Institute of Higher Learning (SSSIHL) has long been synonymous with Values-based Integral Education, the foundations of which have been engrained in the University by the message and tireless efforts - in its formative years - of our Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba. This approach pervades all aspects of our system of education, and aims at the all-round development of the personality of the student, in line with the National Education Policy 2020, by integrating the physical and mental with the emotional and spiritual. The Self Reliance activities built into our University curricula trains the students to become self-reliant in their chosen fields, so that they may contribute, in due course, to the making of an Atmanirbhar Bharat.

The COVID-19 crisis has shown us that this is particularly relevant now. Our families, our society, and our nation need men and women of character to stand up and meet the challenges head on. In many ways, therefore, this has been a year both of reflection and forward-thinking at the University. I am proud to report that we have not only overcome the complexities and adversities that the pandemic has brought, but have done it with the care and thoughtfulness that is very characteristic of the SSSIHL.

We have fast-tracked the pace of digitalization. This has enabled us to successfully conduct our examinations, complete the admission process, and initiate the teaching procedures in the best possible way. In addition, our researchers have embarked on a number of areas of research associated with COVID-19, such as a Rapid Testing Platform and Natural Products & Derivatives, in an effort to find solutions that will protect our communities, and offer expert advice to local and national governments. These are highlighted in the report.

Our students continue to have access to the best possible infrastructure and facilities, thanks to the continued support of the Sri Sathya Sai Central Trust. In the past five academic years, its investment of ₹53 crores has resulted in excellent academic infrastructure, buildings, laboratories and world-class research facilities in the Central Research Instruments Facility (CRIF) and the Central Research Laboratory (CRL). Many of our application-oriented research projects have been of such high quality and value that we have filed for patents in order to protect our intellectual property, on the one hand, and, on the other, chased the 'Affordable Innovation' concept that may lead to the creation of an 'Innovation platform' within SSSIHL. It is envisioned that this platform will create an ecosystem for startups that will take the benefits of research at SSSIHL to the society.

The results of these are visible. Research funding from agencies like DST, DBT, CSR, ICMR, and the Tata Foundation

Trust has led to the successful clinical validation of the first prototype of a portable, cost-effective and high-resolution Gamma Camera system - SAI-GC - for small organ imaging, including that of non-invasive cancer. Other areas of research such as Disease Biology, Environmental Studies, Functional Materials and Composites, Nanomaterials, Point-of-Care Devices, Edible or Medicinally Active Natural Products, etc., are showing similar promising results. Most importantly, almost all our research applications are intended to directly benefit those who belong to the lowest strata of society in diverse ways.

The University continues in the upward path of the previous years in all areas, thereby reinforcing the important role we play in the field of education. Our strength in academics, from the consistent above 95% pass rate in Examinations to a high degree of students passing National-level examinations, is complemented by the continued growth of needs-based research areas across all disciplines. We have broken new grounds in the national ranking, and hope to get better in the years to come.

Perhaps, what is most satisfying to me, personally, is the continued enthusiasm shown by our student and teaching community for the 'Integral Education' activities. This is best highlighted by the silent but distinct community service activities that the students of each Campus carry out year after year. A special mention needs to be made of the Grama Seva activities that our Beloved Bhagawan commenced in the year 2000, and which continues to this day, in an evolved format. These activities aim at sensitizing our students to the needs of the less privileged who live in the rural communities of India. This widening access to the community, we hope, will shape our students into responsible citizens who will help combat the social, and environmental challenges that we are facing today.

Our students and staff continue to be the key to our ongoing success. I would like to thank them for their commitment and hard work, especially considering the crisis we find ourselves in. I also thank the alumni, the donors, and the members of the Sri Sathya Sai Seva Organizations for their sustained love and support. Lastly, I am grateful to the Sri Sathya Sai Central Trust for their continued support and guidance.

I take great pleasure in sharing the SSSIHL Annual Report 2020 with you, and pray to our Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba, to guide and bless us so that we continue to come up to His expectations.

Prof. (Dr.) C B Sanjeevi
Vice-Chancellor



Annual Report 2020

1 June 2019 to 31 May 2020

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Sri Sathya Sai Values-based Integral Education

Sri Sathya Sai Institute of Higher Learning (Deemed to be University), Prasanthi Nilayam, Andhra Pradesh, India, is a visible manifestation of Bhagawan Sri Sathya Sai Baba's vision of education for human transformation.

Bhagawan Baba has designed the system of Sri Sathya Sai Values-based Integral Education in such a manner that between the time an 18-year old student joins the Institute and when she or he graduates (at the age of 21 or 23), there is a deep inner transformation that takes place. This concept is very unique at the university level.

The Institute hosts over 1350 undergraduate, postgraduate, professional and research students across four campuses:

For women students:

- Anantapur Campus at Anantapur, Andhra Pradesh

For men students:

- Prasanthi Nilayam Campus at Puttaparthi, Andhra Pradesh
- Brindavan Campus at Whitefield, Bangalore, Karnataka
- Muddenahalli Campus at Muddenahalli, Karnataka

Programmes offered include:

- Undergraduate: B.A., B.Com. (Hons.), B.Sc. (Hons.), B.B.A., B.P.A.
- Postgraduate: M.A., M.Sc.
- Professional: B.Ed., M.B.A., M.Tech.
- Research: Ph.D.

A Modern Gurukula

Sri Sathya Sai Institute of Higher Learning (SSSIHL) was founded to inculcate ethical and moral values in students. These ethics and morals form the undercurrent of every subject taught at the University. This helps students develop a wholesome and balanced personality, one where academic competence is supplemented with good character.

This holistic development of students can only be possible in an environment that encourages the development of the student's mind, body and spirit.

To facilitate this, the University has a compulsory residential policy for all students and doctoral research scholars. It is an essential ingredient for the University's Values-based Integral Education to achieve its objective of transformation. The environment is similar to the ancient Indian Gurukula system of education, in a modern context. Teachers and students live and grow together in an atmosphere of mutual trust and unity. This helps students develop a wholesome and balanced personality, one where academic competence is supplemented with good character.

Distinctive Features

Admissions

- Merit-based open admissions policy for all irrespective of income, religion or region
- Free, high quality education for all students

Residential Character

- Compulsory residential character enabling translation of lessons learnt into practical skills through experiential learning
- Spiritual ambience in an environment of discipline and love
- All doctoral research scholars, students and select teaching faculty reside together in the hostel
- Cultivation of the spirit of self-reliance, brotherhood and sacrifice through mentoring and personal example

Infrastructure

- Campuses set in spacious and peaceful surroundings
- Well equipped, modern science laboratories and cutting edge Research Instruments Facility
- Libraries across campuses with over 2,00,000 volumes
- Computer and Multimedia learning centres with ultra-high speed broadband internet connectivity
- International Centre for Sports and a cricket stadium

Academics & Research

- Over 95% examinations pass rate
- Favourable Student-Teacher Ratio
- Integrated five-year programmes combining undergraduate and postgraduate studies for a systematic and graduated learning process
- Interdisciplinary research for societal benefit
- Awareness Programmes and Moral Classes reinforcing human values

Integral Education

- Life lessons learnt through the message of the Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba
- Application of what is learned in daily life
- Integrating human values with secular knowledge
- Inculcating the spirit of self-reliance and service to society
- Synthesis of science and spirituality for societal benefit

The concept of integral education that SSSIHL imparts is willingly pursued by all teachers, staff and students.

The Process

The diagram on the right forms the basis of the system of Values-based Integral Education at SSSIHL.

The base is the concept of a modern Gurukula that sustains all relationships and activities at SSSIHL. It is responsible for creating and sustaining the congenial environment necessary for the teacher-student interaction to grow and develop.

Adherence to discipline and appropriate behaviour are the two important aspects that encompass all interactions. The five human values of Truth, Right Conduct, Peace, Love and Non-violence form the undercurrent of all the dimensions of integral education.

These dimensions are: Intellectual, Physical, Cultural, Devotional and Service. The key activities for each of these dimensions form the basis of most of the time that students spend at SSSIHL.

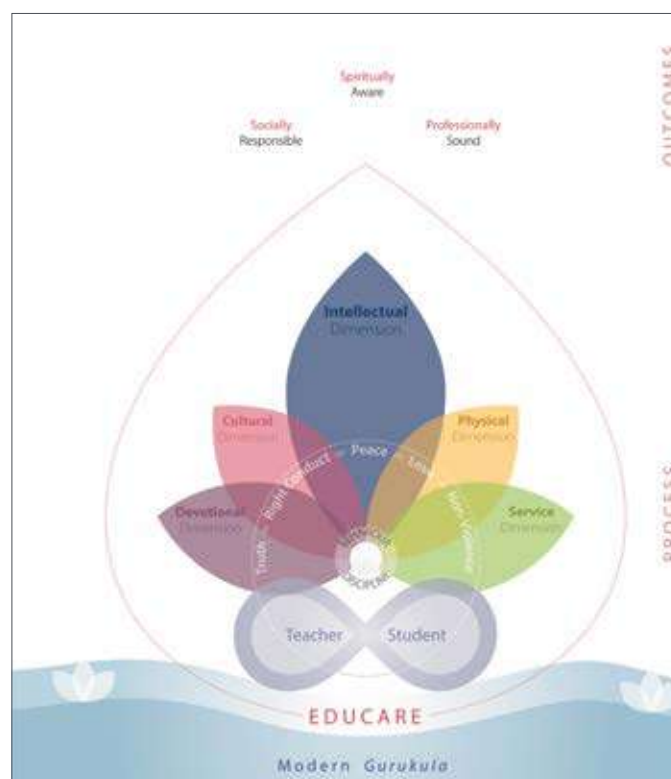
Bhagawan Baba purposefully designed the system of Integral Education so that while students spend 60% of their time on academics (intellectual capacities), they also spend 40% time on the development of other qualities.

(See page 10 for further details)

The Daily Routine

This is a crucial component of this process. Each student's day starts at 5:00 a.m., with a couple of hours spent in prayer, exercise and other vocational pursuits (such as practice sessions for music, band, traditional Indian music and the likes).

Classes commence at 9:00 a.m. After college ends at around 4:00 p.m., students move to the Mandir/Prayer hall for participation in congregational chanting (veda), devotional singing (bhajans) and other spiritual activities. These also include talks by eminent speakers on a variety of spiritual topics. Post dinner, students usually spend time on their studies.



Sri Sathya Sai Values-based Integral Education

The Outcome

The outcomes of the system of Values-based Integral Education at SSSIHL are threefold. It prepares all graduates to be:

- Spiritually aware
- Socially responsible and
- Professionally sound

It helps develop a strong character and positive qualities in students and nurtures virtues like adaptability, tolerance and sacrifice; shaping them into noble and responsible citizens.

I have established these institutions to impart spiritual education as a main component and worldly education as a secondary one. Education should enable one to cultivate good qualities, character and devotion. The teaching of the University curricula is only the means employed for the end, namely, spiritual uplift, self-discovery and social service through love and detachment.

Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL

Integral Education Activities

All students at SSSIHL spend 60% of their time at university on intellectual activities (primarily on their studies). The rest (40%) is spent almost equally on activities related to the Integral education dimensions of Devotional, Cultural, Physical and Service, as highlighted below.

Devotional Dimension

- Bhajans (Sankirtan)
- Vedic chants and stotrams
- Meditation & Silent sitting
- Suprabhatam (prayer at dawn)
- Assembly (college prayer)
- Brahmaarpanam (food prayer)
- Kshama Prarthana (night prayer)

The activities of the devotional dimension enable a student to connect to his/her Divine inner Self. This inner connection opens the heart and brings forth the feeling of love, compassion and empathy for fellow human beings.



Cultural Dimension

- Celebration of festivals: Eid-al-Fitr, Independence Day, Christmas, Sri Krishna Janamashtami (cow procession), Ganesh Chaturthi, Ganesh Immersion, Christmas, Ugadi, Sri Ramanavami, etc.
- Brass Band
- Nadaswaram & Panchavadyam ensemble
- Annual Sports & Cultural Meet
- Performing Arts: Music programmes
- Drama & Dance
- Fine Arts: Rangoli, Card making, Photography, Altar making, etc.
- Public Speaking
- Debates and Elocution

From the performing arts to public speaking to the fine arts, the cultural dimension is designed to give students wide opportunities to find an avenue to their individual artistic expression.

The university makes every effort to provide the best possible resources—both material and human—so that students excel at their chosen activity. Festivals of major world religions are celebrated, reinforcing the unity among all faiths. Every student is involved in one way or another in the celebration of these festivals.



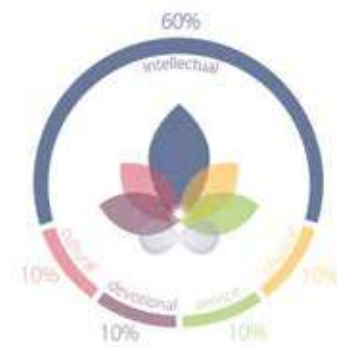
Physical Dimension

- Sports
- Games
- Jogging
- Exercises and Yogasanas
- Annual Sports & Cultural Meet

Sports and games are a part of the daily routine of all students. From yoga classes to fitness training, from team sports to individual sports, students are encouraged to overcome their limitations and excel in these activities.

The university has excellent sports facilities.





Service Dimension

- o Self-Reliance departments:
Electricals, Plumbing (water supply), Audiovisual, general store, dispensary, dietary services, hostel mess, arts & crafts, costumes & props, etc.
- o Community living
- o Social Work
- o Voluntary work
- o Community Service
- o Prasadam Distribution

The philosophy of service at SSSIHL is based on the concept that divinity pervades all of humanity, and hence when you serve others, you are serving the Divine. Students learn to serve without expecting anything in return, other than the deep inner satisfaction of serving others.

The compulsory residential system, where students live in dormitory-styled accommodation with other students from totally different backgrounds (for a minimum of two years and up to five years or more), provides an excellent foundation for the service dimension.



Intellectual Dimension

Apart from academics and research, the activities in this dimension include:

Awareness Courses

These mandatory courses are designed to cultivate a broad view of the human condition in students. The course content (e.g. the Unity of Religions and Faiths, Study of the Indian Epics, etc.) helps trigger self-reflection and enquiry and sensitises students to the concerns of society, and gets them to think about practical solutions to these problems.

Thursday Moral Class

At each campus, Thursday mornings begin with an hour of inspiring and ennobling talks by speakers focusing on their personal spiritual experiences, messages from sacred scriptures and other elevated and socially relevant themes. It is also used to highlight students' talents in music, dramatics, elocution, debates, quizzes, etc.

In 2019/20, some of the topics included: The Power of Namasmara, Journey with Sai, Yoga for an effective life, My Beloved Lord, The Power of Intent, Experiences with His Guru & God and Lessons learnt at His Lotus feet.

Prayer Talks

Every morning before classes commence at the college, all students and teachers gather for the morning assembly. Prayers/veda chanting/bhajans and a few minutes of silent sitting are sometimes followed by a talk by students, faculty members or invited guests on topics related to morals and values.

In 2019/20, some of the topics included: Surrender, Procrastination, Forgiveness, Women Empowerment, Live before you Leave, Sai's Test, Acceptance, Mother, Manava Seva to Madhava Seva, Yoga - Need of the hour, Never give up, Lessons from the Master, The Infinity War, Holy Quran, The true Inner Self, Knowledge is Power, How to overcome fear, Expectations and reality, Experiences with Swami and All they want is our Love.



Governance & Structure

Sri Sathya Sai Institute of Higher Learning (Deemed to be University) is an independent and self-governing institution. It was established by the Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by the Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts.

The Trust

The Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust) was founded to foster the culture of India and promote in the students and teachers an awareness and understanding of the social needs of the country; with special focus to the needs of the rural population. It is aimed to inculcate in students a world perspective - an international outlook imbining human values along with a spiritual and secular education. Its members for 2019/20 were:

- **Justice Sri A P Misra**
Former Judge, Supreme Court of India, Chairman of the Human Right Commission (Uttar Pradesh) and Chairman of Arbitrators by the ICC court in Paris
- **Sri T K K Bhagwat**
Member, Sri Sathya Sai Central Trust, Former Chairman of Indian Overseas Bank and Former Advisor, International Monetary Fund
- **Sri S S Naganand**
Member, Sri Sathya Sai Central Trust, Senior Partner, JustLaw Advocates, Senior Advocate, High Court of India and Supreme Court of India and Former President, International Commission of Jurists (Karnataka section)
- **Sri R J Rathnakar**
Managing Trustee, Sri Sathya Sai Central Trust, Active Social Worker and Alumnus, Sri Sathya Sai Institute of Higher Learning
- **Prof. S P Thyagarajan**
Former Vice-Chancellor, University of Madras, Professor of Eminence & Dean (Research), Sri Ramachandra University and Eminent Microbiologist and Inventor

The Principal Bodies

The administrative and academic functioning of the University is carried out by the following two principal bodies:

- The Board of Management
- The Academic Council

The Board of Management

The Board of Management is the principal authority of the University, responsible for its general management and administration. Its members for 2019/20 were:

- Prof. (Dr.) C B Sanjeevi, Vice-Chancellor, SSSIHL (Chairman)
- Sri S S Naganand, Member, Sri Sathya Sai Central Trust Nominee, SSSIHL (Public Charitable Trust)
- Dr. (Ms.) Renu Swarup, Secretary, Dept. of Biotechnology, Ministry of Science & Technology, Govt. of India

- Prof. D Narasimha Rao, Professor, Dept. of Biochemistry, Indian Institute of Science, Bangalore
- Prof. B Raghavendra Prasad, Senior Professor, Indian Institute of Astrophysics, Bangalore
- Prof. G Nageswara Rao, Head, Dept of Chemistry, SSSIHL
- Prof. R Prabhakara Rao, Professor (Hon.), Dept. of Economics, SSSIHL
- Prof. C N Sundaresan, Dean of Research, SSSIHL
- Dr. (Mrs.) M Praphulla, Dean of Education, SSSIHL
- Prof. B Sai Giridhar, Registrar, SSSIHL (Member Secretary)

In 2019/20, The Board of Management met on 19 November 2019 and 14 April 2020

The Academic Council

The Academic Council is the principal academic body of the University. It has general control over and is responsible for the maintenance of standards of teaching, research and training, approval of syllabus, coordination of research activities, and examinations and tests within the University. Its external members for 2019/20 were:

- Prof. V Nagaraja, Dept. of Microbiology and Cell Biology, Indian Institute of Science, Bangalore
- Prof. S Ramasesha, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore
- Prof. V Nagadevara, Former Professor and Dean, Indian Institute of Management, Bangalore
- Prof. A Ramanan, Dept. of Chemistry, Indian Institute of Technology, Delhi
- Dr. Kamini Walia, Scientist F, Indian Council of Medical Research, New Delhi
- Dr. Anil Dutt Semwal, Scientist G, Director, Defence Food Research Laboratory, Ministry of Defence, Mysore
- Prof. Ratnamala Chatterjee, Dept. of Physics, Indian Institute of Technology, Delhi
- Dr. M Venkateshwar, Formerly Professor and Head, Dept. of Hindi & India Studies, The English and Foreign Languages University, Hyderabad

Committees

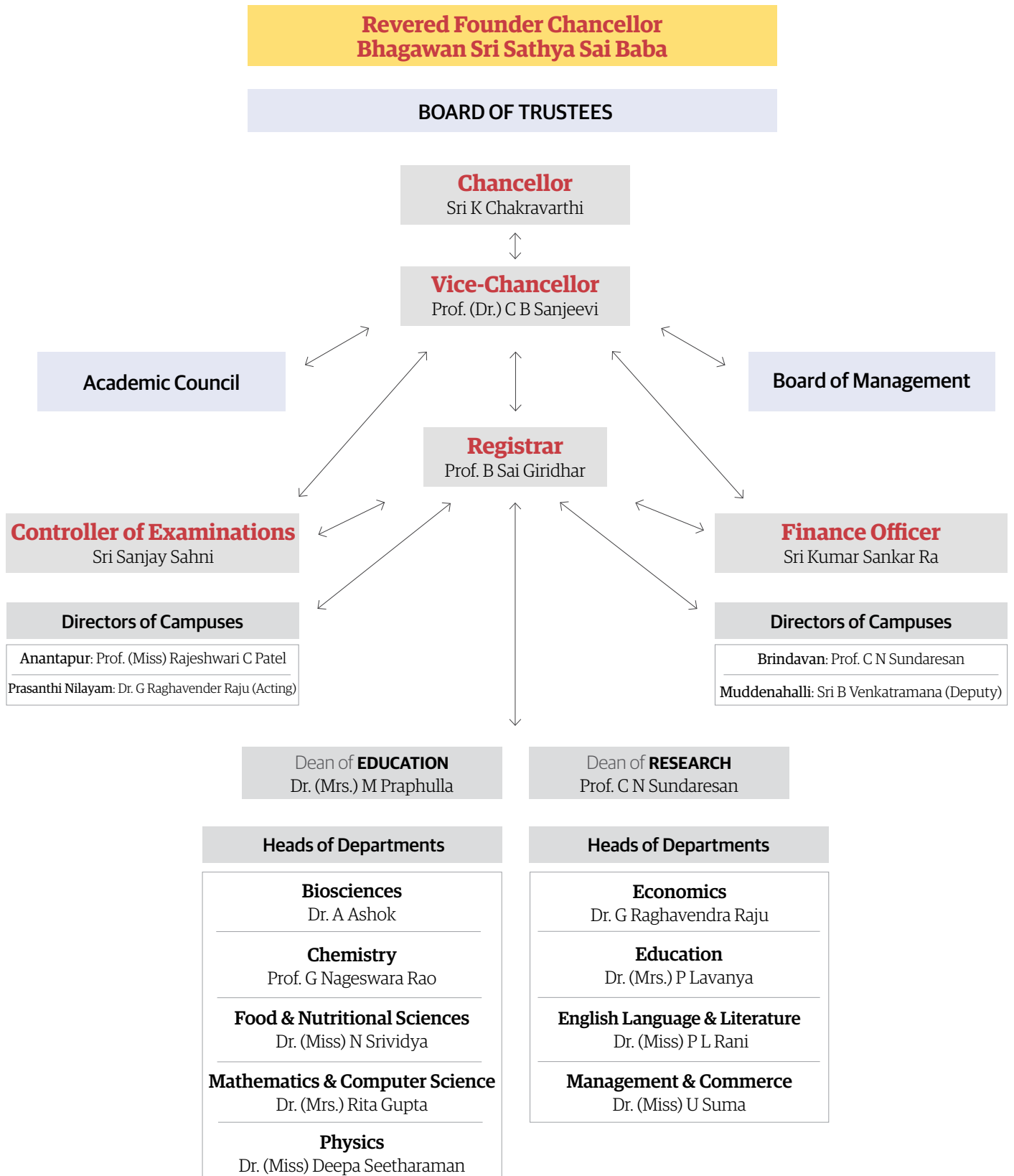
These are set up to ensure the high academic, research and administrative standards that SSSIHL has striven to consistently maintain. They include:

Important: The Boards of Studies, The Finance Committee, Planning and Monitoring Board, Research Advisory Board, Internal Quality Assurance Cell (IQAC), Institutional Ethics Committee, Institutional Biosafety Committee, Research Conferment Cell, Building and Works Committee, and Campus-Hostel Management Committee

Mandatory/Essential: The Anti-Ragging Committee, Anti-Discrimination Cell, Committees for SC/ST/OBC/Minority, Internal Complaints Committee, Intellectual Property Rights Cell and Innovation Cell, Social Media Cell, and Student Counsellor Internal Committee for students with disabilities.

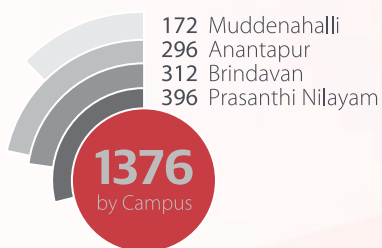
Organizational Chart

Sri Sathya Sai Institute of Higher Learning (Deemed to be University) has been established by Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts.

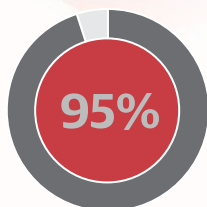


SSSIHL Statistics 2019/20

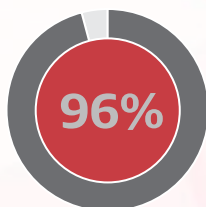
Student Profile



Examinations Pass Rates

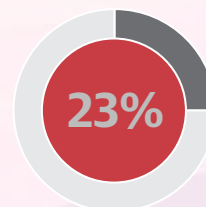


Undergraduate Programmes



Postgraduate & Professional Programmes

National Exams (Combined)



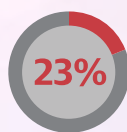
This data pertains to final year postgraduate students who attempted these exams

see page 30 for further details

Admissions



Total Admissions



587/2516
accepted / eligible applicants

Acceptance Rates

Graduates

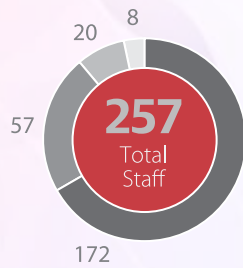


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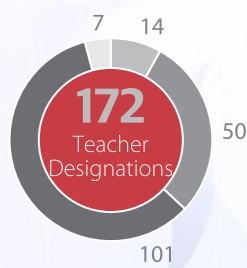


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Staff Profile



172 Teachers
57 Administrative Staff
20 Technical Staff
8 Library & Sports



14 Professor
50 Associate Professor
101 Asst. Professor
7 Others



Ph.D.s

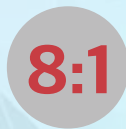
118/172 teachers have Ph.Ds
Additionally, 26 teachers are currently pursuing a Ph.D.



Visiting Faculty
& Guest Lecturers



Student Computer Ratio



Student Teacher Ratio



Residential Teachers



Expenditure on Equipment
& Infrastructure



Research & Teaching Grants



Expenditure
per student / per year

Events

To facilitate wider exposure to the developments in academia and industry and enable the exchange of ideas, the University hosted a number of academic events during the academic year 2019/20 via key guest lectures, workshops and conferences. A sample of these is highlighted below.

Brindavan Campus @ 50: Golden Jubilee Celebrations

8-9 June 2019

The event marked the completion of 50 years of the opening of the Brindavan Campus of the Institute - the erstwhile Sri Sathya Sai Arts, Science and Commerce College for Men - inaugurated by Bhagawan Sri Sathya Sai Baba on 9 June 1969. The two-day event featured talks by luminaries from various Sri Sathya Sai organizations and discourses by the Founder Chancellor (including a special documentary, entitled 'Education for Life'), as well as cultural presentations, felicitation of former staff from Brindavan, spiritual engagement activities, sharing of experiences, blood donation, visit to Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), etc.

Several dignitaries associated with the Sri Sathya Sai Seva Organizations and other Sai education institutions as well as SSSIHL alumni were present on the occasion.

Sri M Venkaiah Naidu, Honourable Vice President of India was the chief guest. He spoke of how, the way Bhagawan Baba has motivated lakhs of people, is an inspiration in itself. He opined on the educational and medical institutions set up by Him being expressions of His ability to motivate individuals.

Advanced NMR applications in solving Biology problems

14 Sep 2019

The workshop for postgraduate and Ph.D. students on the potential applications of Nuclear Magnetic Resonance (NMR) in the fields of chemical, biological, pharmaceutical and medical sciences to help solve complex biology problems introduced various NMR techniques including Basics of Magnetic Resonance, principles of one-dimensional, two-dimensional and three-dimensional NMR spectroscopy, and the like.

External experts and guests from: BITS Pilani, CSIR-The Central Drug Research Institute (CDRI) and Indian Institute of Science

Physics

Virtual Labs

6 Feb 2020

The workshop explored possibilities of how SSSIHL faculty can become content generators for virtual lab experiments. Nineteen faculty members from SSSIHL Science departments across campuses participated.

Virtual Labs is an initiative of the Ministry of Human Resource Development (MHRD), under the National Mission on Education through Information and Communications Technology (ICT), which aims to provide remote-access to labs in various disciplines of Science and Engineering.

External experts and guests from: IIIT Hyderabad

Chemistry

The Periodic Table @150

8 Aug 2019

The event celebrated the nostalgia behind the invention of the periodical table of events - the backbone of Chemistry. This fusion of science and history included historical anecdotes on Russian Chemist and inventor, Dmitri Mendeleev, who formulated the Periodic Law, and his farsighted vision that brought us the Periodic Table.

It explored the beginnings of Chemistry with the alchemist's search for the philosopher's stone to convert base metals into gold, the attempts on finding a relationship between the elements, and the final piece of the puzzle, the arrangement of the periodic table by atomic number and the subsequent discovery of more elements of the periodic table.

External experts and guests from: Tata Institute of Fundamental Research

Disruptive Innovations to Lower Healthcare Costs

30 Jan 2020

The event highlighted the growing cost of healthcare in the United States, costing close to \$4 Trillion per annum, while 71% of world population lives on a \$10 per capita per day income. Under these circumstances, where medicare is beyond the reach of the masses, the Center for Advanced Center Technology (CAST), University of Maryland, USA has developed next generation bio-manufacturing technology

with the ability to manufacture protein-based therapeutics at the point-of-care. The talk centered around the application of non-invasive sensors, minimizing pain and removing infection risks especially for vulnerable infants in neonatal care.

External experts and guests from: University of Maryland, USA



Biosciences

Re-wired Metabolism Drives Breast Cancer

22 Jan 2020

A cancer biology expert focused on how breast cancer modifies its metabolism to escape host immune response and become aggressive (metastatic). The mechanism underpinnings that drive this immune escape was determined. The potential translation of these findings to develop treatment strategies for patients were discussed.

External experts and guests from: Baylor College of Medicine, USA



Symposium on Translational and Advanced Research Technologies (START)

29 Feb 2020

The workshop brought together distinguished professors and scientists in the areas of Biosciences and Medicine. Talks and discussions centered on various topics: The importance of translational research and its applications, Green Chemistry: Plants as a Source of Bioactive Metabolites, Stem Cells: Their scope in Regenerative Research, How do we tackle resurgent drug-resistant Tuberculosis, Pharmaceuticals to Nutraceuticals - Why This Paradigm Shift, Oxylipid signaling in Health and Disease in plants and animals, and Hybridoma Technology in Health Care.

External experts and guests from: North Maharashtra University, National Institute of Nutrition, Indian Institute of Science, Central Food Technological Research Institute, University of Hyderabad, Defence Food Research Laboratory, DRDO



Food and Nutritional Sciences

National Nutrition Week Celebrations - The Health Happy Week

1-7 Sep 2019

The National Nutrition Week, an initiative by The Ministry of Health, Govt. of India, is aimed to address several major health issues in India, such as malnutrition, awareness of a proper diet and nutrition and their positive benefits on people's well-being.



The Dept. of Food & Nutritional Sciences, SSSIHL celebrated this week by designing a nine-code initiative, The Health Happy Week. The nine codes included daily walking, pranayama and yogasanas/exercises, bhajans/meditation/relaxation with music, care of plants, laughter session, avoiding caffeine (tea/coffee) and sugar, and consuming a bowl of salt and vegetables.

The Doctoral Research Scholars spread the awareness of this with posters and information sessions. The sessions also included presentations on how to incorporate the five human values in nutrition: The truth about food, Dharmic perspectives from farm to fork, Cultivating peace through food, Love in action through food banking, and the value of vegetarianism and a plant-based diet.

Management and Commerce

Marketing Simulation - from classroom to the real world

29 Jun 2019

Marketplace® Simulations, a marketing and business simulations designed for university business courses and executive business programs was employed for II M.B.A. students at SSSIHL.

It allowed students to experiment with business strategies, test business ideas, and experience the consequences of their actions in a virtual business environment. The simulation brought to the fore the uncertainty they faced from the outside environment and their own decisions. Along with the theoretical knowledge they learned in class and making strategic and tactical business decisions in the game, they developed skills critical to succeed in today's business world.

External experts and guests from: University of California, Riverside

Honing the art of Analytical and Presentations Skills via the Union Budget

13 Jul 2019

The intensive workshop helped in dissecting the critical focus areas of the 2019/20 Union Budget (or the country's Annual Financial Statement if you like). These included vital parameters like cess and import duties, the interchangeable use of the Aadhaar and PAN cards, the allocation of funds for various sectors from defence to agriculture, the dream of a \$5 trillion Indian economy, et al.

Students presented key highlights and facts via role play,

which were then further discussed and analysed in a panel discussion, that comprised of students from various departments. This was followed by a quiz.

Leadership in Challenging Times

17 Aug 2019

Increasingly, in the current state-of-play, it is difficult for values-based leadership to thrive. In these challenging times, it is therefore crucial that we practice the fundamental principles of leadership. Three key observations were made during this workshop:

Whatever others throw at us, it has no impact on us unless we make it impactful. In all undertakings, more than keeping an eye on the content, it is essential to see the context, since context is the background that colours situations. The next is the importance of relationships and the human connection as a measure of the quality of one's life. The last was integrity: the state of being whole, complete and unimpaired, which is created in us when we honour our word given to ourselves and others.

Mastery is being above what is occurring automatically.

External experts and guests from: Landmark Education

Excellence @ Workplace - The Indian Ethos Way

3 Nov 2019

Increasingly, spirituality and ethics play an important role in organizations worldwide. Responsible business ethics, employee job satisfaction and a wholesome approach to individual and organizational behaviour are not just presentations in classrooms and research papers, but are being actively sought by mindful organizations.

The programme took the participants on an introspective journey through reflection, exercises, talks and discussions on the profound messages from the ancient Indian texts and scriptures that are most relevant to current business practices, and how they can be disseminated to the corporate world in a suitable manner.

From Karma Yoga to Dharma, executives from leading organizations discussed how to bring about greater engagement and satisfaction at the workplace in the process of achieving business goals.

External experts and guests from: Hexagon Wealth Advisors, SimplyFI Softech India, Siemens Technology and

Services, Point Analytics & Business Consulting, Future Generali India Insurance, GE Health Care, Tata Consultancy Services, Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Mentor Graphics, Al Shaya India, Capital One India, and Titan.

Mental Models

28 Dec 2019

Redefine your model of the world!

This self-analytical workshop enabled students to participate in two activities, left and right-hand column activity, as well as a debate between union and management, that enabled them to analyze their model of the world – thoughts, feelings, actions and results.

The activities helped them identify their preconceived notions and deeply held beliefs and assumptions that come in the way of clarity, effective decision making and actions.

As a result, students gained a deeper understanding of their thoughts and feelings and learned techniques on how to release them. They were empowered to meet personal and professional challenges that come their way by adjusting the view of the problem at hand.

External experts and guests from: Bharat Petroleum Corporation Limited (BPCL)

Corporate Social Responsibility, Cross Border Mergers and Insider Trading

17-18 Jan 2020

A series of lectures on the importance of Corporate Social Responsibility at the individual level stressed on the sense of accountability that each professional must employ, and how the maxim, develop oneself to develop the economy, is a good moral compass to have.

To address Cross Border Mergers and Insider Trading, industry-oriented examples on how increase the visibility of its applications were highlighted. The concepts taught were linked with spirituality, thereby highlighting its importance in work and life.

External experts and guests from: CAS & Associates

Getting Ready for Professional Life in Organisations

Late Jan 2020

The workshop helped final year M.B.A. students recognize the options they have in their work lives and then guide them make the right choice.

The expert trainers made all students take the internationally recognized Myers Briggs Type Indicator (MBTI), a psychometric test that helps identify types of personalities and find ways to use personality differences constructively



to improve personal effectiveness, team performance and manage work relationships better.

Students learnt a lot about their own personalities and strengths, and realized the importance of developing abilities in their non-preferred areas while maintaining their own preferred state.

External experts and guests from: Anahat Organisation Development Consultancy Pvt. Ltd.

Business Excellence

8 Feb 2020

This panel discussion focused on the idea of business excellence and ways to plan, deploy and sustain excellence in Business. Discussions centered on the use of Excellence frameworks, particularly the Malcolm Baldrige and EFQM frameworks.

These framework assist organizations in becoming more competitive by aligning their plans, processes, decisions, people, actions, and results. The latest modifications to these globally adopted frameworks and the key challenges in carrying out an assessment of a business organization were discussed.

External experts and guests from: Transconn International, Confederation of Indian Industry (CII), and a veteran Navy officer with a distinguished record of service to the nation across various fields.

Sustainable Future and Solidarity

March 2020

Students learnt about the Global Ecovillage Network (GEN), which envisions a world of empowered citizens and communities, designing and implementing their own pathways to a sustainable future, and building bridges of hope and international solidarity. They do this by creating self-sustaining human settlements, which are in harmony with all aspects of life, including the cultural, ecological and spiritual dimensions. Several such communities across India and the world are now in existence, through a series of grants and proactive initiatives.

The effort is part of Gaia Trust, a Danish-based charitable association founded in 1987 to help promote a new, global consciousness which sees our entire planet as a living organism with Humankind as an integral part of the entity.

External experts and guests from: Gaia Trust, Denmark

Economics

Recent Developments in India's Monetary Policy

27 Jul 2019

Monetary Policy. The most complex of all macroeconomic processes becomes even more complicated when you apply it to a developing country like India. Supply constraints, underdeveloped financial markets and resource gaps are just some of the challenges involved.

The lecture series addressed this via four key topics: The objectives and overview of India's monetary policy, Understanding Liquidity, Inflation and Interest rates, Emerging Trends in India's Monetary Policy, and the Non Banking Financial Companies (NBFC) crisis.

External experts and guests from: UTI Mutual Fund and Gitam University

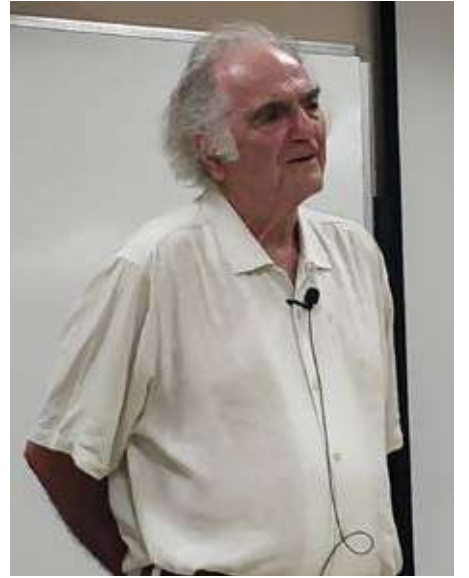
English Language and Literature

Vantage Point - Thought and Task: The Connect

30 Nov 2019

The workshop stressed on the importance of fostering good research approaches, the proper use of information, and tools on how to effectively communicate in this increasingly digital world. This included, for example, fostering intellectual discipline and focus in the current world of 'infobesity' (excessive availability of information), to achieve relevance and authentication.

Other approaches such as the marriage of qualitative research (such as positionality, epistemological, personal & critical reflexivity and reciprocity) and openness, introspection, empathy, objectivity, and deep enquiry; and the importance of communication problem solving, critical thinking, decision making, self-management and continuous updation for better employment opportunities were also delved into.



Achievements & Participation

Faculty

Mathematics and Computer Science

Dr. K S Sridharan

Resource Person, Faculty Development Programme on Machine Learning & Deep Learning and Applications, Dept. of Electronics and Communication Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, 25-26 2019.

Prof. V Chandrasekaran

Resource Person and Invited talk, Faculty Development Programme on Machine Learning & Deep Learning and Applications, Dept. of Electronics and Communication Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, 25-26 2019.

Sri Darshan Gera

Resource person, Faculty Development Programme on Machine Learning & Deep Learning and Applications, Dept. of Electronics and Communication Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, 25-26 2019.

Resource person, Workshop on Recent trends in Machine Learning and Importance of Python Programming, Dept. of Computer Science, Chennai National Arts and Science College, 7 Mar 2020.

Sri V Bhaskaran

Technical Poster on Feasibility Study of an inter-operable data analysis platform for clinical data, accepted at IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC 2019), Pune, 16-19 Dec 2019.

Dr. Ajith Padyana

Mentoring and guiding Atal Tinkering Lab students for their research thinking and innovation in latest trends and technology.

Dr. Pallav Kumar Baruah

Key Note Talk on Set Membership Problem, Workshop on Geo Spatial Technology and its Applications, Dr. Ambedkar Institute of Technology, Bangalore, 28-30 Aug 2019.

Resource Person and three Invited talks, Faculty Development Programme on Machine Learning & Deep Learning and Applications, Dept. of Electronics and Communication Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, 25-26 2019.

Resource Person on a Panel Discussion: Fostering Industry Academia Partnership, International Conference on High

Performance Computing, Data, and Analytics (HiPC 2019), Pune, 16-19 Dec 2019.

Attended the 9th IEEE International Advance Computing Conference (IACC 2019), MAM College of Engineering, Tiruchirappalli, Tamil Nadu, 13-14 Dec 2019.

Attended the 2nd Workshop on Education for High Performance Computing (EduHiPC 2019), Hyderabad, 16-17 Dec 2019.

Attended a Faculty Development Programme on Recent Trends in Information Technology, Dept. of Information Technology, Kalasalingam Academy of Research and Education, Krishnankoil, Tamil Nadu, 18-24 May 2020

Attend a #EduTECHAsia Webinar on Education going online, now and for the future, 14 May 2020.

Dr. S Balasubramanian

Second Runner up in Indian Driving Dataset Semantic Segmentation Challenge, Workshop on Recent trends in Machine Learning and Importance of Python Programming, Dept. of Computer Science, Chennai National Arts and Science College, 7 Mar 2020.

Completed an online certification course on Coursera, Introduction to Ordinary Differential Equations, authorized by Korea Advanced Institute of Science and Technology (KAIST).

Dr. Avadhesh Kumar

Awarded a certificate for serving as a Reviewer of Mathematical Methods in the Applied Sciences, an SCI Journal, 2020.

Sri Udhay R Shankar

Attended the 9th IEEE International Advance Computing Conference (IACC 2019), MAM College of Engineering, Tiruchirappalli, Tamil Nadu, 13-14 Dec 2019.

Sri Sapan Gupta

Attended a workshop on R Programming Language, IIT Bombay, 9 Nov 2019.

Physics

Dr. Gowrishankar R

Resource person, Workshop on Effective Teaching Approach to Applied/Engineering Physics, Jawaharlal Nehru Technological University (JNTU), Anantapur, Andhra Pradesh, 5-7 Aug 2019.

External Examiner, Practical Examination for M.Sc. in Electronics and Communications, Dept. of Electronics, Sri Krishnadevaraya University, Anantapur, Andhra Pradesh, 5-6 Dec 2019.

Dr. Murali Ravi

Product Patent filed. CBR Number: 29859 "Small Area Imaging Gamma Camera".

This IP covers all the details of the developed Small field of View Gamma Camera which has the capability to image the organ of interest in Sitting Supine and Lying Supine orientations.

Dr. (Mrs.) Vedavathi Aluri

Completed an online certification course on Udemy, Python for Data Science and Machine Learning Boot-camp.

Attended a workshop on Characterization Techniques, Jawaharlal Nehru Technological University, Anantapur, Andhra Pradesh, 7 Dec 2019.

Attended a virtual Faculty Development Programme on Managing Online Classes and co-creating Massive Open Online Courses (MOOCs) 2.0, Teaching Learning College, Ramanujan College (University of Delhi), 18 May - 1 Jun 2020.

Prof. S Siva Sankara Sai

Attended the IEEE International Conference on Advanced Networks and Telecommunications Systems (IEEE-ANTS-2019), Goa, 16-19 Dec 2019.

Dr. (Miss) Deepa Seetharaman

Attended a workshop on Characterization Techniques, Jawaharlal Nehru Technological University, Anantapur, Andhra Pradesh, 7 Dec 2019.

Attended a hands-on training course on Calibration, maintenance and use of Simultaneous TGA/DSC Analyzer, TA Instruments Division, Bangalore, 17 Feb 2020.

Dr. (Mrs.) C Prathibha

Attended a workshop on Characterization Techniques, Jawaharlal Nehru Technological University, Anantapur, Andhra Pradesh, 7 Dec 2019.

Attended an Elsevier Webinar on Improving Research Planning Skills, Technical Institute, 28 Apr 2020.

Dr. V Sai Muthukumar

Participated in a virtual event on Biophotonics Congress: Biomedical Optics, Optical Society of America, 20-23 April 2020.

Chemistry**Dr. V N Ravi Kishore Vutukuri**

Selected as Honorary Member of the Editorial Board of the International Journal of Biosciences and Technology (IJBST) Journal Group, a Non-profit Peer Reviewed Open Access Journal Group, Nov 2019,

Invited to Resource Generation Camp (RGC) for India's Chemistry Olympiad Program at Homi Bhabha Centre for Science Education (HBCSE), a National Centre of the Tata Institute of Fundamental Research (TIFR), Mumbai, 22-25 Sep 2019.

Dr. (Mrs.) G Pavana Kumari

Invited talk on Stereo Chemistry and Asymmetric Synthesis and Positive Thinking for Students, National Seminar on Emerging Trends in Chemical and Environmental Sciences, Govt. College, Anantapur, 6-7 Feb 2020.

Dr. (Mrs.) V Prathyusha

Attended a virtual Faculty Development Programme on Managing Online Classes and co-creating Massive Open Online Courses (MOOCs) 2.0, Teaching Learning College, Ramanujan College (University of Delhi), 18 May - 1 Jun 2020.

Biosciences**Dr. B E Pradeep**

Invited Speaker at International Symposium on Discovery of Actionable Targets in Infectious Diseases, Yenepoya University, Mangalore, 26 Nov 2019.

Invited speaker at MedTech Innovation day, Re-inventing Drug discovery by digitization & Novel technologies, Jubilant Biosys, Bangalore, 6 Dec 2019.

Invited speaker for the symposium, ESKAPE pathogens, Centre for Infectious Disease Research, Indian Institute of Science, 21 Dec 2019.

Dr. A S Vishwanathan

Resource person for Lifesciences, Regional STEM Teacher Training Workshop on Research Based Pedagogical Tools, in collaboration with Indian Institute of Science Education and Research (IISER), Pune, Oriental University, Indore, 26-28 Jun 2019.

Resource person for Lifesciences, Regional STEM Teacher Training Workshop on Research Based Pedagogical Tools, in collaboration with Indian Institute of Science Education and Research (IISER), Pune, Sir Padampat Singhania University, Udaipur, Rajasthan, 17-19 Feb 2020.

Dr. S Venketesh

Invited lecture on Metabolic Rewiring promotes Amyloidogenesis in Huntington's disease: Potential Biomarkers and Therapeutic Targets, Recent Trends in Biosciences, St. Peter's Institute of Higher Education and Research, Chennai, 7-8 Aug 2019.

Mrs. B Anusha

Participated in the SAKURA Science Exchange Program (organized by the Government of Japan), Japan Advanced Institute of Science and Technology (JAIST), Nomi, Ishikawa, Japan, 16-25 Aug 2020.

Dr. (Mrs.) Pallavi C

Attended a workshop on Recent Trends in Bioinformatics for Exploratory Analysis of Biological Data, St. Francis College for Women, Hyderabad, 16-18 Jan 2020.

Completed an Online Certification Course, Descriptive Statistics with R Software, The National Programme on Technology Enhanced Learning (NPTEL), May 2020

Dr. Anandkumar K

Participated in a workshop by the International Association of Sai Vibrionics Practitioners, Prasanthi Nilayam, 17-22 Nov 2019, and have qualified as an Associate Vibrionics Practitioner.

Dr. K N Naresh

Attended a webinar on Herbals at Home for Health Management during Covid-19, The Maharaja Sayajirao University of Baroda, Gujarat, 9 May 2020.

Attended a webinar on The Science behind Covid-19, Harvard University, Cambridge, MA, USA, 24 Apr 2020.

Food and Nutritional Sciences**Prof. (Mrs.) B Andallu**

Invited talk on Role of Phytochemicals in Spices in Healthcare, 107th Indian Science Congress, University of Agricultural Sciences, Bangalore, 3-7 Jan 2020.

Attended a webinar and Q&A session on Ayurveda Protection - Health Tips from World Renowned Experts, 30 May 2020.

Dr. (Mrs.) A Sumana

Nominated as a member of the Board of Studies (2019/20 and 2020/21), Dept. of Home Science, KVR Government College for Women, Kurnool, Andhra Pradesh.

Attended a webinar on Innovation & Entrepreneurship Ecosystem in Educational Institutes, SIES College of Arts, Science and Commerce affiliated to University of Mumbai in Collaboration with IITB-DSS School of Entrepreneurship, IIT-B'e-cell and ENACTUS India, Mumbai, 17 May 2020

Attended a webinar on Post Covid-19: Challenges and Opportunities for Indian Food Industry, MOP Vaishnav College for Women, Chennai, 25 May 2020

Attended a webinar and Q&A session on Ayurveda Protection

for the next 100 days - Health tips seeking cure for Covid-19 from World Renowned Ayurveda Experts, New Delhi Institute of Management, 30 May 2020.

Dr. (Mrs.) Ambati Padmaja

Received 3rd place for oral presentation for the paper, Development of instant soup mix from Muntingia calabura fruit, FOODS 2019 - ITAF: International Conference on Innovations and Technological Advances in Food, M O P Vaishnav College for Women, Chennai, 5-6 Aug 2019.

Management and Commerce**Dr. (Mrs.) Swetha Thiruchanuru**

Completed an online certification course, Mindfulness Practitioner Course (Level 1, 2, 3 & Master), Ancient Art of Mindfulness, Academy of Modern Applied Psychology, 20 May 2020.

Attended a webinar on Research Capability Building - a Strategy to promote Research Culture in Higher Education, Bhavan's Vivekananda College of Science, Secunderabad, 12-14 May 2020.

Dr. Sayee Manohar K

Chaired Conference Sessions, National Conference on Turbulence and Triumph in Business Environment (TTBE-2020), Government Arts College, Salem, Tamil Nadu, 29 Jan 2020.

Chaired Conference Sessions, National Conference on Indian Commerce & Industry, Ramakrishna Mission Vivekananda College, Chennai, 28 Feb 2020.

Prof. (Miss) N Niranjana

Resource Person, Faculty Development Programme on The Art of Effective Teaching (online), Excel College for Commerce and Science, Komarapalayam, Tamil Nadu, 14 May 2020 .

Received the Bharat Gaurav Award (conferred by leading lights of the Indian Government every year) for work in the field of Education, New Delhi, 2019.

Dr. G S Srirangarajan

Invited as a Member of the Administrative and Audit Committee, JAIN University, Bangalore, Oct 2019.

Attended the 4th Indian Edition of the Education Innovation Conference, organized by the Economic Policy Group (EPG), Bangalore, 19 Nov 2019.

Sri Vivek Kapoor

Nominated by CCS Haryana Agricultural University to evaluate

their M.B.A. Students (M.B.A. in Agribusiness and General M.B.A. programmes), Jun 2019.

Sri M S Sai Vinod

Attended an online workshop on Scientific Writing for Journals, organized by Springer Nature, 20 May 2020.

Attended a virtual conference on Earth Day Energathon 2020, The Institute of Green Engineers (IGEN), 2 May 2020.

Dr. B Chandrasekhar

Completed an Online Certification Course on Certified Credit Risk Analyst, Association of International Wealth Management of India (AIWMI), Feb-Apr 2020 .

Completed an Online Certification Course on Fixed Income Investing, Association of International Wealth Management of India (AIWMI), 10 Apr - 12 May, 2020

Sri S Sai Manohar

Attended a training programme on Business Analytics, PSG Institute of Management, Coimbatore, 29-30 Aug 2019

Sri Arvind Hejmadi

Attended a webinar on Navigating the Crisis & Beyond: Perspectives for Leaders in South Asia, Harvard Business School, Cambridge, MA, USA, 11 Apr 2020.

Mrs. Akanksha Aggarwal

Attended a workshop on Achieving Excellence in Research Endeavor at PSG Institute of Management, Coimbatore, 14-15 Feb 2020.

Dr. Sanjay Mahalingam

Completed the Business Assessor Program of Confederation of Indian Industry (CII), and provisionally certified as an assessor of organizations using the International EFQM framework, 4-11 May 2020.

Miss Aparna V

Attended a webinar on Academic Research Methodology, Publication and Ethics, AICTE and Elsevier, 28 Apr 2020.

Dr. (Mrs.) C Jayashree

Completed an Online Certification Course, Refresher Course In Commerce, SWAYAM, 1 Sep 2019 - 15 Jan 2020.

Completed an Online Certification Course, Financial Markets & Emerging Business Models, SWAYAM, 15 Oct 2019 - 30 Jan 2020.

Completed an online course, Descriptive Statistics with R Software, The National Programme on Technology Enhanced Learning (NPTEL), May 2020

Attended a virtual Faculty Development Programme on Technology enabled Teaching and Remote Learning, St. Anne's College for Women, Hyderabad, 30 May 2020.

Attended an online workshop on Structural Equation Model (SEM) and Confirmatory Factor Analysis (CFA) using AMOS, Institute for Statistics and Analytical Research (ISAR), 24-25 May 2020.

Economics

Dr. G Raghavender Raju

Peer Reviewer for the Journal, Journal of Economic Policy and Research.

Dr. Gopakumar K U

Faculty advisor for RBI Policy Challenge (a National-level competition). Winners at the State level and South Zone level.

Education

Prof. (Miss) Madhu Kapani

Conferred a Life-Time Achievement Award in the field of Education and Teacher Education by The Indian Association of Teacher Educators (IATE), IATE National Seminar, Ravenshaw University, Cuttack, 27-28 Jan 2020.

Resource person and Invited talk on Social Inclusion, Sustainable Development and Empowerment, The Indian Association of Teacher Educators (IATE), IATE National Seminar, Ravenshaw University, Cuttack, 27-28 Jan 2020

Dr. (Mrs.) P Lavanya

Attended a workshop on Modern Methods for Teaching-Learning Practices, Krishna University, Machilipatnam, Andhra Pradesh, 12-13 May 2020.

Attended a virtual Faculty Development Programme on Managing Online Classes and co-creating Massive Open Online Courses (MOOCs) 2.0, Teaching Learning College, Ramanujan College (University of Delhi), 18 May - 1 Jun 2020.

Mrs. B Saisoujanya Kumari

Attended an online workshop on Research Methodology in Social Sciences, Vasanta College for Women, Varanasi, 17-23 May 2020.

Mrs. P Padmambika

Participated in a webinar on Digital Transformation, Poornima Institute of Engineering and Technology, Rajasthan, 29 May 2020.

English Language and Literature

Dr. Aruna Kumar Behera

Conferred IRDP Group of Journals' Award for Teaching, Research and Publications, Chennai, 23 Feb 2020

Nominated by Management Teachers Consortium Global (MTC Global), for Distinguished Teacher Award, English, 2020.

Miss Sai Archana M

Paper Presentation on Quality of Higher Education and Vocational Preparedness: Bridging the Divide Higher Education in India, Central University of Andhra Pradesh, Anantapur, 11 Nov 2019.

Paper Presentation, National Conference on Changing Classroom Factors: Teachers, Learners and Instructional Environment, English and Foreign Languages University, Hyderabad, 6-7 Jan 2020.

Attended a webinar on Academic Research Methodology, Publication and Ethics, AICTE and Elsevier, 28 Apr 2020.

Dr. (Miss) P L Rani

Attended a symposium on Multiple Perspectives on English Language, Literatures and Theories, Osmania University Centre for International Programme (OUCIP), Hyderabad, 28 Dec 2019.

Dr. (Miss) Dibba Bhargavi, Dr. (Mrs.) Maitali Khanna, Dr. (Miss) Nelli Vani Sri

Attended a symposium on Multiple Perspectives on English Language, Literatures and Theories, Osmania University Centre for International Programme (OUCIP), Hyderabad, 28 Dec 2019.

Miss S Lakshmi Menon

Attended an Elsevier Webinar on Improving Research Planning Skills, Technical Institute, 28 Apr 2020.

Attended a webinar on Future Learners Need Learning Strategies, Cambridge Online Experience, Asia, 20 May 2020.

Dr. (Miss) P L Rani, Dr. Aruna Kumar Behera, Dr. (Miss) Dibba Bhargavi, Dr. (Mrs.) Maitali Khanna, Dr. (Ms.) Vijaya Lekshmi R, Miss Sai Archana M

Attended the Times Litfest Bengaluru, Jayamahar Palace, Bengaluru, 8-9 Feb 2020.

Music

Dr. (Ms.) K Kanaka Durga

Awarded a Ph.D. (Music) on Pedagogical Aspects of Manodharma Sangitam in Karnatic Classical Music, Potti Sreeramulu Telugu University, Hyderabad, Aug 2019.

Sri Prafulla Kumar Meher

Qualified candidate at UGC National Eligibility Test (NET) in Music, Dec 2019.

Sri Raghavendra

Awarded 'B-High' grade by Prasar Bharati, All India Radio under the Hindustani Classical Vocal Music category, 11 Sep 2019.

Awarded 'Grade-2' (B-High) by Prasar Bharati, All India Radio under the Music Composership category, Jan 2020.

Delivered a Solo Performance at the prestigious 85th Akhila Bharatha Kannada Sahitya Sammelana, Kalburgi, Karnataka, 5 Feb 2020.

Received the Lalita Chetana Prashasti award for contribution to the field of Music, 25 Sep 2019.

Sri Nishikant Barodekar

Invited Panelist, Member of External Examination, Dr. Gangubai Hangal Music & Performing Arts University, Mysore, Karnataka, Jan 2020.

Sri S Sai Ram

Invited Talk on Aesthetics in Music and Spirituality, Fifth International Conference on Music and Dance (ICMD) 2020, Indiranagar Sangeet Sabha, Bangalore, 3-8 Jan 2020.

Doctoral Research Scholars

Mathematics and Computer Science

Sri Ananth V S

Selected for Direct Senior Research Fellowship by Council of Scientific and Industrial Research (CSIR).

Sri S R Pranav Sai

Qualified in the Institute of Actuaries of India (IAI) Exams in ACET (Actuarial Common Entrance Test), CS1 (Actuarial Sciences) and CP3 (Communication Practice).

Sri Rohan Yashraj Gupta

Qualified in the Institute of Actuaries of India (IAI) Exams in ACET (Actuarial Common Entrance Test) and CM2 (Financial Engineering and Loss Reserving).

Physics

Miss Anjana Biswas

Attended a workshop on Characterization Techniques, Jawaharlal Nehru Technological University, Anantapur, Andhra Pradesh, 7 Dec 2019.

Miss Susshma N

Course on Gamma Ray Spectroscopy, UGC-DAE CSR, Kolkata Centre, 2-13 Dec 2019.

Chemistry

Sri Seemesh Bhaskar

Attended a workshop on Spectroscopic Ellipsometry, Jawaharlal Nehru Centre for Advance Scientific Research (JNCASR), Bangalore, 4 Nov 2019.

Miss Sai Kiran M

Attended the 5th DAE-BRNS National workshop on Materials Chemistry (NWMC-2019) (and recipient of the best answer in the quiz), Manipal University, Jaipur, Rajasthan, 8-9 Nov 2019.

Attended a workshop on Characterization Techniques, Jawaharlal Nehru Technological University, Anantapur, Andhra Pradesh, 7 Dec 2019.

Recipient of DST Innovation in Scientific Pursuit for Inspired Research (INSPIRE) Fellowship.

Sri Ram Murthy, Sri Sai Prasad Nayak

Attended a virtual conference on Materials for Energy Harvesting and Catalysis, IISER Kolkata and TIFR Mumbai, 1-3 May 2020.

Miss K V Seetarama Mani Chandrika

Attended a workshop on Computer-Aided Drug design and Computational Biology, Schrodinger Inc., Bangalore, 7-9 Aug 2019.

Attended a Technical Education Quality Improvement Programme on Analytical Techniques, Jawaharlal Nehru Technological University, Anantapur, Andhra Pradesh, 7 Dec 2019.

Dr. Chelli Sai Manohar

Conducted a workshop, Recent Trends in Chemistry, St. Xavier's College, Thumba, Kerala, 26-27 Sep 2019.

Miss Amitananda Dash

Completed an internship, Dr. Reddy's Institute of Life Sciences, Hyderabad, 21 Oct - 8 Nov 2019.

Attended a workshop on Characterization Techniques, Jawaharlal Nehru Technological University, Anantapur, Andhra Pradesh, 7 Dec 2019.

Sri Undavalli Venkata Gopi

Attended a workshop on Materials For Energy Storage Devices, Jawaharlal Nehru Technological University, Anantapur, Andhra Pradesh, 27-28 Dec 2019.

Qualified for the National-level examination, GATE (All India rank 2805) in Chemistry, 2019.

Biosciences

Sri Balaram Khamari

First Prize in Poster presentation, 5th Annual South Zone Critical Care Conference, Visakhapatnam, Andhra Pradesh, 15-18 Aug 2019.

Sri Pachi Pulusu Chankya

Recipient of ICMR Senior Research Fellowship.

Food and Nutritional Sciences

Miss Ashrita C Haldipur

Attended an online workshop on DNA ligand and protein ligand docking, Qstatix Private Limited, Hyderabad, 17-19 Jul 2019.

Attended an International Symposium on Fats in Maternal and Child Health Nutrition - Indian Context, ICMR - National Institute of Nutrition, Hyderabad, India, 18 Sep 2018.

Miss Manjula Devi Ghoora, Miss Shrijana Rasaily

Attended the 2019 Park AFM Workshop on AFM Working Principles and Applications, Indian Institute of Science, Bangalore, 20-21 Jun 2019.

Miss N Saiharini

Attended a webinar on Improving Research Planning & Writing Skills at Technical Institutes, AICTE for Higher Education, 28 Apr 2020.

Miss Alisha Pradhan

Attended a virtual workshop on Patent searching, Drafting, and filing, Panimalar Institute of Technology, Chennai, 29 May - 2 Jun 2020.

Miss Alisha Pradhan, Miss Sai Sruthi Shree K K, Miss Sai Dharshini S

Qualified for the National-level examination, UGC-NET (LS) in Home Science, 2019.

Management and Commerce**Sri U Pranav**

Attended the 6th Management Doctoral Research Colloquium and VGSOM Research Scholars' Day, IIT Kharagpur, 5-6 Feb 2020.

Attended the Tenth National Level Workshop on Achieving Excellence in Research Endeavour, PSG Institute of Management, Coimbatore, 14-15 Feb 2020.

Miss Padmalalitha T V

Attended the 6th Management Doctoral Research Colloquium and VGSOM Research Scholars' Day, IIT Kharagpur, 5-6 Feb 2020.

Attended the Tenth National Level Workshop on Achieving Excellence in Research Endeavour, PSG Institute of Management, Coimbatore, 14-15 Feb 2020.

Sri Barathram B

Attended a workshop on Advanced Research Methodology, Dr. N G P College of Arts and Science, Coimbatore, Tamil Nadu, 11-13 Dec 2019.

Attended the South Zone Student Research Convention (Anveshan 2020), Bharathidasan University, Tiruchirapalli, Tamil Nadu, 21-22 Jan 2020.

English Language & Literature**Miss Umadevi V S**

Completed a 12-week National Programme on Technology Enhanced Learning (NPTEL) Online Certificate course, Indian Fiction in English, conducted by the Indian Institute of Technology, Madras.

Sakura Science Exchange Programme

Japan Advanced Institute of Science and Technology, Japan

Anusha B, K V Seetarama Mani Chandrika, Ashritha C Haldipur, Anjana Biswas, Chelli Sai Manohar, Swayamsiddha Kar, Ranjan Rai, Roshan Rai, Sai Prasad Nayak, V N S Malleswara Kota D

As part of prestigious SAKURA Science Exchange Program organized by the Japan Government, eight Doctoral Research Scholars and two teachers (from the Departments of Physics, Chemistry, Biosciences and Food & Nutritional Sciences, SSSIHL) visited Japan Advanced Institute of Science and Technology (JAIST), in the Ishikawa Prefecture, Japan from 16 to 26 August 2019.

This year's research focused on Sustainable Materials. A host of six professors at JAIST exposed SSSIHL researchers to the systematic protocols of research, engaged them in discussions (at the mentor group's journal clubs), and trained the team in various advanced synthesis, characterization and applications undertaken at JAIST.

The various techniques picked up ranged from computational simulation to experimental hands-on work. The visit yielded a good amount of collaborations, ideas and a couple of publications in peer-reviewed journals.



Students

Organizational Visits

At the end of each academic year, final year graduating students from various departments go on official visits to reputed organizations to get a feel of how what they learn in the classroom is applied in the real world. Students are accompanied by a few faculty members on these trips.

During the academic year 2019/20, these included:

Management & Commerce

Anantapur Campus:

I M.B.A. students, Anekal, Karnataka and Bangalore, 15-16 Dec 2019

Organizations visited: Sai Vishram Business Hotel and Srinivasan Services Trust (SST). This included villages adopted by SST for inclusive development.

I M.B.A. students, Anantapur, 29 Dec 2019.

Organizations visited: Rural development and self-employment Training Institute (RUDSETI), Anantapur, Andhra Pradesh.

Prasanthi Nilayam Campus:

I M.B.A. students, Bangalore, Karnataka & Hosur, Tamil Nadu, 17-18 Sep 2019

Organizations visited: GE Healthcare, Times of India and TVS Motors

I M.B.A. students, Anekal, Karnataka and Bangalore, 17-18 Dec 2019

Organizations visited: Sai Vishram Business Hotel and Srinivasan Services Trust (SST). This included villages adopted by SST for inclusive development.

II B.B.A. students, Bangalore, 17 Feb 2020

Organizations visited: Volvo Construction Equipment

Physics

Prasanthi Nilayam Campus:

M.Sc. in Physics and M.Tech. in Optoelectronics & Communications students, 10 Feb 2020

Organizations visited: Geological Survey of India (GSI), Sri Sathya Sai Airport, Puttaparthi.



National Examinations

A high percentage of SSSIHL final year postgraduate students qualified in national exams such as the GATE/JEST or the CSIR-UGC NET in 2019/20. The list below includes the national rank for each exam.

Ajay Mukund S (Computer Science)

(GATE) 13948 (CSIR UGC-NET for JRF) UGC-NET (LS)

Rishi Sridhar Rao (Computer Science)

(GATE) 8249

Mahendrakar Vaibhav (Physics)

(GATE) 261 (JEST) 11

R Sai Santhosh (Physics)

(GATE) 587

M Venkatesh Prasad Sagar (Physics)

(GATE) 798

Sai Krishna N (Physics)

(GATE) 1221

Malhar Anupam Nagar (Physics)

(GATE) 1361

Josyula Sai Prashanth (Physics)

(GATE) 1610

Nithishkumar C V (Physics)

(GATE) 1928

Damagatla Sai Vamshi Krishna (Physics)

(GATE)

Ankush Kumar Gupta (Physics)

(GATE) 3730

Jasa Ranjan Podh (Life Sciences & Life Sciences XL)

(GATE) 568 (CSIR UGC-NET for JRF) 85

Vasudeva Tati (Life Sciences XL)

(GATE) 787

Ayushman (Life Sciences)

(CSIR UGC-NET for JRF) 59

Sunirmala Sahoo (Life Sciences (XL) & Life Sciences)

(GATE) 161 (CSIR UGC-NET for JRF) 59

Kodam Pradeep (Life Sciences)

(GATE) 2307 (CSIR UGC-NET for JRF) 56

Srihari M (Life Sciences)

(GATE) 4610 (CSIR UGC-NET for JRF) 70

Rage Narmada (Home Science)

UGC-NET (LS)

Sparsh Sumnirom Subba (Home Science)

UGC-NET (LS)

Ashish Salamatani (Commerce)

UGC-NET (LS)

Tank Aditya Nitin (Tourism Administration & Management)

UGC-NET (LS)

G Venkata Asrith Bharadwaja (Management)

UGC-NET (LS)

Sai Venkata Sitaram Vandanapu (Management)

UGC-NET (LS)

R Sai Naveen (Management)

UGC-NET (LS)

Pokuri Sai Punitha (Management)

UGC-NET (LS)

Kurup Unninarayanan Sreenivasan (Economics)

UGC-NET (JRF)

Rohit Kumar Rajak (Economics)

UGC-NET (LS)

Nimesh Subba (Economics)

UGC-NET (LS)

Malepati Sudheshna (Education)

CTET

Petla Kalyani (Education)

CTET

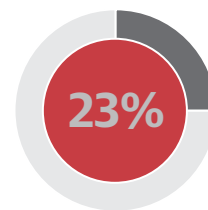
Sairema T (English)

UGC-NET (LS)

National Examination types

GATE (Graduate Aptitude Test in Engineering) | **CSIR** (Council of Scientific & Industrial Research) | **JRF** (Junior Research Fellowship) | **NET** (National Eligibility Test) | **LS** (Lectureship) | **JEST** (Joint Entrance Screening Test) | **CTET** (Central Teacher Eligibility Test)

National Exams (Combined)



GATE: 26% | CSIR UGC-NET for JRF: 10% | UGC-NET (JRF): 3% | UGC-NET (LS): 17% | JEST: 6% | CTET: 50%

This data pertains to final year postgraduate students who attempted these exams

Other National Examinations

In addition, students of various M.Sc. programmes at the Dept. of Mathematics & Computer Science who were eligible to take the Institute of Actuaries of India national and international examinations, and qualified, are mentioned below:

Bishal Gupta (IAI)

(CM2)

Vasa Manideep (IAI)

(ACET)

Aman Sharma (IAI)

(CS1)

Mariyala Naga Teja (IAI)

(ACET)

Yagnyeswar Satapathy (IAI)

(ACET)

Sai Suraj K Bhasker (IAI)

(CB3)

Institute of Actuaries of India (IAI) Exams:

ACET (Actuarial Common Entrance Test)

CB3 (Business Management)

CM2 (Financial Engineering and Loss Reserving)

CP3 (Communication Practice)

CP2 (Modelling Practice)

CS1 (Actuarial Sciences)

DS1 (Data Concepts and Visualization)

Projects & Dissertations

Listed below are the topics / areas of postgraduate and professional programme projects and dissertations for the academic year 2019/20.

Mathematics & Computer Science

M.Sc. in Mathematics

Review of Mathematical Modelling of Hansen's (Leprosy) Disease: Questions Unanswered - The Road Ahead, A Study on Outlier Detection Methods, Shortest Path Algorithm for Large Graphs, Generative Adversarial Networks, Study of loss functions for Face recognition, Database Design for Rheumatoid Arthritis Disease

M.Sc. in Data Science & Computing

Robotic Process Automation through Lokibots, Classification of Respiratory Diseases, Music Recommendations (Sai Bhajans) Service, Analytics and Intelligence in Healthcare Informatics

M.Tech. in Computer Science

A Study of Certain Motion Estimation Algorithms, Automatic detection and extraction of information from scanned documents, Predictive Analytics in Health Care, Smart HBasechainDB, Fraud Detection on Motor Vehicle Insurance Industry Using Apache Spark - Machine Learning, AI in Sports: Analyzing the run-up and delivery action of a fast bowler, Dynamic Detection and Mitigation of Meltdown, A Real-time Scalable Recommender System using Collaborative Filtering and NLP Techniques, Dynamic Detection and Mitigation of Spectre Attacks, Human Detection in Low Resolution Thermal Image Sequences, Interpretable capsule networks, A Spectral Domain Based Extension of Convolution to Graph-Structured Data and its applications to Semi-Supervised and Supervised Learning, Face Verification on Labeled Faces in the Wild using Different Mini Batch Mining Strategies, User Controlled In-Memory Cache Layer, Dynamic Detection and Mitigation of Spectre Attacks, Detection and Dynamic Mitigation of Meltdown, Evoting using Hyperledger Fabric Blockchain, Human detection in low resolution thermal image sequences, AI in sports - Analyzing the run up and delivery action of a fast bowler

B.C.A.

Wish Tree, a platform to Q and A, Email Service for Inhouse Requirements, Optical Character Recognition, Online Chess, IoT based LED Light Pattern, IoT based Mobile, IoT based Robotic Car, Fingerprint Sensor Authentication

Physics

M.Sc. in Physics

Gamma Irradiation Studies on Lead-Free Piezoelectric Polymer-Ceramic Composites, Study of Coffee-ring Patterns from Droplets of Clay Particle Suspensions, Investigations on the Structure of 24Mg Ground State and Low Lying Energy levels of 256Es, Time Resolved Third Order Nonlinear Optical Susceptibility Measurements Using Femtosecond Degenerate Four Wave Mixing: Automation and Analysis, Design and optimization of a Collimator for a Novel PET system using GATE Simulation Toolkit, Thermoelectric Properties of Quaternary Heusler Alloy RuZrTiAl, Towards Middle Ear Diagnostics using Low-Cost Optical Coherence Tomography, Luminescent Borate Glasses for Multifunctional Applications, Synthesis and Characterization of $\text{Li}_{1.3}\text{Al}_{0.3}\text{Ti}_{1.7x}\text{Zr}_x(\text{PO}_4)_3$ solid electrolytes for all solid-state Li-ion Batteries, Investigation of Nonlinear Optical Properties of PVDF-DAST Polymer Composite, Automation of Nonlinear Optical Properties Measurement Setups

M.Tech. in Optoelectronics & Communications

Reactive Wavelength tuning based Defragmentation Algorithm for Enhanced Spectrum Efficiency in Elastic Optical Networks, An Intent Based Smart Road Traffic Management System Using Software Defined Networking, Secure Transport of Medical Data from Edge Gateway to Host, Machine Learning Based Detection of DoS Attacks on Routers

Chemistry

M.Sc. in Chemistry

Formulation of Efflux Pump Inhibitor loaded Liposomes and Study of their Antibacterial Properties on Resistant Bacterial Strains, Valorization of Green Waste: Synthesis of Carbon Supported Ruthenium Nanoparticles, Synthesis of 4-Nitrochalcone Derivatives and Investigation of their Non-linear Optical Properties, Silver Nanoprism Synthesis for Tunable Plasmon-coupled Emission Enhancements and Assessment of Thyroid Dysfunction, Synthesis of Soret Colloids of Silver Nanocomposites for Augmented Plasmon-coupled Emission Enhancements and Accelerated Dye Reduction

Biosciences

M.Sc. in Biosciences

Comparative Analysis of the Protein Sequences of Various PDE Isoforms in PDE Superfamily, Identification of the Location of the Signature Sequence Motif in Various PDE Structures, Optimization of Physical and Nutritional Parameters for Efficient Cellulase production from Soil Cellulolytic Bacteria, Studies on the role of Nitro-reductases among clinically isolated Nitrofurantoin Resistant Bacterial Pathogens, Analysis

of Efflux-pump mediated antibiotic resistance among clinical *Acinetobacter baumannii* isolates, A Study on Relationship between Biofilm producing Genes and Antibiotic Resistance among Clinical Isolates of *Pseudomonas Aeruginosa* Treating Water using Plant based Coagulants and Disinfectants, In silico Analysis of Anti-bacterial and Immunomodulatory Potential of Secondary Metabolites from *Ganoderma sp.*: A Molecular Docking Approach, Diphenol-sensing Potential of Immobilized Hemocyanin: A Microplate based Photometric Study, Effect of C60 - Fullerenes on the Structure of Hemocyanin: An in silico study using Molecular Dynamics Simulations and Molecular Docking, Unbiased Screening for Glycolysis and TCA cycle Metabolic Pathways in Huntingtin Aggregate Formation using Yeast as a Model System, A Study on Hyper-metabolism associated with Familial forms of Amyotrophic Lateral Sclerosis in special reference to FUS and SOD, Unbiased Screening for Fructose, Mannose and Methane Metabolism in Huntingtin Aggregates Formation using Yeast as a Model System, Study the Role of Mitophagy Pathway in Amyloid Aggregation in Huntington's Disease by Unbiased Screening of Yeast Ko Library, A Study on Hyper-metabolism associated with Familial forms of Amyotrophic Lateral Sclerosis in special reference to TAR DNA binding protein-43 and C9orf72, Phytochemical Screening and Anti diabetic Potential of Ethyl acetate subfractions of *Trachyspermum ammi* Linn. Aerial parts

Food & Nutritional Sciences

M.Sc. in Food & Nutritional Sciences

Formulation and evaluation of foods for eye health, Characterization of dietary fiber and antioxidants from vegetable waste and utilization in foods, Formulation and characterization of ice cream with plant-based milk substitutes, Development, nutritional analysis and shelf life of 'Nutri Bar', Formulation and evaluation of plant-based ergogenic foods for young women athletes

Management & Commerce

M.B.A.

A study of the Social Media Marketing Strategies in the Indian Non-profit scenario, A study of Digital Marketing Strategies through the lens of three key players - The Consumer, The Company and the Consultant, Second hand Markets - A Consumer Perspective, Enhancing the Transparency of the Seed Supply Chain through Blockchain Technology, Smart Management of Operations using IoT solutions, Talent Acquisition: Efficacy of Recruitment Process, Digitalisation of HR: Digitalisation in Workplace - Impact on Employee Engagement, Learning Organisation: A Key Driver of Employee Engagement (with special reference to CMA CCGM Shared service centre, Chennai), A Study of Millennial Consumer Behaviour with reference to Fast Food and Street Food of

Hyderabad, A Study of Select Crisis Management Response in Business Organizations, Marketing of Event Management Services in India - A broad study, Study of Railway Employee Satisfaction of Bangalore Railway Division of South Western Railway, Corporate Financial Distress prediction of select Indian steel companies using logit and probit model techniques, Lean Six Sigma intervention for knowledge Management at the Dept. of Management & Commerce, SSSIHL, Measuring Patient satisfaction in Healthcare services using the SERVQUAL instrument, A Longitudinal Study of Continuous Improvement in SSSIHL, Employee Satisfaction in Higher Educational Institutions in India, Competitive Advantage through Supply Chain Management in the Indian E-Commerce Sector, Design of a Strategic Dashboard for Sri Sathya Sai Institute of Higher Medical Sciences, A Study of Consumer Attitudes towards paying for Music Streaming in India, Study on Resilience, Risk Tolerance and Investment Behaviour, Application of Blockchain in Retail trading in the Indian Stock Exchange, A Study on Mutual Fund as an Investment Vehicle for an Individual Investor, A Study of Non-performing Assets in the selected Private sector Banks, Application of Blockchain and RPA for Smart Management of KYC, A Study on Eco-Conscious Consumption Behaviour - with Special Reference to Millennials, Equity Analysis of Airline Industry, Develop Expansion strategies for a Bakery Startup in Moradabad, Study of Value Disciplines for Market Leadership for attaining the vision of a Quick Service Restaurant - Udupi Ruchi Café, Develop Business Model for a unique Pre-School, Multifocal study of the Regional Connectivity Scheme in India, Study of the IPL Business Model and Developing Alternate Auction Models for the IPL Players, Digital Marketing Strategies for Graamam - An Organic Soap Brand from Proto Village, A Study of Business Models for Superfoods Startup in India, Sustainable Rural Development through Education: A Case Study of Narsimpalli Village, Designing Business Model for Social Enterprises in Rural Health Care Sector, A Study of Digital Business Model for s Small Scale Enterprise: Case Study J.S. Processor, Rural Development through Market Linkage: A Case Study of Nimmalakuntha Village

Economics

M.A. in Economics

Determinants of Commercial Bank Credit and its impact on Economic Growth, Short term Migration in India: Determinants and impact of Educational Attainment, An Impact of Financial Schemes on Catastrophic Health Expenditure: A Panel Study, Analysis of External Debt: A Time Series Study on India, Multifractal Analysis of Equities: Evidence from the International Banking Sector, A Study on Impact of Derivatives in the Indian Stock Market Volatility, Analysis of Price Policy in Indian Agriculture, Determinants of Environmental Degradation: An Empirical Analysis of India, Blockchain and Cryptocurrencies: An Analysis of Bitcoin, Analysis of the Sustainability of India's Current Account Deficit

English Language & Literature

M.A. in English Language and Literature

Water and Man's Myriad Moods: A Theme-based Study of Selected Water Poems, A Pilgrimage Towards Truth and Beauty through Goodness: A Study of Selected Short Stories of Rabindranath Tagore

Central Research Instruments Facility (CRIF)

SSSIHL Central Research Instruments Facility (CRIF), Based at the Prasanthi Nilayam Campus, is one of the few such facilities in the country (and the first in a rural location) that houses advanced Characterization/ Analytical tools to carry out Translational Research in various areas of Science and Technology such as Physical, Biological, Chemical, Materials Science, Food and also Computational and Interdisciplinary Areas.

A Ph.D. is a person who helps others through his research and develops the country.

Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL

The facility, built with a funding of ₹45 crore with the kind support of Sri Sathya Sai Central Trust, hosts a range of cutting-edge instruments and laboratories as listed here. It has significantly strengthened the research facilities at SSSIHL by providing state-of-the-art infrastructural facilities under a single roof.

This has allowed faculty and postgraduate and doctoral students at the Institute to accelerate their research work in all the major research areas of the Faculty of Sciences - Health, Energy and Environment. It enables them to keep pace with the scientific developments taking place globally, and as a result, their research findings are being published in peer reviewed high impact journals. These concerted efforts to carry out research in cutting edge areas of Science and Technology helps contribute to the needs of society at large.

Full-time technical assistants with specific expertise operate and maintain the instruments and laboratories. SSSIHL CRIF facilitates the strengthening of interdisciplinary health related research collaborations between SSSIHL and Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS). Some of these include: Regenerative Medicine & Tissue Engineering, Rapid Detection of Endemic Diseases, Diabetic Retinopathy, Development of Cost Effective Multi-Modal Microscopes, SPCE-based Point of Care Devices, etc.

Core Facilities

The following core facilities at CRIF are shared resources offering a range of services to the research community at SSSIHL:

- Femto Fab Facility
- Electron Microscope Facility
- NMR & Mass Spectrometry Facilities
- Materials Characterization Facility
- Thermal and Optical Characterization Facilities
- Liquid Nitrogen Facility
- Central Utilities Facility
- Optical Imaging and Integration

Laboratories

In addition, CRIF hosts the following labs:

- Wet Chemistry Laboratories
- Functional Materials Laboratory
- Water Research and Electrochemistry
- Bio-Safety Laboratories: Level 1 and Level 2
- Functional Glasses and Ceramics Laboratory
- Non-linear Optics Laboratory
- Computational Science and Plasmonics



Collaborators

SSSIHL has successfully forged several research collaborations with leading organizations across India and abroad.

Academia & Research

- ICAR-Indian Institute of Horticultural Research, Bangalore
- Indian Institute of Technology, Madras and Kharagpur
- FDA-Center for Biologics Evaluation and Research, USA
- Indian Institute of Science Education and Research, Mohali
- Indira Gandhi Centre for Atomic Research, Kalpakkam
- University of Maryland, USA
- The Institute of Bioinformatics and Applied Biotechnology, Bangalore
- Raman Research Institute, Bangalore
- New Jersey Institute of Technology, USA
- Tata Institute for Fundamental Research, Mumbai
- Madras Diabetes Research Foundation, Chennai
- Clemson University, USA
- Geological Survey of India, Hyderabad
- Indian Institute of Science, Bangalore
- Universidad del Norte, Colombia
- National Institute of Nutrition, Hyderabad
- The Sahlgrenska University Hospital, Sweden
- Baylor College of Medicine, USA
- CSIR-National Chemical Laboratory, Pune
- University of Wollongong, Australia
- University of Colorado, USA
- International Centre for Genetic Engineering and Biotechnology, New Delhi
- National Institute of Pharmaceutical Education & Research, Hyderabad
- Japan Advanced Institute of Science and Technology, Japan
- CSIR-Indian Institute of Chemical Technology, Hyderabad
- Institute for Photonics and Nanotechnologies, Italy
- Dr. Reddy's Institute of Life Sciences, Hyderabad
- Central Leprosy Teaching and Research Institute, Chennai
- Centre for Materials for Electronics Technology, Pune
- CSIR-Central Drug Research Institute, Lucknow
- International Center for Genetic Engineering & Biotechnology, New Delhi
- National Animal Resource Facility for Biomedical Research, Hyderabad
- CSIR-Central Electro Chemical Research Institute, Karaikudi

Industry

- Grey Scientific Laboratories, Visakapatnam
- Agilent Technologies India Pvt. Ltd.
- Amara Raja Batteries Pvt. Ltd., Tirupati
- Twastrix, Pune
- LightMotif Automation Sensors and Systems Pvt. Ltd., Hyderabad
- Omix Research & Diagnostics Laboratories Pvt. Ltd., Bangalore
- Lab Engineers, Bangalore
- Labby Inc., USA
- Insta Power Ltd., New Delhi
- Symrise Pvt. Ltd., Chennai
- Indras Pvt. Ltd., Hyderabad
- Syngene international Ltd., Bangalore
- Mylan Laboratories, Bangalore



SSSIHL COVID-19 Research

Researchers at SSSIHL have been working – both indigenously and with healthcare partnerships – on a number of areas to better understand the coronavirus (COVID-19) in an effort to find solutions that will protect our communities and offer expert advice to the local and national government.

Rapid Testing Platform

STAR Labs (SSSIHL Central Research Instruments Facility), under the SSSIHL-CSR Fund, is working on reliable testing platforms, based on plasmonics, towards the detection of COVID-19 antigen in nasopharyngeal swabs / saliva samples and COVID-19 antibodies in blood / serum / plasma samples. The test times for this platform is expected to be within a few minutes. The sensitive plasmonic platform will translate into point-of-care technologies with detection limits that are significantly better than currently available testing platforms. These indigenously developed technologies with the core competency of lower reagent usage, economically viability and shorter test times will aid in scaling up of the current screening/testing rates to serve one and all.

Invivo Mathematical Modeling of COVID-19

The COVID-19 pandemic has affected over 212 countries and territories. Well-designed drugs and vaccines for the elimination of this virus is the need of the hour. Various drug interventions, such as Arbidol, Remdesivir, Inteferon, Ritonavir/ Lopinavir, Hydroxychloroquine (HCQ), BCG Vaccine, etc. – acting at multiple stages of pathogenesis of COVID-19 – can substantially reduce the mortality rates. We performed within-host mathematical modeling studies to understand the efficacy of these drug interventions and the role of crucial inflammatory mediators, and the behaviour of immune response towards this novel coronavirus. Our models identified different combinations of antiviral drugs to reduce the viral load and eliminate the infection. We also observed that combining HCQ and the BCG vaccination resulted in prevention of viral replication and activated innate immunity to eliminate virus from the host.

Drug Repurposing, Natural Products & Derivatives

Drug Repurposing

Nitrogen based compounds such as pyrazoles, pyrimidines, quinolines, and other phytochemical constituents from many medicinal plants and herbs have gained interest due to their potent medicinal values, especially anti-viral properties. In order to utilize these chemical entities, researchers performed in silico studies involving molecular docking and molecular dynamics of the drugs derived from the aforementioned sources against the COVID-19 virus in entry, replication and innate immune response stages in order to identify the potential candidates.

Natural Products

Bio-active constituents present in many medicinal plants that are known to possess anti-viral activity will be studied. They will be first subjected to the computational studies in order to assess their probable efficacy. Once the potential of their activity is established against the COVID-19 virus, we aim to isolate and characterize the active components from the plants and study their properties in vitro to verify the claims.

Semi-synthetic Derivatives

Once the bio-active components of the medicinal plants are isolated and studied, we aim to carry out synthetic modifications to the active component, thus making further derivatives which

will help us obtain a structure-activity based lead optimization. This in turn will help us increase the efficacy of the compounds. After the in vitro studies, the lead compounds will be taken up for further in vivo studies.

Synthetic Derivatives

There are a library of compounds that have been synthesized by us. These include novel spirobibenzopyrans, benzopyrylium salts, azines, coumarins, chalcones, bis-chalcones, etc. We aim to explore the in vitro potency of these molecules against the COVID-19 virus. Depending on results, further actions, which include lead optimization based on the structure-activity relationship and in vivo studies, will be undertaken.

COVID-19 protease dual-inhibitors

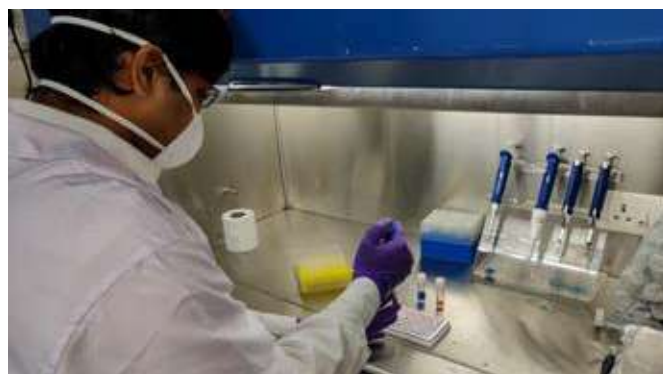
Proteases of SARS-CoV-2 (3CLp and PLp) play an important role in its life cycle, making them ideal targets for drugs. One of the main problems with respect to identifying an inhibitor, is the capability of the virus to mutate, making it a necessity, to search for molecules that are capable of inhibiting both the proteases. This is achieved by the construction of a common pharmacophore model that defines the characteristic features of the pocket and the attributes of the ligand that make it a probable dual-inhibitor. Various databases of drugs and natural products were screened based on this model, and the best hits were subjected to molecular dynamics simulations.

Data Mining

At the time of publication, the global case-fatality rate of COVID-19 worldwide was 3.3%, but only 1.7% in India (Source: WHO). A theory on this is that the environmental temperature in India is on the higher side in comparison to the European continent (for example), and how this might influence case-fatality rate in COVID-19. We are investigating this aspect in our research. COVID-19 related data released by public health agencies, along with sources of data reported in quality worldwide media, will be leveraged to mine knowledge and identify patterns and themes related to the disease.

Teaching during the Pandemic - Best Practices

School closures has impeded learning everywhere. International organizations like the UNICEF have recommended that educational institutions plan and evolve alternative modes of learning to ensure continuity. The research seeks to study and graft best practices of resilient schools that have successfully navigated the crisis and ensured continuity of learning onto select experiment schools. The practices to be examined span the spectrum of learning activities in school education, from content delivery to evaluation.



Research Areas

The strong research environment at SSSIHL has led to high quality need-based research, focused on societal benefit, across all disciplines.

Sciences

Differential and Fourier Analysis

Global problems of hyperbolic equations are addressed using new metrics and their associated pseudo-differential calculus. New identities for partial fractions of cyclotomic polynomials are derived. The identities are applied to several problems in the area of partition of numbers. Further, using Fourier analysis, the Fourier-Dedekind sums and the associated reciprocity theorems are generalized.

Studies on controllability of various kinds of differential equations with instantaneous as well as non-instantaneous impulses in abstract spaces is carried out. The research focus is to get insight into the different types of controllability, existence, and stability of solutions of fractional differential equations. For example, existence and uniqueness of solutions for Caputo-Hadamard fractional differential equation with impulsive boundary conditions is attempted.

Studies related to qualitative properties of solutions of generalized higher order systems ordinary differential equations is in progress. Conditions guaranteeing solutions of such systems with certain asymptotic properties are being worked out.

The classical cubic spline does not give appropriate solutions if the non-homogeneous differential equation involves a continuous function that is not differentiable. Since the classical cubic spline is a particular case of fractal spline, a method to solve the two-point BVPs using the cubic spline FIFs through moments is proposed.

Fractal interpolation is a modern and advance tool to analyze various scientific and natural data that are non-smooth in nature. We proposed a new family of CI-rational cubic trigonometric fractal interpolation functions (RCTFIFs) that are the generalized fractal versions of the classical rational cubic trigonometric polynomial spline to analyze different shape preserving properties of a given data.

Mathematical Modelling

Studies on the within-host modelling of COVID-19 with respect to crucial inflammatory mediators and efficacy of multiple drug interventions at specific sites of pathogenesis are in progress.

An optimal drug regimen for treating COVID-19 based on combined therapy is being proposed. Also, research is carried out on ecological models with specific applications to pest control and biological conservation. For example, additional food supplements as a tool for biological conservation of Predator-Prey Systems was studied extensively.

Domination in graphs is one of the interesting and fastest growing areas in Graph Theory in terms of both theory and applications. The current research involves a theoretical approach of finding the bounds of domination parameters and their respective separation problems with pawns on chessboard graphs.

The work was carried out on few domination parameters like perfect domination and independent domination on different shaped boards like square and hexagon. Independence separation with pawns on rectangular boards and hexagonal boards was done. The total number of solutions and fundamentals solutions for the queens' independence separation on an $m \times n$ board were found using python programming.

Artificial Intelligence (AI) and Actuarial Techniques

A framework integrating both AI and Actuarial Techniques was proposed and the fraud detection model was developed using the Gradient Boosting Method. The results obtained were quite promising with the F1-Score of 98.05% and an accuracy of 99.68%. The results were validated using extreme value theory (EVT), an actuarial technique. Initially, the model was developed for motor insurance and later the same was customized for health insurance.

Neural networks with two fully connected layers were used for analyzing and predicting the factors that were used for calculating the Key Performance Indicators (KPIs). The KPIs were obtained for the projected factors and the inference was done for five different non-life insurers in India, based on the public disclosure data available with insurance supervisors.

Machine and Deep Learning

Deep learning (DL) paradigm has become a major driving force in AI with its wings spread everywhere. However, DL models are mostly black-box models that are not interpretable or explainable. A lot of research is focused on interpretability and explainability of DL models. Focus is on capsule networks, a DL architecture that seems to have in it the capability of being interpretable, but still unexplored. First steps are taken to propose an equivariant capsule network architecture called SOVNet that preserves the compositional representation of an input under transformations.

We also work on face recognition/verification in the lensless environment. Due to the success of computational imaging along with recent advances in computer vision and machine learning, low cost and miniature size lensless cameras can be integrated into smart devices like smart glasses, IOT, drones, etc. However, the quality of images produced by such cameras are way inferior to the standard lens-based ones. We have developed a face verification algorithm that works on such low-quality images from lensless environment and attained reasonable accuracy.

Healthcare Data Analytics

A feasibility study on the Automatic conversion of EHR to SNOMED CT standards has been completed. The results demonstrate the utility of such tools. The work has led us to investigate and evaluate various Graph Frameworks for the efficient execution of Text Analytics on Healthcare Data (obtained from Sri Sathya Sai Institute of Highed Medical Sciences (SSSIHMS), Whitefield).

It has been a challenge in recent times to monitor and evaluate the performance of gigantic social security schemes that also involves crucial financial decision making at different levels. The focus is on an innovative framework that combines data mining strategies with actuarial techniques to evaluate one of the popular schemes

in India - Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) - launched by the Government in 2018 at the family level.

Small Area Imaging Gamma Camera (SAI-GC)

In collaboration with medical doctors, researchers have created a breakthrough technology to invent a portable, cost-effective and high resolution Gamma Camera system - SAI-GC - for small organ imaging including non-invasive cancer imaging.

The gamma camera is an imaging technique used to carry out functional scans of the mammary, thyroid, kidneys and bone, to identify any defects. Gamma scan is a diagnostic test in nuclear medicine, where radioisotopes are attached to drugs that travel internally to a specific organ or tissue, and the emitted gamma radiation is captured by gamma cameras to form images, a process similar to the capture of x-ray images, but with the additional advantage of providing the functional information of the organ.

This project of ₹92 lakhs, was funded by Department of Science and Technology (DST), Government of India. The prototype has passed the requirements with clinical validation on all the 32 subjects that were part of the study.

Clinical trials in thyroid scanning were conducted at Healthcare Global Enterprises (HCG) Ltd., a healthcare organization headquartered in Bangalore specializing in Cancer imaging, with positive results.

When it comes to market, this device (which offers superior imaging capabilities) will cost almost 8-10 times less than existing large field of view gamma cameras. It will help in identifying ailments related to thyroid, mammary glands, bone hotspots, sentinel lymph node abnormalities and excision for millions of people who currently cannot afford such medical care. The invention is covered by a patent.

In India alone, it is estimated that 42 million people suffer from thyroid diseases. Early diagnosis and treatment remain the cornerstone of medical management.

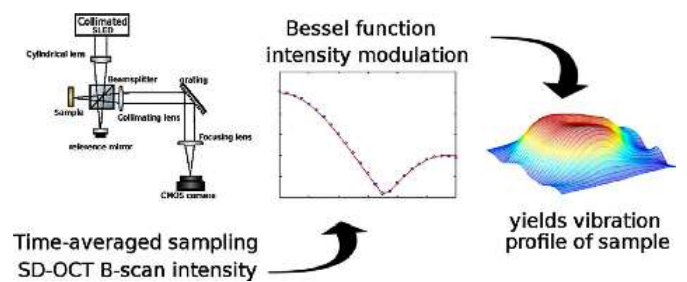
Based on the results of this successful project, an additional project of about ₹1.08 crores has been granted by the Dept. of Atomic Energy, Board of Research in Nuclear Sciences (DAE-BRNS), Govt. of India to the research group of faculty members of the Dept. of Physics, to make a fully handheld product for Sentinel

Lymph Node Navigation surgery. The Proposed instrument will aid the surgeon in the operation theatre.

Optical Coherence Tomography (OCT)

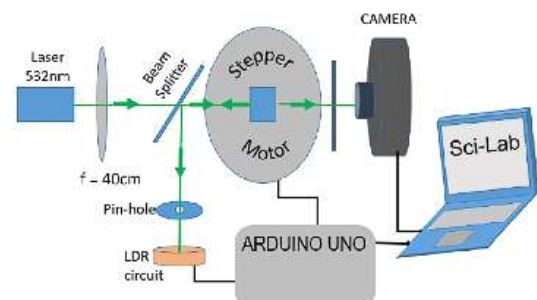
A new technique for vibrometry using Optical Coherence Tomography (OCT) was recently proposed. It demonstrated the use of low-cost cameras for sensing multiple inner layer vibrations of few-picometer amplitudes, unrestricted by the Nyquist limit. The proof of principle demo was published in Elsevier's Optics and lasers in engineering.

Until now, such sensing of inner layers required very expensive components due to the restrictions imposed by the Nyquist criterion and was limited to few kilohertz frequencies. The Photonics group is now working on applying this to low cost, non-invasive, middle ear diagnostics. A prototype OCT instrument has been built for the same, and research is underway to miniaturize it.



Photonics Research

Researchers have created a semi-automated time resolved third order nonlinear dynamics characterization set up, utilizing degenerate four wave mixing, with a 300 femtosecond Ytterbium doped fiber laser. Third order nonlinear optical properties of new organic materials require accurate refractive index measurements, and for this purpose, a fully automated refractive index (R.I) measurement device prototype was constructed, and tested as part of a postgraduate thesis. The set-up uses a GUI based SCILAB-ARDUINO interface to automatically align the optics and uses the lateral displacement of a laser beam, on a CMOS sensor, after it passes obliquely through a cuvette containing the liquid. The table top prototype achieves a third decimal accuracy in R.I. measurements. Novel chalcone derivatives were characterized using the set-up.



Non-linear optics

A novel resonant fiber optical gyroscope was recently proposed and the proof-of-principle demonstrated. The fiber optic gyroscope is already an advanced industry that caters to satellite and aircraft navigation, defence as well as other navigational systems. The proposed technique has the potential to lower the cost while maintaining performance using innovative ideas. A new beat frequency version of this gyroscope, that has potential in the tactical grade gyroscope industry, was recently proposed and published in the optical society of America's Applied Optics.

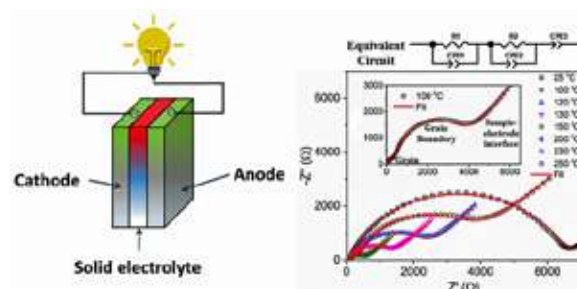
Functional Materials and Composites (for piezoelectric, magnetic, thermoelectric and sensor based applications)

Novel Piezo-resistive polymer nanocrystal composites that could be used for sensor and transducer applications with superior performance were designed and fabricated. High electrical energy storage density was achieved in materials using Ferroelectric fillers in functional polymer matrices along with low dimensional carbon nanostructures. Clay blended polymer nanocrystal composite films were fabricated and found to show enhanced Photorefractive properties. These films could be used as passive optical components utilizing their intrinsic nonlinear optical response.

Electronic structure calculations using density functional theory and the calculation of band structure dependent thermoelectric transport properties using the semiclassical Boltzmann transport theory were carried out in Full Heusler and Half Heusler alloys, Quaternary chalcogenides and Brownmillerites.

Simple ion-exchange method was used to grow metal nanocrystals in silicate and borate glass matrices. Silver (Ag), copper (Cu) and their binary, Ag-Cu nanocrystals were embedded successfully in glass matrices. The nonisothermal crystallization kinetic studies on Ag-ion exchanged silicate glasses have been carried out using differential thermal analyses (DTA). In order to understand the nuclear radiation effect on lead-free functional materials and their polymer composites, lead-free piezoelectric micro rods and their PVDF composites were prepared. Glasses, glass-nanocrystal composites and polymer composites are prepared for gas sensing applications. Highly dense (>7 g/cc) and transparent binary bismuth borate glasses were prepared and their gamma ray shielding properties were investigated. The gamma radiation shielding of transparent bismuth borate glasses was close to metallic lead and other lead-based glasses. Coffee-ring effect by different clay colloidal systems was investigated.

Tin doped nanomagnetites, $\text{Sn}_x\text{Fe}_{3-x}\text{O}_4$ were synthesized with various concentrations of Sn^{2+} by co-precipitation method. XRD, VSM, TG-DTA, SEM-EDX and UV-Vis were used to characterize the structural, magnetic, thermal, and optical properties of $\text{Sn}_x\text{Fe}_{3-x}\text{O}_4$ nanoparticles. The M-H curves exhibited changes in saturation magnetization, coercive field, remanent magnetization and susceptibility, with increasing concentration of non-magnetic Sn^{2+} ions. The optical bandgap measurement of 3.9 eV classifies these materials to be semiconductors. Being magnetic and non-toxic, these nanomaterials can be used in medical, data and energy storage, magnetic sensors and contaminant removal.

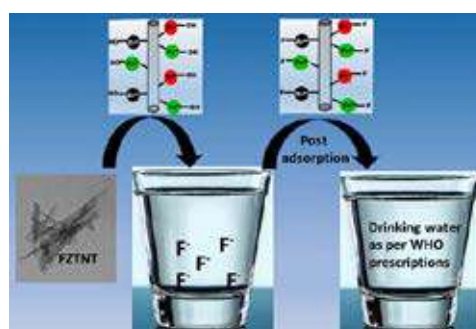


Materials for Energy Research

The vision of this group is to fabricate new materials related to energy harvesting and storage and to develop a fundamental understanding in creating a pathway for future energy technologies. With the increasing need for cost-efficient methods for energy storage and conversion, it has become essential to accelerate the rate at which energy-related materials are developed. Batteries are devices that can convert chemical energy into electric energy. At present we are focusing on the fabrication and characterization of solid-electrolytes for Li-ion batteries. It is very likely that solid lithium-ion batteries, which contain solid electrolyte that conducts lithium ions, will overcome the major safety problems (such as dendrite growth, leakage, and flammability) of the widely used lithium-ion batteries. The introduction of solid electrolytes could enhance gravimetric energy density by 40 per cent, and volumetric energy density by 70 per cent.

Nanomaterials for Environmental Remediation

Nanopowder of Fe (III) and Zr (IV) surface functionalized Titanate Nanotubes (FZTNT) is synthesized for efficient removal of hazardous contaminant, fluoride from water. FZTNT developed in our laboratory is able to remove 95% of fluoride from very high levels of fluoride containing water within a short duration of time at neutral pH. The developed material is tested with several groundwater samples collected from villages of Anantapur District of Andhra Pradesh where the University is situated. It was possible to reduce the high fluoride concentrations (of the collected ground water samples) to safe levels as prescribed by WHO (1.5 mg/L) using a as low a dose of 3g/L of FZTNT within 5 minutes of its contact with fluoride contaminated water. In addition, its reusability for three consecutive adsorption cycles without a significant drop in its fluoride removal efficiency, paves the way for scaling up the technology to develop an efficient fluoride water filter.



Point of Care Devices for Clinical Use

As a part of the ongoing projects on perinatal depression, neonatal jaundice, early detection of cardiac malfunction and dengue detection, more than 700 patients from Sri Sathya Sai General Hospital (SSSGH), Prasanthi Nilayam, Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Prasanthigram and SSSIHMS, Whitefield have been enrolled. The blood, saliva and urine samples from these patients were collected after obtaining informed consent. These samples were processed and stored appropriately. These samples were analysed using standard hospital protocol/equipment and gold standard- HPLC to know the actual value to be compared with that from our proposed devices.

Dengue and heart disease detection devices underwent testing of their alpha models. The feedback was noted and appropriate modifications have been implemented in the fabrication of the beta version. The neonatal device was deployed at SSSGH, Prasanthi Nilayam for field trials. The device for monitoring depression is under fabrication and is planned to be deployed for field trials by the end of this year. In addition, new novel materials for SPCE emission enhancements were studied and the mobile phone-SPCE platform was optimized for the detection of Tannic acid in water sources. Simple, candle soot-based fractal nano carbon islands were coated and shown to be better spacer layers than other nanomaterials that are less eco-friendly due to their synthesis protocol.

Work on novel materials, such as photonic crystals and soret nanoparticle assemblies for the detection of femtomolar aluminum ions, spermidine, iodide & glutathione and zeptomolar cortisol, is also underway.

Synthesis of Small Molecules with Potent Biological Activity

Natural products have afforded a rich source of compounds and made a huge contribution to human health.

Andrographis paniculata is an Ayurvedic herb known as Kalmegh (Nelavemu in Telugu). Andrographolide, the main constituent of Andrographis paniculata and its analogues, possess anti-cancer, anti-inflammatory, anti-bacterial, anti-diabetic, anti-HIV, FXR antagonists and hepato-protective properties. In this regard we have synthesized a number of derivatives of andrographolide and extensively studied their anti-cancer properties. Further studies are under progress, as we found that Andrographolide possesses very good anti-venom properties through PLA2 inhibition.

Spirobibenzopyrans and pyriliium salts are two classes of novel synthetic compounds explored extensively by us. A library of over sixty compounds have been synthesized and characterized for various biological properties. They were found to have potent anti-cancer, anti-inflammatory, anti-bacterial and anti-venom properties as first in class therapeutic agents.

Azole antifungals, commonly known as conazoles, have been used for the topical treatment of superficial fungal infections and oral treatment of deep mycoses. In the current work, a series of oxiconazole analogs are being synthesized with chromones as the core moiety and modified azole rings as the substituents.

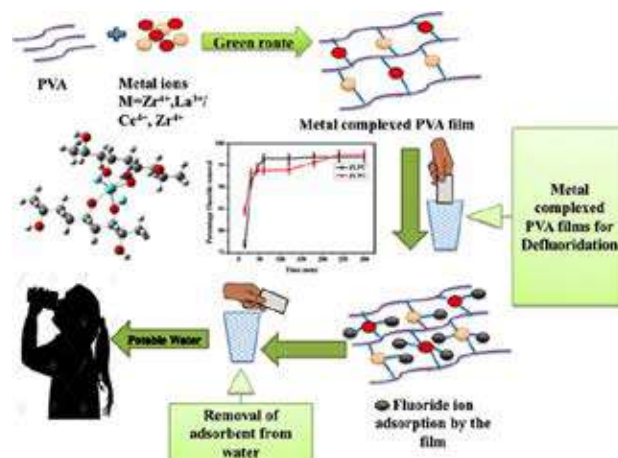
Biological activity (antifungal and antibacterial activity) of the synthesized compounds is being investigated. Molecular docking studies of the synthesized compounds against lanosterol-14-demethylase are being done to understand the mechanism of inhibition.

Chromones are well-known for their ability to scavenge hydroxyl radicals, superoxide anion radicals and lipid peroxy-radicals, which are important for prevention of diseases associated with an oxidative damage of membranes, proteins and DNA. One step synthesis of novel chromone compounds having basic flavonoid skeleton using aldol condensation was done.

Selective Fluoride Removal by Metal Ion Complexed Polymer Films

User-friendly and biodegradable, Zirconium-Lanthanum (ZLPC) and Zirconium-Cerium (ZCPC) complexed polyvinyl alcohol (PVA) films were synthesized for effective defluoridation of water. These films adsorbed 95-97% fluoride from water at pH 7, with 85% removal by ZLPC and 93% removal by ZCPC within the first 45 minutes of the adsorption process. Ab-initio calculations were performed to understand the mechanism of adsorption. The films were reusable and showed ~85% removal of fluoride even after the fifth regeneration cycle. These handy films have a scope to be developed into a prototype for defluoridation of ground water.

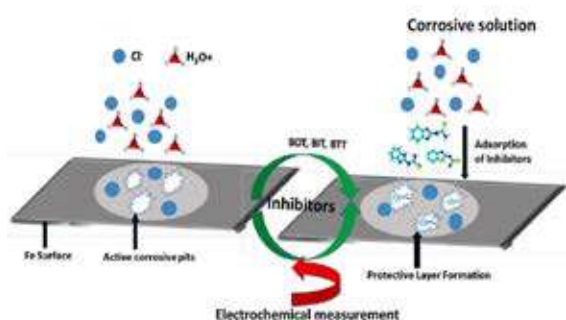
Moreover, polymer blend-metal ion cross-linked composites of polyvinyl alcohol with polyethylene glycol, polyvinyl pyrrolidone, polyethyleneimine and polyacrylic acid have also shown promising results, which could be used as a water filtration membrane due to its water permeability. The composites based on PVA-polymer blends with Zirconium ion showed maximum adsorption of 99% fluoride in the pH range of 5 to 7. The composites could be utilized to design and develop promising defluoridating device for the fluoride endemic villages of the Rayalaseema region of Andhra Pradesh, India.



Environment: Anti-Corrosion Studies

The effects of thiourea derivatives, namely 2-thiourea benzoxazole (BOT), 2-thiourea benzimidazole (BIT), 2-thiourea benzothiazole (BTT) and isoperthiocyanic acid derivatives on the corrosion behaviour of mild steel in 2.0 M solution of HCl have been investigated by electrochemical

and quantum chemical methods. Based on these findings, 2-thioureidobenzheteroazoles were found to exhibit very good corrosion inhibitory characteristics. Quantum chemical calculations revealed that sulphur and nitrogen heteroatoms serve as reactive centres for the adsorption of inhibitors.



Computational Investigation of Adsorption of Metal Ions on Biopolymers

A comparative study on the adsorption of metal ions on naturally occurring polymers, chitin, chitosan and cellulose has been done computationally. Desalination of seawater has been explored as a useful alternative to solve the problem of shortage of freshwater. 93.5% of the dissolved salts are constituted by Na, K, Mg, Ca, Br, S and Cl. Here, a theoretical investigation of biopolymers, chitosan, chitin and cellulose, as potential adsorbents of alkali and alkali earth metal ions has been carried out using Density Functional Theory (DFT) calculations.

Synthesis of Novel Chemosensors for Sensing Applications

Considerable attention has been focused on the design of chemosensors which have the ability to selectively recognize and sense analytes through the naked eye, electrochemical, and optical responses. The present research work is focused on design and synthesis of some chemosensors for sensing harmful anions such as fluoride and cyanide and some toxic metal ions in aqueous media. Water soluble curcumin glycoside was synthesized and the aluminium complex of curcumin glycoside was used for fluoride ion detection in water. The present detection concept is further explored to develop a low cost, reusable F-detection kit, which showed its ability to detect Fluoride ions in aqueous medium at a very low concentration. Several derivatives of 2-benzoxazolylimino thiazolidinone were synthesized for sensing toxic metal ions such as mercury, cadmium, lead, etc.

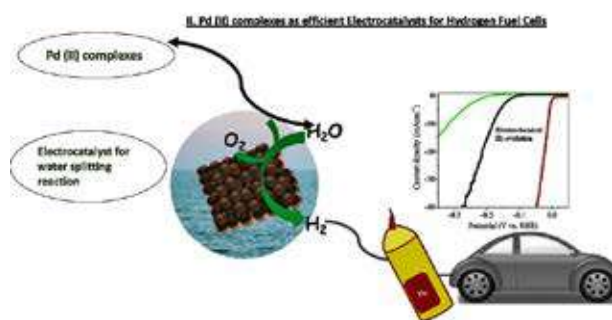
Nanomaterials for Electro Catalytic Applications

Electrocatalysis by nanomaterials and nanocomposites has generated immense research interest as they exhibit very high surface area and unique electron conducting ability. Our research work focuses on the synthesis of novel nanocomposites for application as electrochemical sensors and fuel cells. Several silver and gold based nanocomposites were synthesised and used for electrochemical detection of neurotransmitters such as dopamine and serotonin and also the interfering molecules like uric acid and ascorbic acid. Novel gold and palladium based nanocomposites

have been synthesised and used as electro catalysts that can oxidize methanol and ethanol and reduce hydrogen ions to release energy. Apart from that, we are also investigating oxygen evolution reaction and oxygen reduction reaction that would enhance the sluggish kinetics in Li-ion cells.

Metal Complexes for Hydrogen Fuel Cell Applications

Researchers have shown great deal of attention on transition metal complexes with varying ligands due to their potential uses as catalysts, biological processes and inorganic materials. In this context, hydrogen as the future energy currency is widely considered as the solution to the energy crisis. Metal ions can be framed in special position by using appropriate ligands. In the current study, the electrocatalytic behaviour of palladium (II) metal complexes of sulphur based ligands have been investigated for efficient hydrogen evolution reaction (HER).



Disease Biology

Avascular necrosis of the femur head (AVNHF) is a disease of the bone leading to collapse of femoral head necessitating total hip replacement. Our analysis has shown a clear association of homocysteine with the disease as demonstrated by its correlation with histopathology and biophysical parameters as well as IHC. AVNHF bone showed iron accumulation and iron inhibited stem cell differentiation to osteoblasts as well as mineralization (bone formation) by stem cell differentiated osteoblasts. Our work could eventually pave the way for developing homocysteine reduction therapy and localized iron chelation therapy to manage the disease. We observed similar deregulation of iron metabolism in Perthes disease, a rare condition occurring at childhood. It is essentially version of AVNHF.

Rheumatoid arthritis (RA) is a disease of the joints which leads to death of cartilage, promotes proliferation of synoviocytes and differentiation of macrophages to osteoclasts. Our experiments showed inflammation and metabolic changes in patient's cohort. High levels of ADA enzyme caused death of cartilage, proliferation of synoviocytes and differentiation of macrophages to osteoclasts (bone degrading cells) in vitro. Based on these findings we propose ADA induced joint remodeling in RA might be bringing about inflammation and metabolic remodeling.

Huntington's disease and ALS are two important neurodegenerative diseases associated with amyloidogenesis

(formation of protein aggregates). Clinical data as well as metabolomic analysis showed metabolic deregulation that could be correlated with structural changes (Atrophy) in affected regions of the brain. Metabolic addition experiments revealed that various metabolites modulate protein aggregation; and restoration of normal metabolism influences clearance of aggregates. Taken together, our results demonstrate that these metabolites could be potential modifiers of the disease; and a diet-based approach may be employed to manage the disease. We have also screened medicinal plants used in traditional Ayurveda, Tibetan and Chinese medicine for treating neurodegenerative diseases in terms of their ability to clear amyloid aggregates successfully.

Multiple sclerosis (MS) is a demyelinating neurodegenerative disease, where the myelin coating on neuronal axons is degraded. TNF α , an inflammatory cytokine is elevated in MS patients. Anti-TNF α -antibody treatment is a standard line of treatment for the disease, which incidentally is very expensive. We have shown that TNF α induced inflammation is dependent on certain receptors (P2X7, P2Y12 and P2Y6). Curprison mice model of MS treated with Clopidogrel (a widely used blood thinner) which is a P2Y12 inhibitor showed metabolic profile similar to controls and reduced demyelination. Clopidogrel could emerge as a potential therapeutic agent in MS.

Glaucoma is the second leading cause of blindness after cataract. POAG affects 70% of the glaucoma affected population. Exfoliation syndrome (XFN) is a risk factor for exfoliation glaucoma (XFG) a secondary form of glaucoma. Although 50% of XFN develops into XFG, there are no predictive biomarkers. Elevated Intra Ocular Pressure (IOP) and ATP are associated with glaucoma. Targeted metabolomic analysis showed 58 metabolites were significantly different on comparison between XFN and XFG. Some of the metabolites includes those from tryptophan-kynurenine pathway. Microglia which are immune cells of brain when treated with ATP staged an inflammatory response and expressed genes in the tryptophan-kynurenine pathway as well as in metabolic remodeling involving metabolites from the tryptophan-kynurenine pathway.

Over all, the results point in the direction of ATP mediated microglial inflammatory response and metabolic remodeling involving kynurenine pathway in the development and progression of glaucoma. These metabolites might emerge as potential biomarkers to predict disease progression as well as candidates therapeutic targeting. POAG targeted metabolomic analysis showed changes in about 25 metabolites. Dimethyl arginine (DMAG) an inhibitor of nitric oxide synthase (NOS) was found to be elevated in aqueous humor. N9 microglial cells treated with DMAG showed elevated levels of extracellular ATP, upregulating expression of many P2 receptors and expression of genes in kynurenine pathway. It appears that NOS inhibition might be critical for bringing about increased IOP, extracellular ATP, inflammation and progression of POAG. Metabolomic analysis of PACG was carried out and ELISA results showed elevated levels of TNF α , IFN γ and TGF β . The key outcome was providing plausible explanations to the role of TNF α in microglial inflammation and mechanism involved in manifestation of inflammation leading to retinal ganglion cell death.

A Prospective Multi-center Study to Develop an Antibiotic Resistance Prediction Model Supporting Empirical Antibiotic Therapy

SSSIHL has teamed up with Tech Mahindra Ltd. to develop and launch a clinically useful artificial intelligence backed antibiotic resistance prediction model for urinary tract infections (UTI). Seven major hospitals located in Andhra Pradesh, Karnataka and Tamil Nadu are supporting the project with samples and have agreed to field test the final model in real time clinical setting.

The unique feature of the model is that it does not require any additional invasive investigations and uses patient's clinical history only. The model is intended to augment empirical antibiotic prescriptions to battle the menace of antibiotic resistance.

This work is supported by Biotechnology Industry Research Assistance council (BIRAC), Govt. of India under the PACE (promoting academic research conversion to enterprise) - CRS (Contract Research scheme) format.



Agar art: 'Unity of faith' was shortlisted among the top 50 in the world for the Agar art contest 2019 conducted by the American society of microbiology (ASM). The agar plate is made of two concentric circles with different bacterial growth media and bacteria growing on them. The outer circle is MacConkey agar, which is a differential and selective media. It allows only certain bacteria to grow on it. The different religions are represented by *E. coli*. The inner circle is LB agar media, which doesn't differentiate between any bacteria growing on it and allows everyone to grow equally. *Staphylococcus aureus* is the bacteria cultured in the centre representing the stoopta.

Expression Profiling of Circulatory microRNA in a Subset of the Indian Population with Early-onset Coronary Artery Disease (CAD)

Coronary artery disease (CAD) has assumed epidemic proportions in India. Over the last two decades, its incidence has increased by four times, and fatalities due to CAD have doubled. In the last decade or so, there has been an alarming increase in the number of patients dying of heart attack even below forty years of age thereby

imposing a huge stress on healthcare infrastructure and great economic burden on the family and the society at large.

The proposed work aims to explore the utility of microRNAs as potential novel biomarkers for the prediction of early-onset Coronary Artery Disease in different subsets of the Indian population. This multi-centric study includes patients with varied demographic characteristics from diverse geographical locations. The principle objective is to develop a reliable and cost-effective diagnostic assay to ascertain the patient's risk status. The prognostic potential of these novel biomarkers would also be evaluated.

Edible or Medicinally Active Natural Products

Study on wild edible mushrooms of Andhra Pradesh for use as nutritional supplements: Two wild edible mushrooms, *Podaxis pistillaris* (L. ex Pers) Fr. and *Termitomycesheimii* Natrajan were studied for their nutritional properties, mineral element analysis and antioxidant properties. The results revealed that these wild edible mushrooms are highly nutritive and are a good source of macro (Mg, P, K, and Ca) and micro nutrient elements (Fe, Cu, Zn, Mo, Se, B and Mn). Multiple assays approach was used for evaluating the antioxidant potential. *Podaxis pistillaris* showed significant antioxidant property in terms of ferric reducing power, scavenging of radicals and chelating of ferrous-ions. These results thereof suggest that these mushrooms are good sources of naturally occurring antioxidants and have the potential to be used as dietary supplements, functional foods, and even as a nutraceuticals.

Evaluating therapeutic potential of two medicinally imp. plants:

***Adathoda vasica* Nees:** Traditional medicine is a treasure trove of pharmaceutically active molecules. The mechanism of their action and the targets they affect are not elucidated. This lack of understanding is the main reason cited by modern medicine in ignoring the traditional medicinal practices. A strategy to combine computational chemistry with biochemistry and molecular biology helps bridge this gap. In short, molecular modelling, molecular docking and molecular dynamics are employed to ascertain the nature of the active molecules of plant origin. Attempts are made to understand the nature of their interaction with the enzymes of interest. Based on the screening *in silico*, *in vitro* enzyme inhibitory studies are carried out to validate the results obtained. Using this strategy an attempt was made to understand the influence of alkaloids of *Adhatoda vasica* Nees on key enzymes of the inflammatory pathway. The results indicated that the alkaloids actively interact and inhibit the enzymes of interest. Allowing us to understand the mechanism of their action and helping us reposition these molecules as leads for future drugs.

***Tecomastans* (L.) Juss. ex Kunth:** Medicinal plants have been extensively utilized in ethnomedicine worldwide. In recent years, there has been growing interest in alternative therapies and natural products derived from plants that possess therapeutic properties since they are safer and more effective over synthetic drugs. *Tecomastans* (L.) Juss. ex Kunth is indigenously used to treat several health ailments. However, the plant has remained unmapped for its chemical profiling and therapeutic benefits. Nutritional profiling of the plant parts was studied and found

to be rich in essential amino acids, minerals, fatty acids, and components of volatile oils. Various bioactive components were screened, quantified, and characterized from the plant parts and were assessed for their therapeutic potential using *in vitro* models. The results obtained showed significant anticancer, antioxidant, and antimicrobial potential. To further augment the bioactivity of the plant extracts, nanoparticle synthesis was undertaken, which exhibited enhanced antioxidant and antimicrobial action of the fractions and isolated compounds.

Bioactive principles and medicinal properties of

***Trachyspermum ammi* (Ajwain):** Extracts of aerial parts of *Trachyspermum ammi* were prepared with solvents of increasing order of polarity. The study revealed that the aerial parts of *T. ammi* contained carbohydrate derivatives, amino acid derivatives, flavonoids, phenols, steroids, triterpenoids and saponins. Amongst all the fractions, ethyl acetate fraction exhibited highest quantities of phenolics, flavonoids and flavanols. This fraction also exhibited significantly high antioxidant and antidiabetic activities in *in vitro* model systems. Hence, ethyl acetate fraction was subjected to chromatographic techniques, to identify its active compounds. The hexane fraction from the methanolic extract showed maximum anti-carcinogenic activity on osteosarcoma cell lines. This work demonstrates that *T. ammi* is a rich source of medicinally active compounds with potentially several pharmacological benefits.

A Study of Antioxidant, Anti-Inflammatory, Anti-Cancer and Antibacterial Potential of Endophytic Fungi isolated from two Medicinally Important Plants

***Bauhinia purpurea*:** The target of the study is to evaluate the bioactive potential of various molecules produced by the endophytic fungi inhabiting *Bauhinia purpurea*. Sixteen endophytic fungal strains were isolated from the leaves of *Bauhinia purpurea*. Four isolates showed reasonable anti-oxidant activity. They were identified as *Diaporthe phaseolorum*, *Diaporthe foeniculina*, *Alternaria citri* and *Fusarium graminearum*, based on 18S rDNA sequencing.

Crude extracts of these four endophytic fungi were evaluated for their antibacterial and synergistic activities using resistant strains of *Escherichia coli* and *Pseudomonas aeruginosa*. The *Diaporthe* sp. extracts when used in conjunction with tetracycline showed promising synergistic activity. 45 selected metabolites of *Diaporthe* species are being evaluated for their potential use as RND efflux pump inhibitors employing Molecular docking studies.

Anti-cancer activity of crude extracts of six endophytic fungi was tested on glioblastoma cell lines using MTT assay. While extracts of *Fusarium* sp. showed significant potential in inhibiting glioblastoma cell lines, those from *Diaporthe* sp. and *Alternaria* sp. extracts showed moderate inhibitory activity.

***Sweetenia mahagony*:** Eight endophytic fungi were isolated from the leaves of *Sweetenia mahagony*. Crude extracts of these fungi were prepared using different organic solvents to screen for their potential bioactivities. Currently, antibacterial and anti-cancer activities are being evaluated.

Exploring the Potential of Fungi from the Environs of Puttaparthi as Sources of Medicinally Active Natural Products

Fungi were isolated from known medicinal plants (*Ficus religiosa* & *Emblica officinalis*), soil and waste water. They were identified, pure cultures prepared, maintained and their extracts obtained. The extracts were tested for various biological activities: anti-oxidant, anti-diabetic, anti-inflammatory, anti-bacterial, anti-candidial and larvicidal at varied concentrations. The activity of the extracts was compared against that of standard drugs/known compounds. Several extracts showed considerable activity when compared with that of the standards. The compounds from extracts showing promising activity were analyzed for their chemical structures by employing spectrometric techniques such as UV, FTIR and Mass spectrometry.

Fungal compounds were evaluated for their suitability as agents of decolourisation and detoxification of dyes such as Congo red and reactive black-5. Optimisation of various parameters such as temperature, concentration, Biomass dosage for decolourisation of the dyes was completed using *Aspergillus arcovordensis*. Regenerative ability assay was carried out to understand the toxicity of the dyes on the live fungal isolates. Effects of live and dead biomass on the decolourisation of the dyes simulated in artificial waste water were studied. The fungal compounds from these extracts produced significant decolourisation of waste water.

Gluten Free Multigrain Nutria-Dense Bars

The nutri bars are one of the popular convenient snack foods, nutritionally balanced, and versatile products made up of whole cereals, millets, fruits, nuts, and sweeteners and used as ideal meal replacers to prevent nutrition related disorders. Nutritionally balanced bars using locally available ingredients were developed and evaluated for their nutritional quality and shelf stability. The developed bars were found to be rich in energy, carbohydrates, protein, fat, minerals, polyphenols, and flavonoids. Sorghum, millet-nut bars were found more acceptable and nutritionally dense compared to multigrain-nut bars. The developed products were found acceptable and shelf stable for four months.

Plant-based Substitutes and Protein Isolates as Dairy Alternatives

The FMCG industry has come up with several milk alternatives due to the rapid interest of health-centric consumers towards plant-based substitutes. As a result of these trends, plant-based substitutes were used to formulate ice cream along with herbal extracts to enhance the flavour of the product. The developed product was supported with an analysis of quality characteristics and shelf life studies and got a beneficial outcome in terms of all attributes.

With the increasing popularity of vegan diets, plant-based protein isolates have been good alternatives over dairy protein isolates due to their comparable amino acid composition, high digestibility factor, and biological value. Considering the raised ergogenic and nutrient requirements of young women athletes, convenient and instant products were formulated utilizing plant-based protein isolates. Nutritional profiling of the developed products was carried out and were found rich in energy, protein, BCAAs,

carbohydrates, calcium, and polyphenols when compared to the commercial products. An attempt was made to enhance the products by the addition of specific immune enhancing and healing herbs and flowers. Both products exhibited significant anti-inflammatory properties using in vitro methods.

Food Processing Waste Utilization for Value Addition

Wastes from the fruit and vegetable processing market contain potential byproducts and bioactive components that can be utilized and converted into value added products. An attempt was made to utilize vegetable waste from potato peel, carrot peel, and carrot leaves. Dietary fiber and antioxidants were characterized from the waste and studied for their chemical composition and in vitro biological activities. Crackers and soup mixes were developed utilizing extracted fiber from the vegetable peel and leaf, which were found acceptable and shelf stable for four months.

Potential Role of Macular Carotenoids in Promoting Eye Health

Age Related Macular Degeneration (AMD) is the foremost reason for impaired vision in the people aged above 60 years, resulting in the decrement of life quality. Oxidants, including free radicals, are partly responsible for the aging process. Adherence to a diet rich in antioxidants like vitamins A, C, E, and macular carotenoids such as lutein and zeaxanthin decrease the risk of AMD progression. The present study witnessed the formulation and evaluation of foods, incorporating pocket friendly locally available green leafy vegetables rich in lutein and zeaxanthin. Collaboration was done with the Dept. of Ophthalmology at Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Prasanthigram, to identify subjects and impart awareness regarding AMD and the role of xanthophyll rich foods in its management.

Nutritional Biology and Metabolomics Studies for Mitigating Life-Style Disorders

As part of the ongoing doctoral research programme, nutritional biology and metabolomic studies are being carried out on indigenous pigmented rice varieties related to diabetes. Several rice varieties were found to exhibit good inhibitory activity against carbohydrate digesting enzymes, and incretin hormone degrading enzymes, implicated in diabetes. They also inhibited formation of advanced glycated end products, implicated in the aetiology of diabetes. In vivo glycaemic response studies in human volunteers revealed Kattuyanam and Karunkuruvai, two Indian red rice varieties, to exhibit low glycaemic index (GI) compared to the high GI white rice. An untargeted Q-TOF LC-MS analysis identified over hundred phenolic metabolites across ten pigmented rice varieties. Confirmation of antidiabetic activity of the abundant phenolics is being investigated using in silico techniques.

Development of Microgreens-based Health-Functional Culinary Formulations

As part of another ongoing doctoral research programme, metabolomic analysis of a genre of novel food crop, microgreens, revealed a unique phenolic metabolite fingerprint for each of the microgreens with the flavonol class being the most abundant compound. Novel shelf-stable functional culinary products

were formulated using these phytochemical rich microgreens. The developed products exhibited good functional and sensory quality with a high score for marketability and good shelf life. This study thus, contributed to expanding the utilization of these tiny short-lived microgreens from the conventional usage as salad greens and garnishes, to their application as interesting culinary ingredients.

Social Sciences

Empirical Study on Organisational Learning and Green Supply Chain Practices

In organisations, effective functioning of green supply chain practices is a challenging form of cooperation between different knowledge producers and ubiquitous types of experts. Organisational learning to support green supply chain management practices is a continuous learning process that is expected to develop an informed and involved organisational citizenry with creative problem-solving skills, scientific and social literacy, and commitment to engage in responsible individual and co-operative actions. The aim of the study is to understand how organisational learning impact and enhance green supply chain practices in the organisations. The study is primarily descriptive and exploratory in nature. For the study, twelve select companies from the manufacturing industry were identified using purposive sampling, based on the Pollution Index Score. Mixed method approach is used to confirm, cross-validate and corroborate findings. The results of the study draws a contextual relationship between organisational learning and green supply chain practices, and this relationship ascertains that in organisations, if green practices are accentuated through learning, any business can simplify, synergise, strategize and scale up the green supply chain practices for the benefit of both the organisation and the environment.

Environment responsibility as part of CSR: Development of Fuzzy Based Model to Assess Sustainability

Climate change and global warming have hit the boardrooms of corporations more than ever before. Sustainability indices have become important criteria in today's parlance to assess the risk of investing or collaborating with any company as part of their supply chain strategy. Many international firms provide these indices used by corporations to assess sustainability and collaborate. In a competing scenario, there is a need for companies in developing economies like India to be on par with their counterparts across the world by obtaining good sustainability scores.

Towards this end, one of the measures the Government of India has taken is mandating transparency in Corporate Social Responsibility (CSR) reporting through The Companies Act 2013. Since then, large amounts of money that have been spent in specific areas have been reported towards achieving societal needs, and part of it towards greening the supply chain. Using data obtained from the annual reports of NIFTY indexed companies, a published research paper developed a fuzzy-logic-based model to obtain a sustainability score for companies. The inputs used in

the model deal with the triple bottom line criteria—Profit, People and Planet (PPP). Using fuzzy logic, rules that define sustainability have been created. The work discusses the patterns in the sustainability scores obtained with respect to the NIFTY indexed companies.

Credit Risk Management of Microfinance Institutions in India

With the rise in per capita incomes, 'high consumption' lifestyles are posing a threat to the sustenance of the planet. This over-consumption of resources needs an urgent check in order to lower the environmental impact of these unsustainable lifestyles. Hence, it is important to bring about a shift in the consumption practices to a new paradigm. This research is an attempt to understand the pro-environmental behaviours and its drivers, in an Indian context, given the relevance of sustainability to businesses, governments and society at large.

Sustainable Consumption Patterns of Indians

A scoping review of the field of behavioural economics that focused on health insurance was carried out using the five-stage framework provided by Arksey and O'Malley. A total of 120 studies were identified that met the eligibility criteria. From these studies, information pertaining to consumer behaviour in the health insurance market and means to channel consumer behaviour were extracted.

The state of research of the field found that 93% of the studies are based on samples drawn from western countries, 5% of the studies have used field experiments, 97% of the studies have used a positivist research paradigm, and more than half the studies have focused on just five behavioural factors. Building on these observations, the study provided directions for future research.

Assessment of Entrepreneurship Development Programmes with Respect to Rural Entrepreneurship

Rural Entrepreneurship is increasingly considered as the solution for several rural development related problems. Central and state governments are investing heavily on Entrepreneurship Development Programmes (EDPs) to aspire youth to take up the entrepreneurial journey. Many of these EDPs function with a motive to promote rural entrepreneurship, with an underlying assumption that these local ventures will create alternative employment in the rural areas and take off the burden from agriculture. The performance measurement of these interventions in the rural regions can pave way for more effectiveness and thereby increase the potential of rural entrepreneurship. This work studies how the objectives of these EDPs' get translated into actionable items and what kind of Socio-economic impact is created as an output of this training. The study is expected to suggest a model EDP suitable for rural entrepreneurship considering the performance and impact generated by legacy programmes.

A Study to Assess Social Impact of Social Enterprises that Address Disability Issues

Among the Sustainable Development Goals (SDG), SDG 10.2. (2015) aims to 'empower and promote the social, economic, and

political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status'. For most of the groups marginalised in the categories mentioned in this SDG, the barrier is mostly attitudinal. But the disabled demography also faces physical barriers along with the attitudinal ones. They have barriers in areas ranging from mobility and accessibility to performing basic everyday tasks like using a restroom; engaging in sports; or even eating food. Certain products and services can help them cross these barriers. But it may be unreal to expect the Government and NGOs to provide these products and services in a sustainable manner.

Social enterprises play a significant role in filling this gap. Social enterprises are considered to be enterprises that are 'social mission driven' and are also 'for profit' (at least for the purpose of this study). This duality in social enterprises leads to a kind of trade-off between purpose and profit orientations in terms of priority. If the social entrepreneurs are able to tangibly evidence the social impact they are making towards their purpose, it could be a motivation to give a tad more emphasis to their social mission. This study is meant to be an intervention in this regard. It aims to measure the social impact of social enterprises serving persons with disabilities.

The objective is to measure the social impact of selected social enterprises using the Social Return on Investment (SROI) tool and to conduct a secondary, qualitative evaluation of the same set of social enterprises and then compare the results arrived at by using the SROI model with that of the qualitative study.

Assessing the Impact of Financial Inclusion on Agrarian Incomes and Well-being

Agrarian Incomes are dependent on several variables like monsoons, irrigation facilities, government support, support from financial institutions, etc. The agrarian household is the most vulnerable in case of negative fluctuations in these variables. This research seeks to understand the concept of 'Financial well-being' of agrarian households, through the lens of Financial Inclusion. Agricultural activities extend to different dimensions and are impacted diversely. Can access to formal financial services strengthen the abilities of agriculturists in terms of income generation, and can it augment their efforts towards stable and sustainable incomes?

Relationship between Financial Development and Economic Growth: An Empirical Evidence from BRICS Economies

This study explores the causal relationship between financial development and economic growth of BRICS economies by taking the annual data from 1996 to 2016. Many of the existing studies considered only the depth factor for measuring financial development. In addition to depth this study considers efficiency and stability factors for measuring financial development. Also, most of the studies used either financial institution or financial market as a proxy for financial development which may not fully reflect the financial development. Hence, to measure the financial system development, the study constructs three broad-based indices—the financial institution development index, financial market development index, and financial system development

index (which combines intuitions and markets) by using the principal component analysis (PCA). It starts with empirical testing of the stylized features such as efficiency, volatility, mean reversion and Value at Risk of these five stock markets. We have taken daily data from 27 September 1997 to 31 March 2018.

Pedagogical Approaches to Peace Education

Students absorb the spirit of violence from their atmosphere and become the next generation of perpetrators of violence. Therefore, the need to nurture peace in the hearts of children has arisen as an urgent issue to be addressed by all educational institutions, especially the schools. Peace Education is the process of acquiring the values, knowledge and developing positive attitudes, skills, and behaviours to live in harmony with oneself, with others, and with the natural environment. The basic concept of Peace Education is to provide measures to protect the children from falling into the ways of violent society. It attempts to consciously integrate values in all the subjects taught and the entire curriculum through different pedagogical approaches (such as dialogue, silent-sitting/meditation, artistic and literary endeavours, and co-curricular activities) necessary for peaceful living and peace-building from which the whole of humanity will benefit.

The present exploratory multiple case study was done on students of class IX and X, teachers, parents and alumni from the schools of four philanthropic organisations in South India. A mixed approach adopting both qualitative and quantitative methods involving observation, focussed group discussions, questionnaires, documentary analysis, etc. is used in the study.

The main objective is to find the different peace components in the curriculum and the methodology by which it is inculcated in the students. Students' attitude towards peace and the perception of stakeholders on the various methods used to teach peace is also assessed with the help of three questionnaires standardised by the researcher. The data collected is being analysed both qualitatively and quantitatively.

Humanities

Colonial Studies

Research in colonial studies has traditionally revolved around the historical, political and economic aspects of the colonial regime. By 'Orientalising the Orient', the coloniser ensured that his subjects would aspire to grow to become like him. The British Empire was, however, built less by military force and more through cultural reinforcement. To this end, the British engaged many tools: religion, language and sport.

Sport is a universal element in all cultures, which has immense ramifications in a civil society. In fact, with the coming of age of Popular Culture studies by academia, sport is being studied exclusively from historical, political and economic perspectives.

The study made the case for an unremitting academic focus on sport, from a colonial and post-colonial perspective. The uniqueness and the interdisciplinary nature of this study was in its

bringing together popular culture and literary theories to establish its hypothesis. The study traced the colonial path to the growth of the game in the colony through the colonial postulates of Edward Said and Homi K Bhabha.

It discussed the move from the 'exclusivity' of the English to the 'mimicry' of the natives as a part of the informal modes of rule employed in a colonial framework. Once formal modes of rule were employed in the Empire, phases of 'cultural reinforcement' by the colonists followed by 'patronage' by the natives were delineated. At every phase, the research is systematically classified and evidenced with examples from seminal historical narratives in the sport.

The second part of this study expounded how the very same tool that was used to establish the native's 'effeminacy' was used to invert the hegemony. The study argued how decolonisation in this case did not occur through 'rejection' of the colonial culture, but paradoxically, through 'adaptation' and 'assimilation' in clear colonial terms.

The concluding section of the study ensured recency and relevance by discussing the extension of the decolonising moves in recent times, in the game of cricket, to 'subvert authority'. A parallel was drawn of this stage with the carnival of the medieval times, studied through the framework of Mikhail Bakhtin's theory of carnival.

The Quest for One's Self in the Perilous Realm: A Study of Select Fantasy Texts of J R R Tolkien and J K Rowling

Fantasy is as old as storytelling and therefore acquires an air of mystery and intrigue. Fantasy literature, in its varied forms, can be studied as Children's Literature, Gothic Literature, Popular Culture/Literature or Crossover Fiction. Many popular works of fantasy are adapted into film, TV series, dramas, video games, etc. Though Fantasy is not a new addition to the literary scene in England, it achieved immense validity and support after Tolkien established its status with his oeuvre and critical commentary. Rowling, following his footsteps, awakens a love for reading in an entire generation through her artful rendition of Fantasy.

The study focuses on specific Fantasy texts by J R R Tolkien and J K Rowling, and endeavours to map out 'Individuation' - Integrating the parts of the self into one - by looking at man's journey within. The study utilises the Archetypal criticism of Carl Gustav Jung along with Joseph Campbell's Monomyth or the Hero's Journey to study individuation in the protagonists. This particular work premises that Fantasy literature is a reflection of and commentary on life (popular fiction mirroring reality). The study aims to track internal transformation: inner conflicts are represented using symbols in Fantasy - for instance, a dragon embodies avarice within the fantastic portal or universe.

This work highlights the workings of heroes and their evolution from inaction to maturity and sacrifice - showcasing the nobility they attain on their journey toward selfhood. The Wise guide, Shadow and Trickster figures are given special emphasis as they facilitate or impede the heroes' progress; but are essential

for the quest. Descriptions, exchanges or excerpts from the texts are quoted and analysed to authenticate the researcher's interpretations. The philosophical questions about life, death, immortality, joy, grief and other binaries are grappled with. The insistence on empathy, love, sacrifice, and collective effort (by the protagonists) in the books is premeditated to arrive at the balanced truth of life and reach synchrony in the self and thereby, the society. In short, the study evaluates life in the (Fantastic) Secondary world to understand real life in the actual world.

Text and Subtext: A Study of Select Plays of Ivan Turgenev and Anton Chekhov

From times immemorial, much has been said and written on all that was written by the writers of many great works of art. Perhaps, this process (writing on what was written) could be one of the reasons why writers and their works of art stand immortalised even today. Apart from such writers, there are also a few writers in the field of English literature, especially within the domain of European Drama, who are famous for all that they have not written. These dramatists brilliantly portrayed the inexpressible in their works through their efficient usage of the technique called subtext. The plays of Ivan Turgenev and Anton Chekhov stand as testimony to this extraordinary talent.

The study intends to give a comprehensive view of subtext latent in the plays of the two playwrights, Ivan Turgenev and Anton Chekhov, a pioneer and a master of subtext respectively. Subtext is used as a magnifying lens which broadens and gives a wholesomeness to the reader's perspective, as it throws light on the layered texture and the deep-rooted structure of their plays. Much thought needs to be given to understand the abstract ideas or concepts latent in great works of literature, besides the easily comprehensible concrete concepts in them.

One has to remember that the former plays no less a role than the latter, in attributing greatness to a literary work. Writers like Ivan Turgenev and Anton Chekhov achieved a fine balance between the text and subtext in their plays, by juxtaposing the said with the unsaid; action with inaction; the physical with the mental realm; emotions with their expressions; the inanimate with the animate; the reflection of the inner world with the outer world, etc. In order to achieve a comprehensive outlook of a great work of art, or life in general, it is essential to understand and appreciate both the implicit and explicit aspects.

Subsequently, the study also reveals the areas where Turgenev and Chekhov balance, differ, and supersede each other, in their use of subtext in the plays. Since subtext arises when there exists a strong disparity among one's thoughts, words, and deeds, usage of this technique helps a person to sift the pretentious self from the real self, the unsaid from the said, and the implicit feelings from explicit gestures. In the process, subtext also provides an insight into the real inner selves of fellow human beings and, in the process, throws light on many new insights about one's own self.

Funded Research Projects

SSSIHL continues to pursue needs-based research that will help alleviate problems affecting the poorer sections of society.

During the academic year 2019/20, the total value of ongoing projects at the University was ₹11.1 Crores.

Mathematics and Computer Science

Big Data Analytics and High Performance Computing

Maestro Technology, USA

₹90 Lakhs

AI in Sports

Grey Scientific Lab

₹5 Lakhs

Whole Slide Imaging (WHI)

Grey Scientific Lab

₹5 Lakhs

Physics

Fabrication of glass- ceramics comprising of semi conducting metal oxide crystallites at different length scales and study their gas sensing characteristics

UGC-BSR Startup

₹10 Lakhs

Gamma-Ray and Ion Beam Irradiation Studies on Lead-Free Piezoelectric Ceramics and their Polymer Composites

UGC-DAE-CSR Kolkata

₹45,000

Design and Development of nanomaterial based dip sticks and tea bags for instant removal of fluoride from water

Kurita Water and Environment Foundation (KWEF), Japan

₹2.8 Lakhs

Experimental Investigations on the level structures of doubly odd Ta isotopes

UGC-DAE CSR Kolkata

₹6.8 Lakhs

Design and Development of Gamma-Florescence Dual Imaging Sentinel Lymph Node Navigation Surgery Intraoperative Probe

DAE-BRNS

₹94 Lakhs

Femtosecond laser Enabled Micro-fabrication of Micro-Total-analysis Optofluidic Systems (FEMTOS)

DST

₹24 Lakhs

FLAP-MED: Femtosecond laser Assisted Prototyping Micro Electro-Optofluidic Devices

DST

₹48 Lakhs

Design and development of Glass based optofluidic platform by Femtosecond Laser Micromachining

DST

₹46 Lakhs

Chemistry

REsCUE Device: Rapid Estimation of COVID-19 based on Ultrasensitive Emission Detection

SSSIHL-CSR

₹120 Lakhs

Synthesis Water Treatment of Identified Physico-chemical parameters in the three mandals of Ananthpur district of Andhra Pradesh

4S Foundation

₹5.03 Lakhs

Synthesis of Novel Andrographolide derivatives as potential anticancer and antibacterial agents

CSIR

₹24 Lakhs

Surface Plasmon-Coupled Emission based Benchtop Device for Cardiac Troponin T Quantification

DST - Instrumentation Development Programme (IDP)

Technology Development Programmes (TDP)

₹45.68 Lakhs

ANIRVID: A Cellphone based Point-of-Care Diagnostic Device to Evaluate the Effect of Alternative Therapeutic Interventions on Depression and Heart Ailments

Tata Education and Development Trust

₹97 Lakhs

Hand-held mobile for non-invasive monitoring of Bilirubin in neonates

Indian Council of Medical Research (ICMR)

₹64.45 Lakhs

Mobile Dengue Diagnostic Technology (m-DDT): A Smartphone-based Point-of-care Diagnostic Device

Defense Research and Development Organisation (DRDO)

₹40.67 Lakhs

SONEERA: Surface-water quality observation 'N' elimination of effluents using radio-frequency transmitter technology

Prasanthi Trust, USA

₹31.34 Lakhs

Biosciences

Grant for Infrastructural Support to the Department of Biosciences

UGC SAP DRS III

₹111 Lakhs

Augmenting Postgraduate Teaching & Research Facilities in Dept. of Biosciences

DST FIST

₹88 Lakhs

Perturbation in Metabolic pathways might drive Avascular Necrosis of Femoral Head by modulating bone biology: Mechanisms, Potential biomarkers and therapeutic targets

DST

₹60.8 Lakhs

Mechanism of resistance involved in the emergence of nitrofurantoin resistance among uropathogenic enterobacteriaceae

Indian Council of Medical Research (ICMR)

₹60 Lakhs

Food & Nutritional Sciences

Antidiabetic evaluation of Indian pigmented rice varieties: A mechanistic metabolomic based approach

Indian Council of Medical Research (ICMR)

₹24 Lakhs

XRF based profiling of essential minerals in native and bio-processed pigmented rice varieties

UGC-DAE-Consortium

₹45,000

Economics

A Structural Model of the Current Account of India's Balance of Payment Under the New Economic Policy Regime

Indian Council of Social Science Research (ICSSR)

₹3 Lakhs



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Special Annual Events

There are four special annual events that relate to the devotional, cultural, physical and service dimensions of the model of Sri Sathya Sai Values-based Integral education. These marquee events are orchestrated to bring out the latent values and good qualities in students and teachers. A lot of planning and effort goes into each of these events. Students participate in these events in accordance with their individual skills and talents.

Summer Course in Indian Culture & Spirituality

13-15 June 2019

Man can make genuine progress only when the idea that education is for earning a living is given up. Only one who realises this truth is a truly educated person. Knowledge does not mean mere booklore. It is not the transference of the contents of books to the brain.

Education is intended for the transformation of the heart. Man today is proud about the little knowledge he has acquired about the physical world and boasts that he knows all about the universe. True knowledge is that which establishes harmony and synthesis between science on the one hand and spirituality and ethics on the other. Man, therefore, should at the outset determine the true value of education.

Sri Sathya Sai Baba

Revered Founder Chancellor, SSSIHL

Benedictory Address, SSSIHL Annual Convocation, 22 Nov 1985

The Summer Course in Indian Culture & Spirituality serves as an induction programme to all students and teachers of Sri Sathya Sai Institute of Higher Learning with an objective to expose students of the University to the rich cultural and spiritual heritage of Bharat. It orients students into Bhagawan Baba's educational philosophy and gives them deep, first hand insights into how they can directly benefit from this unique institution.

During the academic year 2019/20, the event was held at each of the four campuses of SSSIHL - Prasanthi Nilayam, Anantapur, Brindavan and Muddenahalli - from 13 to 15 June 2019.

All students and teachers of the University participated, along with several invited guest speakers. On display was a smorgasbord of creative and engaging topics, discussions, talks, singing, chanting and quizzes - each purposefully curated

to imbibe in students the key teachings on Indian culture and spirituality from the ancient scriptures and Sai literature.

Some of these included:

Quiz on Great Epics of Indian Culture, Swami's Guidelines for good living, Bhagawan on the significance of the Summer Course, Divine Directions and their practical implementation in our daily life, Lessons from the Bhagavatam, Panel Discussion on Indian Culture and Spirituality, Sri Rama and Sai Rama, Importance of Vedic Literature in Indian culture, Impact of Bhagawan and the Sri Sathya Sai System of Education, Spirituality in Daily Life, Sarva Karma Bhagavath Prityartham - Lessons from our scriptures, Self-Image and Positive Psychology, Head in the forest, hands in the society - Lessons from the Bhagavad Gita, Help Ever Hurt Never; Role of Discipline, Duty & Devotion in the development of Personality of a student, Workshop on devotional singing, Sadhana and Seva, Food Habits and Health, The profound Truths in Hindu Mythology, The science behind ancient Bharatiya traditions and practices, The inner connect with Bhagawan

Prasanthi Vidwan Mahasabha

2-8 October 2019

Dasara or Navaratri is a ten-day festival, usually falling in the month of October, and is celebrated all over India in the worship of the Divine as the Mother principle. Since the early sixties, the festival of Dasara in Prasanthi Nilayam has been closely associated with the Veda Purusha Saptaha Jnana Yagna. This yagnam is a week-long worship conducted in the Divine Presence in the Poornachandra Auditorium in Prasanthi Nilayam each year for the welfare of the whole world. The yagnam commences on the fourth day of Dasara and concludes with the Poornahuti - the final oblation that is offered on Vijayadasami, the tenth day.

In addition to other rituals, the most important component of the yagnam is the Rudra yagam where the oblations are made in the Yagna Kunda to Lord Shiva while chanting hymns from the Sri Rudram. The students of Sri Sathya Sai Institute of Higher Learning take active part by chanting the vedas, reading the scriptures and performing other parts of the worship along with the learned pundits.

The evening programmes during the seven days of the yagnam are held in Sai Kulwant Hall, under the auspices of the 'Prasanthi Vidwan Mahasabha', where many speakers—primarily students and functionaries of Bhagawan's educational institutions—address the gathering on topics concerning spirituality and philosophy, Bhagawan's teachings and experiences of devotees.

Annual Convocation

22 November 2019

Sri Sathya Sai Institute of Higher Learning (SSSIHL) (Deemed to be University) held its 38th Annual Convocation at Sai Kulwant Hall, Prasanthi Nilayam, Andhra Pradesh in the Divine Presence on 22 November 2019 at 3:20 p.m.

The grand ceremony saw the Honourable Chancellor, Sri K Chakravarthi, IAS (Retd.), admit 470 candidates to their degrees. This included 277 undergraduate, 97 postgraduate, 86 professional and 10 Ph.D. awardees.

SSSIHL was honoured to have Dr. G Satheesh Reddy, Secretary, Department of Defence R&D, Government of India, Chairman, Defence Research and Development Organisation (DRDO) and Director General, Aeronautical Development Agency (ADA), as the chief guest for the event.

The format, planning and execution of the SSSIHL convocation ceremony is second to none. The ceremonial procession was led by the University brass band, two students carrying the University Standards on either side of the Registrar (who carried the Ceremonial Mace). Other members of the procession included the Chancellor, Vice-Chancellor, Deans and the Heads of Departments along with the Chief Guest, members of the Sri Sathya Sai Central Trust and the Board of Management.

Following the invocatory veda chanting, the Vice-Chancellor, Prof. K B R Varma prayed to the Revered Founder Chancellor to declare the convocation open. The Convocation was then declared open in the Divine voice of Bhagawan Baba.

The programme included speeches by the Vice-Chancellor, the Chief Guest and the Revered Founder Chancellor (video broadcast of a previous Convocation Address).

Annual Convocation Drama

Each year on the day of the Annual convocation, students of Sri Sathya Sai Institute of Higher Learning put together a drama presentation in the Divine Presence. This year, the drama, titled Hum Chalein teri Roshani se, explored the grey areas of major decision points all of us face in life. The ones that ask us to choose between what is right and what is wrong.

The drama explored this juxtaposition perfectly through the context of a consulting firm where one person's principles helped pave the way for right choices of many a fellow journeyman. This person, Roshan Damodar Salve, an investment banker at FinVest Ltd., time and again chose gratitude over gratification by refusing to give in to the expectations of the crowd and pave his own reality, vested in his inner truth.

It highlighted the fact that If our heart knows how to act in a situation and we must choose the right path, we will garner the courage, the right mindset and channelize the inner wisdom that will lead us on the path of dharma or right action.

Perhaps it's time we truly honour the age-old adage: the only way to lead is by example. If we do that, we never know what pertinent message Roshan's life might hold for us!





The full list of medallists for the academic year 2019/20, honoured during the Annual Convocation 2019 is given below.

All-Round Gold Medallists

Maddireddy Meghana

Anantapur Campus - Master of Business Administration

R Sai Naveen

Prasanthi Nilayam Campus - Master of Business Administration

Ramavarapu Sathya Sai Aditya

Brindavan Campus - Bachelor of Commerce (Honours)

Chikkam Sai Phani Kumar

Muddenahalli Campus - Bachelor of Business Administration

Gold Medallists

Manasali Sai Kumar

Master of Business Administration

Varshaneya V

Master of Technology in Computer Science

Shyam Sundar B

Master of Technology in Optoelectronics and Communications

Pradyumna M

Master of Science in Mathematics

K Karthik Subramaniam

Master of Science in Biosciences

Hariharan M

Master of Science in Chemistry

J Kaushik

Master of Science in Physics

Sai Shravan N

Master of Arts in Economics

T R Sai Natarajan

Integrated Master of Computer Applications

Sasanpuri Maniram Santosh

Bachelor of Business Administration

Boddu Raghu Veera Saikumar

Bachelor of Commerce (Honours)

Majeti VSSS Durgesh

Bachelor of Computer Applications

Debashis Parida

Bachelor of Science (Honours) in Physics

Jashobanta Behera

Bachelor of Science (Honours) in Biosciences

Palla Juneswari

Bachelor of Education

Kavugoli Shraddha Mohan

Master of Science in Food and Nutritional Sciences

Gayathri V R

Bachelor of Science in Food and Nutritional Sciences

Soumya Yellai

Bachelor of Science (Honours) in Mathematics

Haritha Ramann

Bachelor of Science (Honours) in Chemistry

Mathumitha R

Bachelor of Arts

Ph.D. Awardees

Sri Hari N - Physics

Design and fabrication of low-cost Optical Coherence Tomography instruments with novel features towards aiding in medical diagnostics

Sri Sadhu Sai Pavan Prashanth - Physics

Investigations into the Structural, Dielectric, Piezoelectric, Ferroelectric and Nonlinear Optical Properties of $Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3$ in Different Configurations

Sri Muralikrishna Molli - Physics

Nonlinear Optical Absorption Characteristics of Metal Selenides

Sri Gannavarapu Krishna Prasad - Chemistry

Synthesis of Bio-nanocomposites for Applications in Electrochemical Energy Storage, Sensing and Catalysis

Sri Chelli Sai Manohar - Chemistry

Synthetic and in silico strategies for designing drugs, probing sensing mechanisms and optimizing novel HA-BCZT piezo-materials for bone regeneration

Sri Aiyer Kartik Satyanarayan - Biosciences

Assessing Microbial Electron Transfer Activity and Biofilm Formation for Wastewater Treatment in Microbial Fuel Cells

Sri Girish T N - Biosciences

Thermal and Humidity Stress Adaptations of Select Drosophila Species Endemic to Indian Tropics

Sri Rajabushan Jagadish Nayak - Economics

Fiscal Consolidation and Sustainable Public Debt: A Case Study of India

Miss Nelli Vani Sri - English Literature

Text and Subtext: A Study of Select Plays of Ivan Turgenev and Anton Chekhov

Sri Siddhartha R - English Literature

From the Colonial to the Carnival: A Study of the Trajectory of Indian Cricket from the Post-Colonial and the Bakhtinian Perspectives



Annual Sports & Cultural Meet

11-15 January 2020

The Sri Sathya Sai Educational Institutions held the main event of the Annual Sports & Cultural Meet on 11 January 2020 at Sri Sathya Sai Hill View Stadium, Prasanthi Nilayam, Andhra Pradesh, India.

The event is a culmination of various sports, cultural and fine arts competitions held at all campuses of the University and other Sai educational institutions throughout the academic year. The Sri Sathya Sai educational institutions include all the four campuses of Sri Sathya Sai Institute of Higher Learning, Sri Sathya Sai



Primary and Higher Secondary School, Smt. Eswaramma High School and Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS) College of Nursing and Allied Health Sciences.

It showcases an array of physical and cultural presentations by over 3000 students of the institutions spread across two sessions, morning and evening. Preparations, which began a month in advance, involved hundreds of practice hours by all students and teachers at each institution.

Process over outcome

The Annual Sports & Cultural Meet brings to the fore several qualities of human excellence in students. With only a few weeks to perfect their presentations, and with academics and other daily pursuits, students have to make every minute of preparation count. Very quickly, students need to have clarity of their outcomes, work in teams with unity (often with colleagues they have never worked with before), surmount the mental and physical obstacles that may seem impossible, and so on.

All this is accomplished on a shoestring budget that leaves the teams to make their final props and other event items with available and existing resources at the hostel. It not only helps them be thrifty, but forces them to think out of the box and bring in an element of creativity that challenges their current model of the world and pushes their comfort zones.

This process is one of several ways through which the conscious experiment of man-making and character building at Sai educational institutions truly succeeds. It prepares SSSIHL students to navigate the toughest of situations without sacrificing their values. At the same time, it helps build strong inner qualities such as a sense of unity and teamwork, determination, discipline and hard work.

The cherry on the cake, however, is the immense love students have for Bhagawan Sri Sathya Sai Baba, their Divine Master. For Sai students, the entire gamut of the Annual Sports and Cultural Meet boils down to this singular focus. Bhagawan Baba—with His divine vision—reciprocates this and makes sure that these pure feelings of Love are translated into the pursuit of excellence in every facet of the students' evolution.

As He often said, The End of Culture is Perfection.

Sports Meet Presentations

11 Jan 2020

Anantapur, Prasanthi Nilayam, Brindavan and Muddenahalli Campuses presentations: Aerials, Human Pyramids, Graceful Rhythmic Drill, Luminous Display, Bike Stunts: Ascenders, Hip-hop Dancers, Roller Skating: 24 Inliners, Drums: Big Bang, Kalari Commandos, Sumos, Hipsters, Impavidos Reborn, Shotokan Warriors, Saibots, Acrophiles, Dynamic Jugglers, Acroyoga, Hidden Hands and Cowboys

Cultural Meet Presentations

12-15 Jan 2020

- o Drama presentation by students of the Brindavan Campus: Sant Ramdev
- o Drama presentation by students of the Muddenahalli Campus: Mine to Thine
- o Drama presentation by students of the Prasanthi Nilayam Campus: Sarvam Krishnamayam



Prize Distribution Ceremony

15 Jan 2020

The Prize Distribution Ceremony celebrated the excellent performances in sports and cultural events during the Annual Sports and Cultural Meet and during the academic year 2019/20 by students of each Sai educational institution.

Followed by a series of talks by a teacher and students from each SSSIHL campus highlighting the significance of the event, prizes and cups were awarded to the students of all Sai educational institutions that excelled in individual and team events for sports, cultural and fine arts performances at their respective establishments. The ceremony ended with a Divine Benediction by Bhagawan Baba.

Athletic Champions

Tokalapalli Adireddy Gari Vandana

Postgraduate, Anantapur Campus

Kesavani Netheti

Undergraduate, Anantapur Campus

Thota Sujendra

Postgraduate, Prasanthi Nilayam Campus

Sridhar Sola

Undergraduate, Prasanthi Nilayam Campus

Saurabh Suman

Brindavan Campus

Samir Kumar Majhi

Muddenahalli Campus

Cultural Champions

Pokuri Sai Punitha

Postgraduate, Anantapur Campus

Ketki Tripathi

Undergraduate, Anantapur Campus

Charan Sai Ramireddi

Postgraduate, Prasanthi Nilayam Campus

Vedant Monger

Undergraduate, Prasanthi Nilayam Campus

S Sai Shriram

Brindavan Campus

Bhatt Janak Ashwin

Muddenahalli Campus

Fine Arts Champions

Sumani Rai

Postgraduate, Anantapur Campus

Pragati Gupta

Undergraduate, Anantapur Campus



Community Service

Each year, students and teachers of the University work with local communities around the campuses throughout the year. Many of these service activities are initiatives by students themselves. Inspired by the example and precepts of our Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba, they reflect the impact of the unique blend of secular and spiritual education they receive here. Examples of these from 2019/20 include:

Narayana Seva

Anantapur Campus, every month

Each month, food packets are distributed to the needy poor in the slums around Anantapur town. The monthly Narayana Seva activity sees a team of cooks, campus workers, rickshaw drivers and students come together to deliver 25 kg of Pulihora (approximately 270-300 packets) to these marginalized citizens of society. The impact of this programme goes a long way in the lives of students. As alumni, they continue this activity, both at a large and small scale.

Adoption of Leper Colony

Anantapur Campus, 1986 to date

The students and staff of the Anantapur Campus hostel have adopted a leper colony situated in the outskirts of the town of Anantapur since 1986, with the objective of making the inmates of the colony as self-sufficient as possible. The grand old project, Project Love Stream, is etched in the memory of many a student as an example of service in action and how a little love and care has the power to create long lasting benefits to generations of families.

As part of the project, each year, the students of the Campus make a variety of handicrafts like cards, bookmarks, rakhis and friendship bands. These are then sold to the inmates of the hostel and the amount thus raised is utilized to buy provisions for the residents of the leper colony on a monthly basis. In 2019/20, monthly provisions were regularly distributed to the inmates.

Celebrating Christmas with village children

Muddenahalli Campus, Christmas 2019

For some years now, on the morning of 25 December, the students of the Campus visit Muddenahalli village for Christmas celebrations. They begin with nagar sankeertan from the hostel, and make their way to the village. They then offer lighted candles to the children who participate in the bhajan session held at the local Hanuman temple. After the prayers, all the village children are offered chocolates as Christmas gifts, giving a lot of joy and pleasure to both the village kids as well as the students themselves.

Old Age Home Visit

Muddenahalli Campus, Jul and Nov 2019

Another staple yearly service is the scheduled visit to Sai Dwarakamayee Vriddhashrama, an old age home at Sultanpet, Nandi village, about four kilometres from Muddenahalli. The resident population has now swelled to about fifty residents.

After a half hour bhajan session, the students spent about an hour interacting with the aged elders, during which they sang songs and listened to the experiences of the residents. The elders too enthusiastically sang and talked to the young students. For those residents who could not come to the prayer hall, the students visited them in their living rooms. The visit taught students, especially freshers, the value of empathy and respect for elders. They were emotionally touched after listening to the stories of the elders.

Aradhana Day Seva

Brindavan Campus, 24 Apr 2020

Amidst the COVID-19 lockdown, students of the campus with the help of alumni served prasadam (in the form of food packets) to 900 people in Kadugodi village. Cooking commenced at 3 a.m. followed by packing, transportation and organized distribution. In addition to this, ashram workers and their families were given new clothes.

The 'Bring Back Chitravati to its Glory' campaign

Prasanthi Nilayam Campus, 15 Nov 2019

As part of an ongoing organised effort between the University and local authorities to bring back the sacred River Chitravati to its glory, postgraduate students of the campus cleaned parts of the ghat and planted scores of trees along the Chitravati River. The local community also got involved, including the Commissioner himself.

"This has helped me relate firsthand to the needs of the community. We experienced the theoretical aspects of our Rural Management course today," said a student.

Grama Seva

Prasanthi Nilayam Campus, Academic Year 2019/20

#GramaSeva

Initiate. Serve. Love. Repeat.

Teams of students, doctoral research scholars and teachers visited all the three villages again to continue their work from the previous academic year.

At the village of Narsimpalli, students and teachers responded to

the requests of village folk in providing upgradations to the existing dilapidated government school. They began with essential plumbing work (taps, pipelines, etc.) and worked with the village mason and others to facilitate further work. Later on, in December 2019, students mapped and geotagged major areas of the village (for cartographic reasons and identification of issues). In addition, they undertook the restoration of the Anganwadi (rural child care centre): A complete paint job, installation of new toilets, cleaning the septic tank, installation of an overhead water tank (1000 liters) and new electrical wiring for all the rooms (with energy-conserving LED light fittings).

At Bonthalapalli, students took on the challenge of reducing unemployment of the village youth. They highlighted the need for better skills to get actively employed. After conducting thorough interviews of the twenty unemployed youth of the village and assessing their current educational qualifications, skill sets, etc., they then went back with consolidated data and actively worked with them to teach the required set of soft skills, thus enhancing their employability.

At Marlapalli, under the Education module, students of Std. IV-VI were trained in basic reading skills. Students of Std. VII were involved in a host of Mathematical activities. Other activities include making of Bank books, learning basic music skills and Yoga asanas. Separately, medical data of 78 village elders was collected and students of the M.Tech. in Computer Science programme employed their data mining skills and came up with a follow-up plan (including predictive measures) for the next action steps.

Love All, Serve All, as our Revered Founder Chancellor always taught us.





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Dear students!

Be like the star which never wavers from the crescent but is fixed in steady faith.

When the sun is over your head; there will be no shadow; so too when faith is steady in your heart; it should not cast any shadow of doubt.

Do not talk ill of others; talk only of the good in them; all are good; if you see bad in them, it is because there is bad in you; if you do not like someone, do not mix with him.

Grace is the sunlight which will ripen the fruit; sadhana is the sap which rises from earth. Both are needed by the tree in order that it may yield fruit.

With Blessings
Papa.



ssihl.edu.in

The end of knowledge is Freedom

SRI SATHYA SAI BABA



Annual Report 2019





**Education softens the heart. If the heart is hard,
one cannot claim to be educated.**

**SRI SATHYA SAI BABA
Revered Founder Chancellor, SSSIHL**



Foreword

I am delighted to present this year's Annual Report, which illuminates our Institute's pledge to progressing distinction in education and translation research coupled with character building in a modern Gurukula system. When the Sri Sathya Sai Institute of Higher learning (SSSIHL) was established more than five decades ago, our founder, Bhagawan Sri Sathya Sai Baba sought to foster the academic and spiritual wealth of its students. I am proud to state that, over the decades, SSSIHL savoured the triumph in accomplishing this objective and has scaled greater heights in both academics and self-development. It has been my great privilege to serve this sanctified institute as its Vice-Chancellor for the past five years. During this period, I witnessed a fabulous inclusive growth in all its endeavours from its already resilient locus.

I am pleased to share our academic performance and accomplishments for the academic year 2018/19. During this period, we specifically aimed at embedding excellence in teaching and research capabilities by offering world-class infrastructural facilities to our student community. As a result, we continue to entice bright, committed young minds to our academic programmes from across all the states of our country.

A strong research environment, combined with exceptional academic practices that are in place at SSSIHL, resulted in the growth of national and international collaborations. For instance, the Department of Chemistry has undertaken a series of collaborative projects in emerging areas of research with Labby Inc, USA, SKAN Research Lab Pvt. Ltd., Puducherry, Devic Earth Pvt. Ltd., Bangalore, Twastrix, Pune, Dr. Reddy's Institute of Life Sciences, Hyderabad; and the Department of Mathematics and Computer Science is involved in pursuing joint research with Proventeq India Pvt. Ltd., Pune, Thinkcube Innovations Pvt. Ltd., Bangalore, Grey Scientific Labs, Visakhapatnam, Code Tantra Tech solutions Pvt. Ltd, Hyderabad and United Care Development Services, Hyderabad in contemporary research areas of mutual interest.

We did exceptionally well in obtaining research funding to the tune of ₹3.27 crore to individual faculty members across various science departments from several Government and Non-Government agencies both from within the country and overseas.

The interdisciplinary approach and our investment on state-of-the-art research facilities did help to endow our researchers to make significant contributions by publishing more than 160

research articles encompassing three fascinating thrust areas - Health, Energy and Environment - in various peer reviewed journals of high impact.

The establishment of the Central Research Instruments Facility (CRIF) at the Prasanthi Nilayam Campus of the Institute has provided the required impetus to this progress. In fact, these facilities incentivised bright, talented young faculty who pursued their post-doctoral work elsewhere in the world to join our teaching fraternity. I am equally delighted to report the establishment of the Central Research Laboratory at our Anantapur Campus, which is designed and customized to cater to the research needs of our women faculty and students.

It is reassuring to note that within a short duration, giant strides have been made on a number of translational research projects in various frontier areas of science and technology covering Physical, Biological, Chemical, Materials Science, Food Sciences and Computational and Various interdisciplinary areas. Towards this, a prototype low cost Gamma camera associated with high resolution, Optical Coherence Tomography (OCT), mobile-based point of care devices for clinical use, etc. have been designed and fabricated.

The powerful combination of a research-rich ambience and our dedication to the personal and academic development of our students has been well recognized the world over. Much of this is made possible owing to the generous assistance of our alumni. I wish to thank all our faculty and staff who have made immense contributions to the successes of SSSIHL. I am more than convinced that SSSIHL is well placed to meet with any future academic encounters.

My profound gratitude goes out to the Chancellor and the members of the Sri Sathya Sai Central Trust, without whose dedicated love, effort and support, none of this would have been possible. On behalf of the SSSIHL family, I pray to our Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba to continue to bless us with His Divine guidance so that this modern Gurukula, with its unique identity and offerings, continues to positively shape the landscape of education in our country.

I do hope that you cherish reading this report.

Prof. KBR Varma
Vice-Chancellor

Annual Report 2019

1 June 2018 to 31 May 2019

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Sri Sathya Sai Values-based Integral Education

Sri Sathya Sai Institute of Higher Learning (Deemed to be University), Prasanthi Nilayam, Andhra Pradesh, India, is a visible manifestation of Bhagawan Sri Sathya Sai Baba's vision of education for human transformation.

Bhagawan Baba has designed the system of Sri Sathya Sai Values-based Integral Education in such a manner that between the time an 18-year old student joins the Institute and when she or he graduates (at the age of 21 or 23), there is a deep inner transformation that takes place. This concept is very unique at the university level.

The Institute hosts over 1300 undergraduate, postgraduate, professional and research students across four campuses:

For women students:

- Anantapur Campus at Anantapur, Andhra Pradesh

For men students:

- Prasanthi Nilayam Campus at Puttaparthi, Andhra Pradesh
- Brindavan Campus at Whitefield, Bangalore, Karnataka
- Muddenahalli Campus at Muddenahalli, Karnataka

Programmes offered include:

- Undergraduate: B.A., B.Com. (Hons.), B.Sc. (Hons.), B.B.A., B.P.A.
- Postgraduate: M.A., M.Sc.
- Professional: B.Ed., M.B.A., M.Tech.
- Research: Ph.D.

A Modern Gurukula

Sri Sathya Sai Institute of Higher Learning (SSSIHL) was founded to inculcate ethical and moral values in students. These ethics and morals form the undercurrent of every subject taught at the University. This helps students develop a wholesome and balanced personality, one where academic competence is supplemented with good character.

This holistic development of students can only be possible in an environment that encourages the development of the student's mind, body and spirit.

To facilitate this, the University has a compulsory residential policy for all students and doctoral research scholars. It is an essential ingredient for the University's Values-based Integral Education to achieve its objective of transformation. The environment is similar to the ancient Indian Gurukula system of education, in a modern context. Teachers and students live and grow together in an atmosphere of mutual trust and unity. This helps students develop a wholesome and balanced

personality, one where academic competence is supplemented with good character.

Distinctive Features

Admissions

- Merit-based open admissions policy for all irrespective of income, religion or region
- Free education for all students

Residential Character

- Compulsory residential character enabling translation of lessons learnt into practical skills through experiential learning
- Spiritual ambience in an environment of discipline and love
- Teaching faculty, research scholars and students residing in the hostel
- Cultivation of the spirit of self-reliance, brotherhood and sacrifice through mentoring and personal example

Infrastructure

- Campuses set in spacious and peaceful surroundings
- Well equipped, modern science laboratories and cutting edge Research Instruments Facility
- Libraries across campuses with over 2,00,000 volumes
- Computer and Multimedia learning centres with ultra-high speed broadband internet connectivity
- International Centre for Sports and a cricket stadium

Academics & Research

- Over 95% examinations pass rate
- Favourable Student-Teacher Ratio
- Integrated five-year programmes combining undergraduate and postgraduate studies for a systematic and graduated learning process
- Interdisciplinary research for societal benefit
- Awareness Programmes and Moral Classes reinforcing human values

Integral Education

- Life lessons learnt through the message of the Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba
- Application of what is learned in daily life
- Integrating human values with secular knowledge
- Inculcating the spirit of self-reliance and service to society
- Synthesis of science and spirituality for societal benefit

The concept of integral education that SSSIHL imparts is willingly pursued by all teachers, staff and students.

The Process

The diagram on the right forms the basis of the system of Values-based Integral Education at SSSIHL.

The base is the concept of a modern Gurukula that sustains all relationships and activities at SSSIHL. It is responsible for creating and sustaining the congenial environment necessary for the teacher-student interaction to grow and develop.

Adherence to discipline and appropriate behaviour are the two important aspects that encompass all interactions. The five human values of Truth, Right Conduct, Peace, Love and Non-violence form the undercurrent of all the dimensions of integral education.

These dimensions are: Intellectual, Physical, Cultural, Devotional and Service. The key activities for each of these dimensions form the basis of most of the time that students spend at SSSIHL.

Bhagawan Baba purposefully designed the system of Integral Education so that while students spend 60% of their time on academics (intellectual capacities), they also spend 40% time on the development of other qualities.

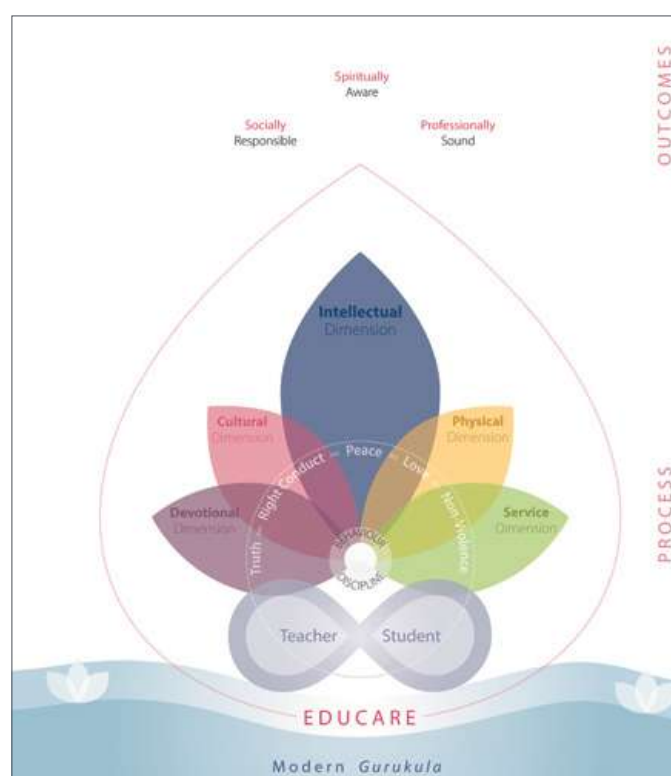
(See page 8 for further details.)

The Daily Routine

This is a crucial component of this process. Each student's day starts at 5:00 a.m., with a couple of hours spent in prayer, exercise and other vocational pursuits (such as practice sessions for music, band, traditional Indian music and the likes).

Classes commence at 9:00 a.m. After college ends at around 4:00 p.m., students move to the Mandir/Prayer hall for participation in congregational chanting (veda), devotional singing (bhajans) and other spiritual activities. These also include talks by eminent speakers on a variety of spiritual topics. Post dinner, students usually spend time on their studies.

I have established these institutions to impart spiritual education as a main component and worldly education as a secondary one. Education should enable one to cultivate good qualities, character and devotion. The teaching of the university curricula is only the means employed for the end, namely, spiritual uplift, self-discovery and social service through love and detachment.



Sri Sathya Sai Values-based Integral Education

The Outcome

The outcomes of the system of Values-based Integral Education at SSSIHL are threefold. It prepares all graduates to be:

- o Spiritually aware
- o Socially responsible and
- o Professionally sound

It helps develop a strong character and positive qualities in students and nurtures virtues like adaptability, tolerance and sacrifice; shaping them into noble and responsible citizens.

Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL

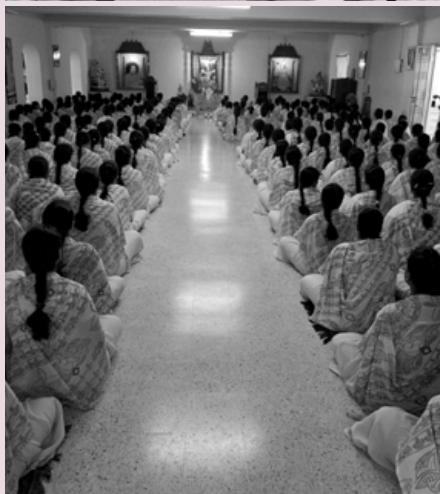
Integral Education Activities

All students at SSSIHL spend 60% of their time at university on intellectual activities (primarily on their studies). The rest of the 40% of their time is spent almost equally on activities related to the Integral education dimensions of Devotional, Cultural, Physical and Service, as highlighted below.

Devotional Dimension

- Bhajans (Sankirtan)
- Vedic chants and stotrams
- Meditation & Silent sitting
- Suprabhatam (prayer at dawn)
- Assembly (college prayer)
- Brahmaarpanam (food prayer)
- Kshama Prarthana (night prayer)

The activities of the devotional dimension enable a student to connect to his/her Divine inner Self. This inner connection opens the heart and brings forth the feeling of love, compassion and empathy for fellow human beings.



Cultural Dimension

- Celebration of festivals: Eid-al-Fitr, Independence Day, Christmas, Sri Krishna Janamashtami (cow procession), Ganesh Chaturthi, Ganesh Immersion, Christmas, Ugadi, Sri Ramanavami, etc.
- Brass Band
- Nadaswaram & Panchavadyam ensemble
- Annual Sports & Cultural Meet
- Performing Arts: Music programmes
- Drama & Dance
- Fine Arts: Rangoli, Card making, Photography, Altar making, etc.
- Public Speaking
- Debates and Elocution

From the performing arts to public speaking to the fine arts, the cultural dimension is designed to give students wide opportunities to find an avenue to their individual artistic expression.

The university makes every effort to provide the best possible resources—both material and human—so that students excel at their chosen activity. Festivals of major world religions are celebrated, reinforcing the unity among all faiths. Every student is involved in one way or another in the celebration of these festivals.



Physical Dimension

- Sports
- Games
- Jogging
- Exercises and Yogasanas
- Annual Sports & Cultural Meet

Sports and games are a part of the daily routine of all students. From yoga classes to fitness training, from team sports to individual sports, students are encouraged to overcome their limitations and excel in these activities.

The university has excellent sports facilities.



Service Dimension

- Self-Reliance departments:
Electricals, Plumbing (water supply),
Audiovisual, general store,
dispensary,
dietary services, hostel mess, arts &
crafts, costumes & props, etc.
- Community living
- Social Work
- Voluntary work
- Community Service
- Prasadam Distribution

The philosophy of service at SSSIHL is based on the concept that divinity pervades all of humanity, and hence when you serve others, you are serving the Divine. Students learn to serve without expecting anything in return, other than the deep inner satisfaction of serving others.

The compulsory residential system, where students live in dormitory-styled accommodation with other students from totally different backgrounds (for a minimum of two years and up to five years or more), provides an excellent foundation for the service dimension.



Intellectual Dimension

Apart from academics and research, the activities in this dimension include:

Awareness Courses

These mandatory courses are designed to cultivate a broad view of the human condition in students. The course content (e.g. the Unity of Religions and Faiths, Study of the Indian Epics, etc.) helps trigger self-reflection and enquiry and sensitises students to the concerns of society, and gets them to think about practical solutions to these problems.

Thursday Moral Class

At each campus, Thursday mornings begin with an hour of inspiring and ennobling talks by speakers focusing on their personal spiritual experiences, messages from sacred scriptures and other elevated and socially relevant themes. It is also used to highlight students' talents in music, dramatics, elocution, debates, quizzes, etc.

Prayer Talks

Every morning before classes commence at the college, all students and teachers gather for the morning assembly. Prayers, veda chanting, bhajans and a few minutes of silent sitting are sometimes followed by a talk by students, faculty members or invited guests on topics related to morals and values.

In 2018/19, some of the above topics included: Yoga as a Lifestyle, My Beloved Lord, Power of the Human Mind, Living with God, Virtues, The Boundless Expanse, My Journey Within, Disappointment and Purpose, Hostel Life, not a Hostile Life, The Power of The Present Moment, Fear: An Emotion to Overcome, Theory of Karma, High Seas of Life, Temper Management, Self-Confidence, Faith in One's Self, Experience with Sai, Lessons of Life, Blind faith & Love for God, and The Ideal Dreamer.



University Governance & Structure

Sri Sathya Sai Institute of Higher Learning (Deemed to be University) is an independent and self-governing institution. It was established by the Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by the Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts.

The Trust

The Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust) was founded to foster the culture of India and promote in the students and teachers an awareness and understanding of the social needs of the country; with special focus to the needs of the rural population. It is aimed to inculcate in students a world perspective - an international outlook imbuing human values along with a spiritual and secular education. Its members for 2018/19 were:

- **Justice Sri A P Misra**
Former Judge, Supreme Court of India, Chairman of the Human Right Commission (Uttar Pradesh) and Chairman of Arbitrators by the ICC court in Paris
- **Sri T K K Bhagwat**
Member, Sri Sathya Sai Central Trust, Former Chairman of Indian Overseas Bank and Former Advisor, International Monetary Fund
- **Sri S S Naganand**
Member, Sri Sathya Sai Central Trust, Senior Partner, JustLaw Advocates, Senior Advocate, High Court of India and Supreme Court of India and Former President, International Commission of Jurists (Karnataka section)
- **Sri R J Rathnakar**
Member, Sri Sathya Sai Central Trust, Active Social Worker and Alumnus, Sri Sathya Sai Institute of Higher Learning
- **Prof. S P Thyagarajan**
Former Vice-Chancellor, University of Madras, Professor of Eminence & Dean (Research), Sri Ramachandra University and Eminent Microbiologist and Inventor

The Principal Bodies

The administrative and academic functioning of the university is carried out by the following two principal bodies:

- The Board of Management
- The Academic Council

The Board of Management

The Board of Management is the principal authority of the University, responsible for its general management and administration. Its external members for 2018/19 were:

- Prof. K B R Varma, Vice-Chancellor, SSSIHL (Chairman)
- Sri S S Naganand, Member, Sri Sathya Sai Central Trust, SSSIHL (Public Charitable Trust) (Nominee)
- Dr. (Ms.) Renu Swarup, Secretary, Dept. of Biotechnology, Ministry of Science & Technology, Govt. of India
- Dr. Sandip Chatterjee, Officer on Special Duty/Scientist F,

Ministry of Electronics and Information Technology, Govt. of India

- Prof. Srinivasan Chandrasekaran, Professor (Hon.), Dept. of Organic Chemistry, Indian Institute of Science
- Prof. S Siva Sankara Sai, Dean, Faculty of Sciences, SSSIHL
- Prof. (Miss) Rajeshwari C Patel, Dean, Faculty of Economics & Humanities, SSSIHL
- Prof. G Nageswara Rao, Head, Dept. of Chemistry, SSSIHL
- Prof. R Prabhakara Rao, Head, Dept. of Economics, SSSIHL
- Prof. B Sai Giridhar, Registrar, SSSIHL (Member Secretary)

In 2018/19, The Board of Management met on 1 July 2018 and 22 September 2018

The Academic Council

The Academic Council is the principal academic body of the University. It has general control over and is responsible for the maintenance of standards of teaching, research and training, approval of syllabus, coordination of research activities, and examinations and tests within the University. Its external members for 2018/19 were:

- Prof. H P Khincha, Dept. of Electrical Engineering, Indian Institute of Science, Bangalore
- Prof. Gopal Naik, Dean, Dept. of Economics & Social Sciences, Indian Institute of Management, Bangalore
- Prof. S B Krupanidhi, Professor, Materials Research Centre, Indian Institute of Science, Bangalore
- Dr. N R Munirathnam, Director General, Centre for Materials for Electronics Technology (C-MET), Ministry of Electronics and Information Technology, Pune
- Prof. Ram Rajasekharan, Director, Central Food Technological Research Institute (CFTRI), Council of Scientific and Industrial Research (CSIR), Mysore
- Dr. V Natarajan, Director, Research & Innovation Centre, IIT Madras Research Park, Chennai

In 2018/19, The Academic Council met on 15 October 2018.

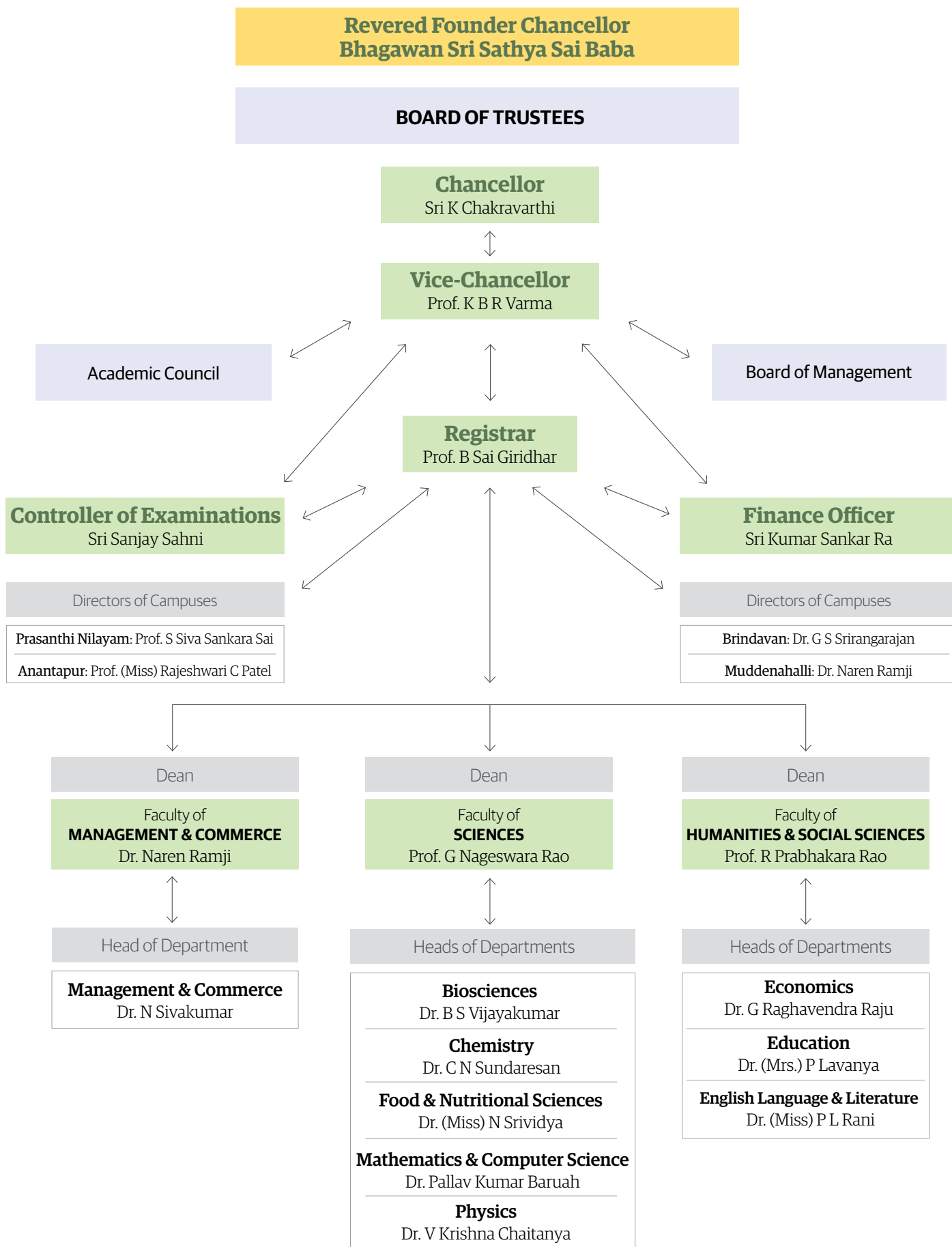
Committees

These are set up to ensure the high academic, research and administrative standards that SSSIHL has striven to consistently maintain. They include:

Important: The Finance Committee, Planning and Monitoring Board, Research Advisory Board, The Boards of Studies, Internal Quality Assurance Cell (IQAC), Institutional Ethics Committee, Institutional Biosafety Committee, Research Conferment Cell, Building and Works Committee, and Campus-Hostel Management Committee

Mandatory/Essential: The Anti-Ragging Committee, Anti-Discrimination Cell, Committees for SC/ST/OBC/Minority, Internal Complaints Committee, Intellectual Property Rights Cell and Innovation Cell, Social Media Cell, and Student Counsellor Internal Committee for students with disabilities

Sri Sathya Sai Institute of Higher Learning (Deemed to be University) has been established by Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts.



Central Research Instruments Facility (CRIF)

SSSIHL Central Research Instruments Facility (CRIF), Based at the Prasanthi Nilayam Campus, is one of the few such facilities in the country (and the first in a rural location) that houses advanced Characterization/ Analytical tools to carry out Translational Research in various areas of Science and Technology such as Physical, Biological, Chemical, Materials Science, Food and also Computational and Interdisciplinary Areas.

A Ph.D. is a person who helps others through his research and develops the country.

**Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL**

The facility, built with a funding of ₹45 crore with the kind support of Sri Sathya Sai Central Trust, hosts a range of cutting-edge instruments and laboratories as listed here. It has significantly strengthened the research facilities at SSSIHL by providing state-of-the-art infrastructural facilities under a single roof.

This has allowed faculty and postgraduate and doctoral students at the Institute to accelerate their research work in all the major research areas of the Faculty of Sciences - Health, Energy and Environment. It enables them to keep pace with the scientific developments taking place globally, and as a result, their research findings are being published in peer reviewed high impact journals. These concerted efforts to carry out research in cutting edge areas of Science and Technology helps contribute to the needs of society at large.

Full-time technical assistants with specific expertise operate and maintain the instruments and laboratories. SSSIHL CRIF facilitates the strengthening of interdisciplinary health related research collaborations between SSSIHL and Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS). Some of these include: Regenerative Medicine & Tissue Engineering, Rapid Detection of Endemic Diseases, Diabetic Retinopathy, Development of Cost Effective Multi-Modal Microscopes, SPCE-based Point of Care Devices, etc.

Core Facilities

The following core facilities at CRIF are shared resources offering a range of services to the research community at SSSIHL:

- Femto Fab Facility
- Electron Microscope Facility
- NMR & Mass Spectrometry Facilities
- Materials Characterization Facility
- Thermal and Optical Characterization Facilities
- Liquid Nitrogen Facility
- Central Utilities Facility
- Optical Imaging and Integration

Laboratories

In addition, CRIF hosts the following labs:

- Wet Chemistry Laboratories
- Functional Materials Laboratory
- Water Research and Electrochemistry
- Bio-Safety Laboratories: Level 1 and Level 2
- Functional Glasses and Ceramics Laboratory
- Non-linear Optics Laboratory
- Computational Science and Plasmonics



Collaborators

SSSIHL has successfully forged several research collaborations with leading organizations across India and abroad.

Academia & Research

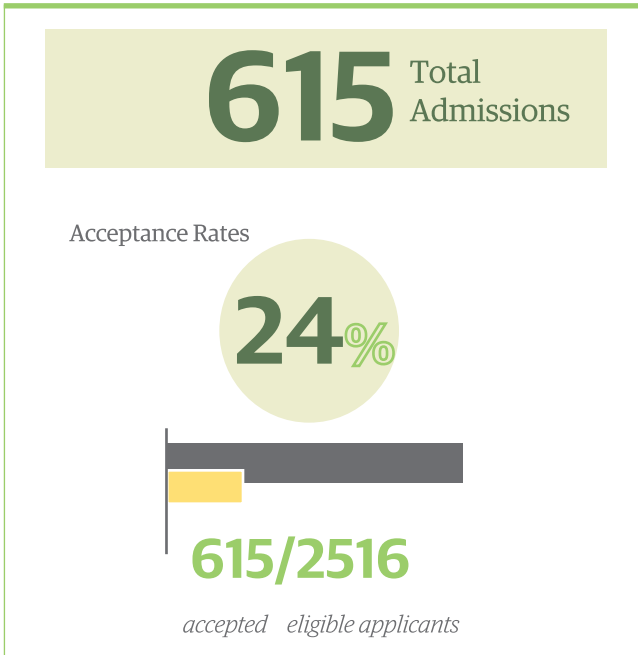
- ICAR-Indian Institute of Horticultural Research, Bangalore
- Indian Institute of Technology, Madras and Kharagpur
- FDA-Center for Biologics Evaluation and Research, USA
- Indian Institute of Science Education and Research, Mohali
- Indira Gandhi Centre for Atomic Research, Kalpakkam
- University of Maryland, USA
- The Institute of Bioinformatics and Applied Biotechnology, Bangalore
- Raman Research Institute, Bangalore
- New Jersey Institute of Technology, USA
- Tata Institute for Fundamental Research, Mumbai
- Madras Diabetes Research Foundation, Chennai
- Clemson University, USA
- Geological Survey of India, Hyderabad
- Indian Institute of Science, Bangalore
- Universidad del Norte, Colombia
- National Institute of Nutrition, Hyderabad
- The Sahlgrenska University Hospital, Sweden
- Baylor College of Medicine, USA
- CSIR-National Chemical Laboratory, Pune
- University of Wollongong, Australia
- University of Colorado, USA
- International Centre for Genetic Engineering and Biotechnology, New Delhi
- National Institute of Pharmaceutical Education & Research, Hyderabad
- Japan Advanced Institute of Science and Technology, Japan
- CSIR-Indian Institute of Chemical Technology, Hyderabad
- Institute for Photonics and Nanotechnologies, Italy
- Dr. Reddy's Institute of Life Sciences, Hyderabad
- Central Leprosy Teaching and Research Institute, Chennai
- Centre for Materials for Electronics Technology, Pune
- CSIR-Central Drug Research Institute, Lucknow
- International Center for Genetic Engineering & Biotechnology, New Delhi
- National Animal Resource Facility for Biomedical Research, Hyderabad
- CSIR-Central Electro Chemical Research Institute, Karaikudi

Industry

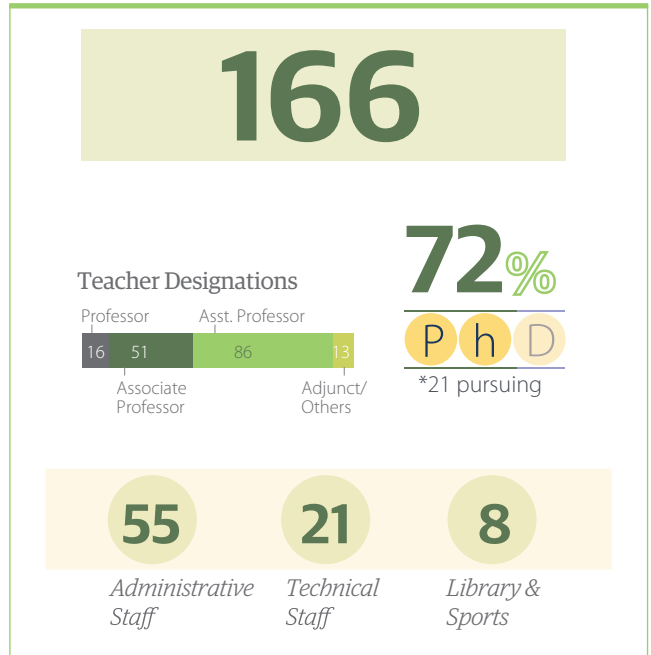
- Grey Scientific Laboratories, Visakapatnam
- Agilent Technologies India Pvt. Ltd.
- Amara Raja Batteries Pvt. Ltd., Tirupati
- Twastrix, Pune
- LightMotif Automation Sensors and Systems Pvt. Ltd., Hyderabad
- Omix Research & Diagnostics Laboratories Pvt. Ltd., Bangalore
- Lab Engineers, Bangalore
- Labby Inc., USA
- Insta Power Ltd., New Delhi
- Symrise Pvt. Ltd., Chennai
- Indras Pvt. Ltd., Hyderabad
- Syngene international Ltd., Bangalore
- Mylan Laboratories, Bangalore



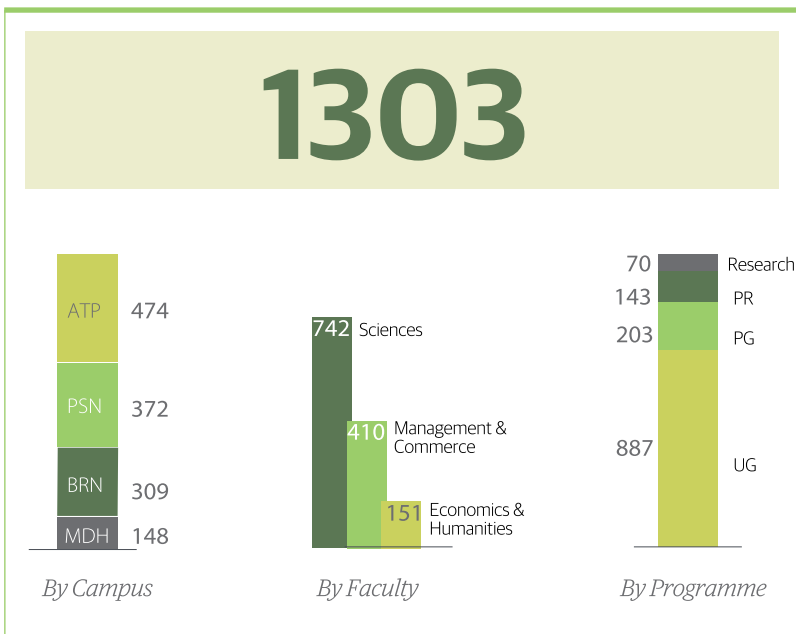
SSSIHL Statistics 2018/19



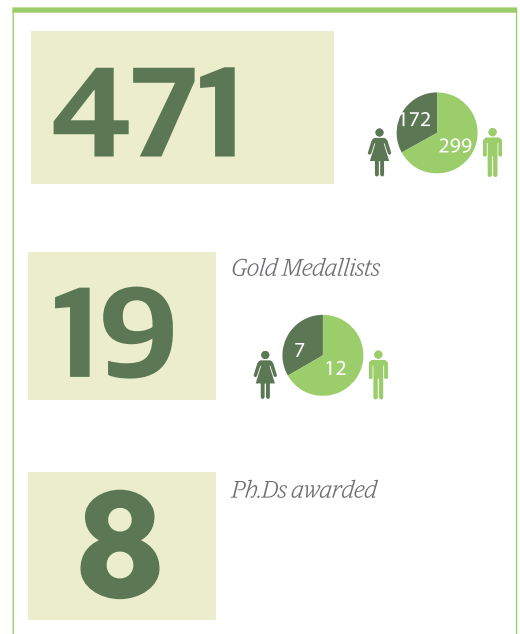
Admissions



Staff Profile



Student Profile



Graduates

2:1Student
Computer
Ratio**8:1**Student
Teacher
Ratio**23/29***States of India*
Student
Diversity**70**Doctoral
Research
Scholars**180**Visiting Faculty &
Guest Lecturers**166**Research
Publications

Examinations Pass Rates

92%*Undergraduate Programmes***98%***Postgraduate Programmes***₹ 15.62**
croreExpenditure on
Equipment &
Infrastructure**₹ 3.72**
croreResearch &
Teaching Grants**₹ 2.58**
lakhExpenditure
per Student /
per year

Events

To facilitate wider exposure to the developments in academia and industry and enable the exchange of ideas, the University conducted several national and international workshops and conferences during the academic year 2018/19.

Mathematics and Computer Science

DMACS@25: Silver Jubilee Retreat

7-8 Jul 2018

In 1993, with the Divine blessings of Bhagawan Sri Sathya Sai Baba, the Department of Mathematics & Computer Science (DMACS) was born. On 7 and 8 July 2018, DMACS students, doctoral research scholars and teachers were joined by over 180 alumni from all over India and abroad (and many more who live-streamed the sessions) to celebrate 25 years of the department at Prasanthi Nilayam.

The two-day felicitation included talks and discussions that charted the journey of the department, paid tribute to the teachers who dedicatedly served the department over the decades, and communicated the current academic and research agenda at DMACS.

The Science of Mathematical Modeling of Disease Transmission

12-15 Aug 2018

The mathematical modeling of disease transmission is a tool used to study the mechanisms by which diseases spread, to predict the future course of an outbreak and to evaluate strategies to control an epidemic. Its cost-effectiveness analyses can play a central role in maximizing the utility of limited resources for neglected tropical diseases.

The workshop – conducted in collaboration with the Mathematical, Computational and Modeling Sciences Center, Arizona State University, USA – served as an introduction to the formulation, analysis and application of mathematical models that describe the dynamics of infectious diseases. During the course of the four days, the workshop reviewed contributions that mathematical modeling has made to optimizing intervention strategies of infectious diseases and proposed directions forward in the modeling of problems associated with integrating new knowledge of host and pathogen ecology, evolutionary responses to interventions, and expanding the scope of sensitivity analysis in order to achieve robust results. It presented participants with cutting edge and interesting methods of training that will encourage new generations of mathematicians to explore future interventions in this area.

External experts and guests from: Arizona State University (USA), George Mason University (USA), University of South Carolina (USA), Instituto Politécnico de Tomar (Portugal), Inter Americana University of Puerto Rico, Indian Institute of Technology, Kanpur, Indian Institute of Science, Bangalore, Public Health Foundation of India, International Institute of Information Technology, Bangalore, Vellore Institute of Technology, Tamil Nadu, C-DAC, Pune, Nelson Mandela African Institution of Science and Technology (NM-AIST), Indian Institute of Engineering Science and Technology, West Bengal, BGSB University, Jammu & Kashmir, Indian Institute of Technology, Patna

Physics

Computational Aspects of Materials Science

22 Jun 2019

Density Functional Theory finds increasingly broad application in the chemical and materials sciences for the interpretation and prediction of complex system behaviour at an atomic scale. The workshop provided students with the theoretical basis of Density Functional Theory (DFT) and quick hands-on exposure to Quantum Espresso software.

External experts and guests from: Indian Institute of Science, Bangalore

Python for Scientific Computing

28-29 Sep 2019

Python is a programming language that has become increasingly popular by virtue of its simplicity and capability and is extensively used by corporations such as Google and Amazon in the areas of data mining and data processing. It is consistently ranked in the top ten most popular programming languages worldwide. The workshop gave a brief review of the fundamental concepts in Python language to students, including the various inputs, uses, strings and constraints. They also had the chance to experiment with code using numpy and scipy packages.

External experts and guests from: Capital One, Applied Materials, Bangalore

Automation & Interfacing Workshop using Labview

24-25 Oct 2018

The workshop introduced and highlighted the need for automation for various real-time experiments and scenarios. In order to achieve this, the students were exposed to utilizing a popular virtual instrumentation software package called

LabView, from National Instruments. The invited resource persons shared their inventions and case studies that extensively utilized the automation process. They also shared their valuable Industry perspective and demonstrated their products and devices which are designed to work on machine vision, involving a great amount of automation. Postgraduate students got first-hand training on various essential programming features of LabView software.

External experts and guests from: NCET, Bangalore, Lydor Software Innovation, Bangalore

Thin Film Coating Techniques

8 Dec 2018

Optical coatings, Magnetic recording media, electronic semiconductor devices, LEDs, thin-film solar cells and batteries. The advances in thin film deposition techniques in the last hundred years have enabled a wide range of technological breakthroughs which most of us benefit in our day-to-day lives. The workshop provided both theoretical and practical knowledge of the preparing, characterizing and utilizing thin films for varieties of applications.

External experts and guests from: Oerlikon Balzers Coatings, Pune and Oerlikon Surface Solutions AG, Switzerland

Chemistry

Electrochemistry and Electrochemical Workstation

2 Mar 2019

The workshop introduced the concept of Electrochemical Workstation and its varied applications. This was followed by hands-on demonstration of Electrochemical techniques like cyclic voltammetry and corrosion studies. A practical demonstration helped cleared doubts of students and aroused the curiosity to explore the potentials of the Electrochemical Workstation with confidence and make the Workstation a research hub.

External experts and guests from: International Advanced Research Centre for Powder Metallurgy, New Materials, Chennai

Advances in Sustainable Energies

2 Mar 2019

Sustainability is no longer a fad but an urgent need in all facets of human society and progress. In fact, in India, we can look into our own historical Indian architectural techniques that can be used today for sustainable living. Sustainability hinges on the three pillars of Economic Development, Social Development and Environmental Protection. If done right, we can alleviate poverty, enjoy clean water and fresh air, build stronger economies and above all, mitigate the environmental threat that we now face as a planet.

The symposium addressed the current advances in sustainable energies. It featured several talks and a panel discussion on topics such as Plastic Solar Cells, Organometallic Gold Complexes for Light Emitting Applications and Energy Sustainability using Homogenous Catalysts, Novel Strategies for Enhanced



Photo-conversion Efficiencies in Emerging Photovoltaics' Technologies, Sustainable Energy Options for India: An Overview, and Ways to Valorise Biomass for Sustainable Energy.

External experts and guests from: SRM Institute of Science and Technology, Chennai, Indian Institute of Technology, Madras and Indian Institute of Technology, Hyderabad

Biosciences

Departmental Symposium

22 Dec 2018

The symposium brought together professionals from the field of Biological Sciences who shared many of their insights on various topics such as Therapeutic Potential of Antisense Oligonucleotide-Mediated Exon Skipping Strategies in Duchenne Muscular Dystrophy, Diabetes and its Relationship with Foot Ulcers, Drug Discovery Methodologies, Systems Analysis and Mechanistic Study on Glaucoma, Autologous Chondrocyte Implantation, Import and Export Norms Involved in the Shipment of Bioproducts across the Globe, and The Repair of Lungs post Injury and Homeostasis.

External experts and guests from: Dystrophy Annihilation Research Trust (DART), Bangalore, James Cook University, Australia, GE Healthcare, Bangalore, Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Bangalore, Ernst & Young, Bangalore, National Centre for Biological Sciences, Bangalore

Symposium on Novel and Progressive Scientific Endeavours (SYNAPSE)

9-10 Feb 2019

The annual symposium explored the current trends in Science and Technology. Invited experts - many of whom are highly accomplished scientists - shared their knowledge and experiences and students got an opportunity to interact with them.

The talks centred on topics such as Check Point Inhibition Therapy for Cancer and Development of Diabetes, Revolution Directed Evolution of Enzymes, Emergence of New Technologies to fight Bacteria and Viruses, Pathophysiology and the genesis of Heart Disease, Gene Editing in Biotechnology, Current trends in Immunology and Acne, and Cosmetic Care relevant to Indian populations.

Students then received a hands-on training in Immunology and participated in eight experiments.

External experts and guests from: Karolinska Institute, Sweden, Indian Institute of Science, Bangalore, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Syngene International Limited, Bangalore, Sri Sathya Sai Institute of Higher Medical Sciences, Bangalore, Mediaids, Chandigarh, L'Oreal India

Research Conclave on Rheumatic Diseases

20 Apr 2019

The one-day event witnessed clinicians from the Indian Rheumatology Association present their view on Rheumatic diseases and its related 'needs of the hour' such as biomarkers, diagnostics and newer therapeutic targets. They also discussed the problems associated with the lack of data on the Indian population. Scientists from the Institute of Bioinformatics and Applied Biotechnology (IBAB), Bangalore presented their views on the importance of genomics and bioinformatics, which could help generate important leads for Rheumatic Diseases from the Indian population. Faculty from the Department of Mathematics & Computer Science (DMACS), SSSIHL came up with an idea of generating a Database on Rheumatic Diseases in Indian Population.

External experts and guests from: Nizam's Institute of Medical Sciences, Subodaya Rheumatology Centre, Max Super Speciality Hospital, Shifa Super Speciality Hospital, Institute of Bioinformatics and Applied Biotechnology (IBAB), Yashoda Hospitals, Sakra World Hospitals.

Food and Nutritional Sciences

Food Safety, Sanitation and Hygiene

7 Sep 2018

Part of the National Nutrition Week in the first week of September, the event helped create greater awareness on the choices of food we eat, understanding the concepts of food safety, personal hygiene, equipment maintenance, etc. The presentations also touched upon the need for proper licensing from Food Safety and Standards Association of India (FSSAI) for food vendors and companies, and ended with the dictum, 'choose wisely and eat right for a safe life'.

Healthy Eating > Active Living

23-24 Mar 2019

A part of the practical course in the subject, Nutrition Through Life Cycle, the two-day event was aimed to educate the communities around us on the huge impact the food we eat has on our health. To facilitate a healthy discussion on this, scores of members of staff at the University were surveyed on various parameters such as stress, frequency of meal

consumption, regularity and quality of sleep, presence of any ailments, type of work, working hours and work pressure, frequency of illness, hospitalization, intake of medicines and lifestyle.

The importance of diet and nutrition in combating the health concerns were then addressed through talks, videos, presentations and discussions.

Management and Commerce

Six Sigma

28-29 July 2018

Six Sigma is a data driven methodology to reduce defects and variability in a process. The workshop trained the students in all aspects of famous Define Measure Analyse Improve Control (DMAIC) workflow, one of the core techniques behind any process improvement, particularly in Six Sigma.

It equipped them with all the tools and skills to carry out a quality improvement intervention using six sigma methodology, end-to-end. The students subsequently took on up live projects at the University or sister institutions and completed a project using the DMAIC workflow.

External experts and guests from: The World Bank

Design thinking

14 Jul 2018

Inspiration to Ideation to Implementation, the Design Thinking process came to life at SSSIHL when students learnt how to use it to fulfill the human needs for a product of service.

In groups, they brainstormed on how to get to the root cause of problems, ideate, and find solutions using the best technology available.

One of the speakers best summarized the learning process as: Start with the why, make to learn, flare before focus, seek a diverse perspective and master visual sense making.

External experts and guests from: Mercedes-Benz, Darden School of Business, University of Virginia

Healthcare Sector: Trends, Strategies and Practices

11 Aug 2018

The workshop served as a genesis for the study of Healthcare Management by MBA students, as an elective. Speakers touched upon the large view of the Indian healthcare sector and its challenges, such as a serious shortage of necessary skilful administrators, despite the high supply of qualified doctors. Legal aspects of healthcare administration were also touched upon. The workshop ended with a panel discussion on the multiple dimensions of the healthcare ecosystem. Students were left to ponder with many questions, such as the pursuit of healthcare versus a health career.



External experts and guests from: Dr. Mohan's Diabetes Specialities Centre, Maulana Azad Medical College, Postgraduate Institute of Medical Education and Research, GE Healthcare, Tata Trusts, SSSIHMS, Mylan, United Care Development Services (UC), HCITExpert Blog

Towards Excellence in Teaching and Research

12-13 Jan 2019

The faculty and Doctoral Research Scholars of the department came together for this breakout session that included insights such as Teaching Excellence: What Does It Entail, Designing and Delivering a Course, The Role of Technology in Classroom: Pedagogical tools and techniques, Teaching With Cases: Fostering Participant-Centred Learning, Teaching Without Cases: What Can We Do, and, Evaluating the Teacher and the Taught.

External experts and guests from: Strategy & Innovation Consulting

Values and the World of Business

16 Feb 2018

The symposium saw a galaxy of dignitaries and eminent personalities from different walks of life come together to discuss the importance of values in the world of business. The discussions centred around three areas: values in a valuation-driven world, values-based leadership and values in a competitive environment.

Deliberations such as the role of the family in shaping values, and how business leaders often lost their moral compass at the 80% mark in the chase for higher and higher dreams, took centre stage.

Participants shared their professional experiences and advised students to reflect on the decisions they make on a day-to-day and ask themselves whether they would sleep in peace with them.

External experts and guests from: Ambassador of Japan to India, Aditya Birla, ET Now, Business Today, HDFC, Airworks, Strategy Garage, B-PAC, Ola

Know Your Competencies

12 Mar 2019

The workshop helped students of final year MBA programme recognize their innate competencies (including skills, personal strengths and other abilities), which will guide them make the right professional choices in the future.

They undertook the Myers Briggs Type Indicator (MBTI) and the Saville Competency assessment psychometric tests. Following this, the facilitators offered consultation interventions to make students understand their personality type, strengths and weakness. The psychometric portfolio creation and successive discussions during the workshop held the students energized and enthusiastic. In the end, the workshop provided the students with a platform to explore the innate competencies and match their capabilities with business opportunities.

External experts and guests from: Anahat

Publishing Research

31 Mar 2019

A Faculty Development Program (FDP) that it emphasized on how to convert research into a good manuscript for publishing in leading journals of the field. The programme was structured into two modules. It covered topics such as Warming up on the topic, Setting the stage and expectations, Key metrics for research careers, What makes a good manuscript, Article Types, Publication outlets and standards, Key metrics in choosing a good and relevant journal, Review process and Key challenges in publishing research.

External experts and guests from: Indian Institute of Technology, Madras, The World Bank

English Language and Literature

Expert-alumni Interaction Series

17 Mar 2019

The session highlighted the necessary skills and communicative competence needed in Teaching English as a Second Language (TESL). The invited experts gave a brief overview of the concepts, techniques and methods in classroom for recognizing and managing the communicative needs of the English Language Teaching (ELT) student.

This included necessary reading skills, various creative techniques for vocabulary building, a new outlook for writing lesson plans, various kinds of tests and principles of testing and Testing and Evaluation.

External experts and guests from: Christ University, Bangalore, Regional Institute of Education (RIE) Mysore

Bespoke

Value Orientation on Higher Education

7 Mar 2019

The symposium - a part of the Golden Jubilee celebrations at the Brindavan Campus, SSSIHL - witnessed a galaxy of distinguished academicians, administrators and other distinguished personalities sharing their thoughts on the vital issue of values and higher education.

The keynote addresses and round-table discussions focused on the three sub-themes of Eternal values in a changing society, Values and Higher Education - perspectives and challenges, and, Millennials and Higher Education.

Topics debated included: The unchangeable essence of values, Transmitting values, Integrating values into university curricula in a seamless manner, The context for value transmissions in our educational institutions and the academic culture that should foster the right value choices, and, How millennials can use the world's interconnectedness as an opportunity to be more tolerant and open-minded.

External experts and guests from: Jain University, Central University of Himachal Pradesh, Centre for Education, Innovation and Action research, Tata Institute of Social Sciences, University of Mumbai, Karnataka Knowledge Commission, Karnataka State Innovation Council

Anantapur Campus @ 50 Golden Jubilee Celebrations

7 Mar 2019

To mark the completion of 50 years of the educational mission of Bhagawan Sri Sathya Sai Baba, which commenced with the opening of a Women's College at Anantapur on 22 July 1968, the Anantapur Campus of the Institute - the erstwhile Sri Sathya Sai Arts and Science College (for Women) Anantapur - organised a cultural programme (a couple of dances, and a play based on the life and teachings of Shirdi Sai Baba, entitled, Our Beloved Sadguru Sai) at the Campus on 8 July 2019.

The extended commemorative celebrations were subsequently held at Prasanthi Nilayam on 21 July. The programme, which was attended by 3000 alumni, commenced with a procession led by representatives of fifty batches of students, from India and abroad, who have passed out from the portals of this sacred institution. Prof. (Miss) Rajeshwari C Patel, Director of the Campus (and an alumna) while welcoming the audience, pledged (on behalf of the students) to live up to the highest ideals laid down by Bhagawan Baba. The programme comprised vocal music offerings, talks by the Chancellor of the University and two former students. This was followed by a felicitation ceremony in which former Vice Chancellors, Principals, Directors, Controller of Examinations and Wardens were honoured.

Several dignitaries associated with the Sri Sathya Sai Seva Organizations and other Sai education institutions were present on the occasion.



Contributions & Participation

Faculty

Mathematics and Computer Science

Dr. K S Sridharan

Invited Talk on Introduction to Artificial Intelligence and Machine Learning, Faculty Development Programme on Artificial Intelligence, Machine Learning and Deep Learning: Research and Applications perspectives, PSG College Technology, 22-28 Oct 2018.

Sri Darshan Gera

Resource Person, conducted a Hands-on session on Pytorch and delivered a talk on Introduction to Deep learning (DL): What, Why and How and practical aspect of Deep Learning, Faculty Development Programme on Artificial Intelligence, Machine Learning and Deep Learning: Research and Applications perspectives, PSG College Technology, 22-28 Oct 2018.

Resource person, Workshop on Python programming with Hands-on, National Arts & Science College, Chennai National Arts and Science College, Avadi, Tamil Nadu, 13 Aug 2018.

Dr. Ajith Padyana

Recognition and honoured by National Institution for Transforming India (NITI) Aayog, Government of India as a Mentor for Change to promote Research and Innovation in young Indian minds. Delivered several talks on Innovative Thinking to high school teachers and students, Academic Year 2018/19.

Dr. Pallav Kumar Baruah

Resource Person, Faculty Development Programme on Artificial Intelligence, Machine Learning and Deep Learning: Research and Applications perspectives, PSG College Technology, 22-28 Oct 2018.

Dr. S Balasubramanian

Resource person, Workshop on Python programming with Hands-on, National Arts & Science College, Chennai National Arts and Science College, Avadi, Tamil Nadu, 13 Aug 2018.

Invited Talk on Recent Trends in Machine Learning and Importance of Python Programming, faculty of Chennai National Arts and Science College, 14 Aug 2018.

Received the Best Paper Award for the paper, Layer Out: Freezing Layers in Deep Neural Networks, presented at 1st International Conference on Machine Learning, Image Processing, Network Security and Data Sciences (MIND 2019), NIT Kurukshetra, 3-4 Mar 2019.

Dr. Srinath M S

Visiting Researcher, Dept. of Combinatorics and Optimization, Faculty of Mathematics, University of Waterloo, Canada for a collaboration with Prof. David Jao, Professor, Faculty of Mathematics, University of Waterloo, Canada, Mar - May 2019.

Sri V Bhaskaran

Attended the Second Workshop on Software Challenges to Exascale Computing (SCEC 2018), 13-14 Dec 2018, New Delhi

Sri B Venkatramana

Attended a Faculty Development Programme on Blockchain Application Development Using Hyperledger, Dept. of Computer Science (in association with IBM India), Ramaiah Institute of Technology, Bangalore, 28 Jan - 2 Feb 2019.

Physics

Dr. Krishna Chaitanya V

Technical Program Committee member, International Conference on Fiber Optics and Photonics 2018, Indian Institute of Technology, New Delhi, 12-15 Dec 2018.

Dr. Gowrishankar R

Invited Examiner for Physics and Electronics Practical Exams, S K University, Anantapur, Andhra Pradesh, 3-4 May 2018, 12-13 Dec 2018.

Invited Examiner for Ph.D., Jawaharlal Nehru Technological University (JNTU), Anantapur, Andhra Pradesh, 7 Aug 2018.

Prof. S Siva Sankara Sai

Attended the Twelfth IEEE International Conference on Advanced Networks and Telecommunication Systems (IEEE-ANTS), Indore, 16-19 Dec 2019.

Attended the Fourth WHO Global Forum on Medical Devices (Increasing Access to Medical Devices), Visakhapatnam, 13-15 Dec 2019.

Sri Muralikrishna Molli

Attended the 63rd DAE Solid State Physics Symposium (DAE-SSPS 2018), Guru Jambheshwar University of Science and Technology (GJUS&T), Hisar, Haryana, 18-22 Dec 2018.

Sri Abishek H

Attended The International Conference on Fiber Optics and Photonics, Indian Institute of Technology, Delhi, 12-15 Dec 2018.

Chemistry

Dr. G Nageswara Rao, Dr. Nanduri Srinivas, Sri Swayamsiddha Kar

International Patent: Swayamsiddha Kar, Nageswara Rao G., Srinivas Nanduri; Spirobibenzopyrans and Analogues as Multitherapeutic Agents; Publication number: WO/2018/229665; Publication date: 20 December 2018. URL: <https://patentscope.wipo.int/search/en/search.jsf>

Dr. (Mrs.) V Prathyusha

Attended a Teachers Training Programme (refresher course) in Chemistry, Talent Development Centre, Indian Institution of Science, Challakere, Karnataka, 22 Nov to 12 Dec 2018.

Biosciences

Mrs. B Anusha

Presented a poster at the National seminar on Current Status and Future Prospects in Life Science Research (CSFPLR-2019), Kuppam University, Andhra Pradesh, 28 Mar 2019.

Dr. B E Pradeep

Resource Person, Infectious diseases and anti-microbial resistance (AMR) for the Scientific validation of lifestyle and environment, during Kumbha bath & Kalpwas, Prayagraj Allahabad, Vachaspati Sabhagar, Shri Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeetha, New Delhi, 21 Dec 2018.

Invited Lecture on Insight into the Antibiotic Resistance Mechanisms employed by Gram Negative Bacteria (*Escherichia coli* and *Acinetobacter baumannii*) and development of an antibiotic resistance prediction model for patients with urinary tract infection, National Conference Drug Resistance - Challenges in Drug discovery, Raghavendra Institute of Pharmaceutical Education & Research (RIPER), Anantapur, Andhra Pradesh, 27 Oct 2018.

Sri A S Vishwanathan

Attended ScienceComm'18 India, a Swissnex India conference, National Centre for Biological Sciences (NCBS), Bangalore, 27 Sep 2018.

Attended a STEM Teacher Training Workshop on Research Based Pedagogical Tools (Level-2), Centre of Excellence in Science and Mathematics Education, Indian Institute of Science Education Research, Pune, 17-19 Jan 2019.

Dr. S Venketesh

Attended the 10th Annual meeting of Proteomics Society, India (PSI) & International Conference on Proteomics for Cell Biology and Molecular Medicine, National Centre for Cell Science (NCCS), Pune, 12-14 Dec 2018.

Food and Nutritional Sciences

Prof. (Mrs.) B Andallu

Invited lecture on Isolation, identification and bioactivity assessment (in vitro) of phytochemicals at the UGC-sponsored National Seminar on Current Status and Future Prospects in Life Science Research, Dept. of Biotechnology, School of Herbal Studies and Natural Sciences, Dravidian University, Kuppam, Andhra Pradesh, 28-29 Mar 2019

Chairperson for a Scientific Session at the UGC-sponsored National Seminar on Current Status and Future Prospects in Life Science Research, Dept. of Biotechnology, School of Herbal Studies and Natural Sciences, Dravidian University, Kuppam, Andhra Pradesh, 28-29 Mar 2019.

Dr. (Mrs.) Ambati Padmaja

Paper Presentation (and First Prize) on Extraction, Analysis and Utilisation of Passion Fruit Peel Pectin presented at the National Conference on Challenges and Sustainable Approaches towards Food and Nutrition Security - A Global Perspective, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, Tamil Nadu, 7-8 Dec 2018.

Dr. (Ms.) Meera Manikkavachakan

Best poster Presentation on Development and Quality Evaluation of Pea Flour Incorporated Millet Cookies, India's Transition from Food Security to Nutrition Security, 50th Annual International Conference of Nutrition Society of India, ICMR - National Institute of Nutrition, Hyderabad, 15-17 Nov 2018.

Dr. (Miss) N Srividya

Attended an International Symposium on Understanding the Double Burden of Malnutrition for Effective Interventions, International Atomic Energy Agency (IAEA), Vienna, Austria, 10-13 Dec 2018.

Attended an International Symposium on Fats in Maternal and Child Health Nutrition - Indian Context, ICMR - National Institute of Nutrition, Hyderabad, India, 18 Sep 2018.

Dr. (Mrs.) M Srijaya, Dr. (Ms.) Meera Manikkavachakan

Attended an International Symposium on Fats in Maternal and Child Health Nutrition - Indian Context, ICMR - National Institute of Nutrition, Hyderabad, India, 18 Sep 2018.

Management and Commerce

Sri S Sai Manohar

Resource Person, Induction programmes for M.B.A. and M.Com. students, G T Institute of Management Studies and Research, Bangalore, 14 Nov 2018.

Invited Speaker, Orientation program for students, Sai Samskruti Vaibhavam, College of Nursing and Allied Health Sciences, Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Whitefield, Bangalore, 5 Sep 2018.

Prof. (Miss) Ch Radhakumari

Received Excellent Paper award for Best Content and Presentation for the research paper, Development of Ethereum-based Blockchain for Implementation in Housing Sector, International Conference on Business Management & Social Innovation, Bangalore, 4 Nov 2018.

Dr. Sanjay Mahalingam

Invited to conduct a workshop for executives, Inside Out: Spirituality at workplace, Thryve Digital, Chennai, 5 Oct 2018.

Dr. Sayee Manohar K

Attended a symposium on Rethinking of Globalization: Economy and Development, Awareness in Action, Hyderabad, Bangalore, 30 Jun 2018.

Attended a National-level Workshop on Data Analytics using R Studio, Dept. of Management Studies, Kongu Engineering College, Erode, Tamil Nadu, 10-12 Aug 2018.

Attended a Faculty Development Programme on Case writing and Analysis, CMS Business School, JAIN (Deemed to be University), Bangalore, 27-28 Nov 2018.

Attended a Faculty Development Programme on Design Thinking, A Management Perspective, RV institutions and HEM&RA Consulting, Bangalore, 29 Mar 2019.

Sri S Sai Manohar

Attended a Faculty Development Programme on Blended Learning Pedagogy using MOOCs, Indian Institute of Management, Bangalore, 23 Feb 2019.

Miss Aparna V

Attended a Faculty Development Programme on Hands-on Data Analysis using 'R' in Journal Publication, Shri Dharmasthala Manjunatheshwara Institute for Management Development, Mysore, 8-9 May 2019.

Economics

Dr. G Raghavender Raju

Peer Reviewer for the journal, Journal of Economic Policy and Research, 23 May 2019.

Sri Dinesh Kumar Choudhury

Resource Person, Workshop on Economic Analysis for Managerial Decision Making, K L N College of Engineering, Pottapalayam, Madurai, Tamil Nadu, 24-25 Sep 2018.

Sri Rajabhushan Jagadish Nayak

Attended a workshop in Frontiers of Research in Indian Economy: Emerging Issues, Theoretical Approaches, Data and Methods, Institute of Development Studies, Kolkata, 11-15 Mar 2019.

English Language and Literature

Dr. (Miss) P L Rani

Invited Talk on Education: Its Power and Purpose as Guest of Honour, Sri Chaitanya Degree College, Anantapur, Andhra Pradesh, 7 Mar 2019.

Dr. Aruna Kumar Behera

Resource Person, ELTAI Chapter Members' Conclave, Sambhram Academy of Management Studies, Bangalore, 16 May 2019.

Attended ICON-2018 - a Multidisciplinary International Conference on Innovative & Creative Strategies for Sustainable Growth, New Horizon College, Bangalore, 16 Oct 2018.

Attended an Orientation Workshop on Debilitated English Learner Syndrome (DELS) and the role of Neuro-Linguistic Programming in Language Teaching, Regional Institute of English, South India (RIESI), Bangalore, 8 Aug 2018.

Education

Dr. (Mrs.) P Lavanya

Attended a Refresher course on Gender studies, UGC-HRDC, SV University, Tirupati, 25 Feb - 16 Mar 2019.

Sub-departments and Languages

Dr. N Venkatesha Rao

Received a special award, Vyasaraja seva dhurina, Navavrindavana, for Popularizing classical Sanskrit works of Vyasatirtha (Raja guru of Krishnadevaraya) with special reference to Vyasatraya, by Sri Vyasaraja Samsthanam, 25 Mar 2019.

Dr. (Mrs.) M Praphulla

Resource Person to speak on the topic, Balkavisaranyamu - Rachanoddesamu, National Seminar on Telugu Bhasha Sahithyalu - Gidugu Seva, Andhra Pradesh Central University, Anantapur, 29 Aug 2018.

Resource Person to speak on the topic, Kandukurivari Abhijnana Sakunthalamu, the National Seminar on Kandukuri Sahithyam - Samskaranodyamam, Andhra Pradesh Central University, Anantapur, 1-3 Mar 2019.

Doctoral Research Scholars

Mathematics and Computer Science

Sri V Sai Raam

Participated in the Doctoral Consortium, The Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), Hyderabad, 18-22 Dec 2018.

Sri Rahul Raju Pattar

Participated in NCMW Contact and Symplectic Geometry, Indian Institute of Science Education and Research (IISER) Bhopal, 3-14 Dec 2018.

Sri Hirak Doshi

Invited Talk on Robust Optical Flow Implementations, International Workshop on Modeling Dynamics, Statistical Inference and Prediction of Infectious Diseases (MODSIP), 12-15 Aug 2018.

Physics

Miss Lavanya Rathi P

Attended a workshop, X-Raydiat Hyderabad, Hyderabad Central University (HCU), Hyderabad, 14 Nov 2018.

Poster Presentation, International Winter School on Frontiers in Materials Science, Jawaharlal Nehru Centre for Advance Scientific Research (JNCASR), Bangalore, 3-7 Dec 2018.

Attended a workshop on Science and Engineering of Materials using Ion Beams and Gamma Rays, Variable Energy Cyclotron Centre (VECC), Kolkata, 28-29 May 2019.

Sri P Saijagannadha Bharadwaj

Attended the International Winter School on Frontiers in Materials Science, Jawaharlal Nehru Centre for Advance Scientific Research (JNCASR), Bangalore, 3-7 Dec 2018.

Poster Presentation, 63rd DAE Solid State Physics Symposium, Guru Jambheshwar University of Science & Technology, Hisar, Haryana, 19-23 Dec 2018.

Miss Anjana Biswas

Poster Presentation, International Winter School on Frontiers in Materials Science, Jawaharlal Nehru Centre for Advance Scientific Research (JNCASR), Bangalore, 3-7 Dec 2018.

Attended a workshop on Science and Engineering of Materials using Ion Beams and Gamma Rays, Variable Energy Cyclotron Centre (VECC), Kolkata, 28-29 May 2019.

Chemistry

Miss Sai Kiran M

Poster Presentation on Defluoridation using polymer metal composites, International Winter School on Frontiers in Materials Science, Jawaharlal Nehru Centre for Advance Scientific Research (JNCASR), Bangalore, 3-7 Dec 2018.

Sri Nitesh Tamang

Recipient of the National Fellowship and Scholarship for Higher Education of ST Students, Jun 2018.

Sri Prashant Rai

Attended a Workshop on Advanced Pharmaceutical Analytical Techniques, Dr. Reddy's Institute of Life Sciences (DRILS), Hyderabad, 8-9 Apr 2019.

Sri Ram Murthy

Attended a National Conference on Applied materials and Applications Corrosion Inhibition of Mild Steel in Hydrochloric Acid Solution of novel Organosulfur Compounds, Auxillium Women's College, Vellore, Tamil Nadu, 7 Sep 2018.

Sri Sai Prasad Nayak

Poster Presentation on Detection of a relevant cancer biomarker using plasmonic silver nanoparticles, International Winter School on Frontiers in Materials Science, Jawaharlal Nehru Centre for Advance Scientific Research (JNCASR), Bangalore, 3-7 Dec 2018.

Dr. K Naga Sai Visweswar

Attended a Hands-on training for Development of HPLC Methods, at Centre for Process Research and Innovation, Dr. Reddy's Institute of Life Sciences (DRILS), Hyderabad, 28 Jan - 8 Feb 2019.

Sri Rokkam Siva Kumar

Attended a Workshop on Advanced Pharmaceutical Analytical Techniques, Dr. Reddy's Institute of Life Sciences (DRILS), Hyderabad, Telangana, 8-9 Apr 2019.

Sri Swayamsiddha Kar

International Patent: Swayamsiddha Kar, Nageswara Rao G., Srinivas Nanduri; Spirobibenzopyrans and Analogues as Multitherapeutic Agents; Publication number: WO/2018/229665; Publication date: 20 December 2018. URL: <https://patentscope.wipo.int/search/en/search.jsf>

Recipient of Senior Research Fellowship (SRF) from the CSIR sponsored project, Synthesis of Novel Andrographolide Derivatives as Potential Anticancer & Antibacterial Agents (No.02(O304)/17/EMR-II)

Sri Chelli Sai Manohar

Attended the International Winter School on Frontiers in Materials Science, Jawaharlal Nehru Centre for Advance Scientific Research (JNCASR), Bangalore, 3-7 Dec 2018.

Biosciences**Sri Aiyer Kartik Satyanarayan**

Attended the 4th Asia Pacific International Society of Microbial Electrochemistry and Technology (AP-ISMET) Meeting on Bioelectrochemical and Electrochemical Approaches for Decentralized Sanitation, BITS Pilani, Goa, 13-16 Nov 2018.

Sri Thota Sai Manohar

Poster Presentation on Multimodal Imaging of Huntington's Disease using Radiological Techniques, ISMRM Workshop on Accessible MRI for the World, India International Centre, New Delhi, 29-31 Mar 2019.

Plenary talk on Metabolic Re-wiring Modulates Amyloid Formation in Huntington's Disease, Bangalore Neurological Society Meeting, Bangalore, 2 Feb 2019.

Food and Nutritional Sciences**Miss Ashrita C Haldipur**

Attended an International Symposium on Understanding the Double Burden of Malnutrition for Effective Interventions, International Atomic Energy Agency (IAEA), Vienna, Austria, 10-13 Dec 2018.

Attended an International Symposium on Fats in Maternal and Child Health Nutrition - Indian Context, ICMR - National Institute of Nutrition, Hyderabad, 18 Sep 2018.

Miss N Saiharini

Paper Presentation (and First Prize) on Extraction, Analysis and Utilisation of Passion Fruit Peel Pectin presented at the National Conference on Challenges and Sustainable Approaches towards Food and Nutrition Security - A Global Perspective, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, Tamil Nadu, 7-8 Dec 2018.

Management and Commerce**Sri Saikrishnan S**

Attended the TAPMI-MAX PLANCK-SOTON Winter School on Bounded Rationality, T A Pai Management Institute (TAPMI), Manipal, 14-20 Jan 2019.

Sri U Pranav

Attended the Management Development Programme on Machine Learning Algorithms for Business Decision Making, Christ University and Analytics Society of India, Bangalore, 15-16 Dec 2018

Undertook a course on Data Science, Analytix Labs, Bangalore, Jul-Nov 2018.

Miss Padmalalitha T V

Attended a National Level Workshop on Research Methodology, Statistical Data Analysis and Interpretation, Institute for Statistics and Analytical Research, Chennai, 21-23 Sep 2018.

Attended the Management Development Programme on Machine Learning Algorithms for Business Decision Making, Christ University and Analytics Society of India, Bangalore, 15-16 Dec 2018

English Language & Literature**Miss Priyamvada C**

Completed a Swayam NPTEL Online Certificate course, Introduction to Literary Theory, affiliated to the Indian Institute of Technology, Kanpur, Aug-Sep 2018.

Miss Ponapalli Prasanti Prabha

Completed a Swayam NPTEL Online Certificate course, Introduction to Literary Theory, affiliated to the Indian Institute of Technology, Kanpur, Aug-Sep 2018.

Completed a Swayam NPTEL Online Certificate course, Postmodernism in Literature, affiliated to the Indian Institute of Technology, Madras, Feb-Apr 2019.

Miss Swathi Metla

Completed a Swayam NPTEL Online Certificate course, Postmodernism in Literature, affiliated to the Indian Institute of Technology, Madras, Feb-Apr 2019.

Miss Umadevi V S

Completed a Swayam NPTEL Online Certificate course, Introduction to Literary Theory, affiliated to the Indian Institute of Technology, Kanpur, Aug-Sep 2018.

Students

Organizational Visits

At the end of each academic year, final year graduating students from various departments go on official visits to reputed organizations to get a feel of how what they learn in the classroom is applied in the real world. Students are accompanied by a few faculty members on these trips. During the academic year 2018/19, these included:

Physics

I M.Tech. in Optoelectronics & Communications students, Bangalore, 16-17 Apr 2018.

Organizations visited: CISCO, Tejas Networks Ltd., FCI OEN Connecters Ltd., Analog Devices India.



Food & Nutritional Sciences

I and II M.Sc. in Food and Nutritional Sciences students, Anantapur Dist., Andhra Pradesh, 11-14 Mar 2019.

Organizations visited: National Institute of Nutrition, Institute of Hotel Management Catering Technology & Applied Nutrition, Indian Grain Storage Management and Research Institute, Apollo Health City, The Telangana State Dairy Development Cooperative Federation Ltd., Telangana Foods, Heemankshi Bakers Pvt. Ltd., State Food Laboratory, CFTRI-CSIR Resource Centre.



Management & Commerce

Anantapur Campus:

I M.B.A. students, Hosur, Tamil Nadu & Bangalore, 9-10 Aug 2018.

Organizations visited: TVS Motors, Sai Vishram Business Hotel

I and II M.B.A. students, Tamil Nadu, 26 Dec 2018.

Organizations visited: Villages adopted under the Srinivasan Services Trust (SST) of TVS Motors for inclusive development. The villages included Pedhakondapalli and Muthur in the Krishnagiri district.

I M.B.A. students, Puttaparthi, Andhra Pradesh, 5 Mar 2019.

Organizations visited: Caseificio Italia, a cheese manufacturing factory.

Prasanthi Nilayam Campus:

I M.B.A. students, Hosur, Tamil Nadu & Bangalore, 10 Aug and 1 Sep 2018.

Organizations visited: TVS Motors, Sai Vishram Business Hotel.



National Examinations

A high percentage of SSSIHL postgraduate students qualified in national exams such as the GATE/JEST or the CSIR-UGC NET in 2018/19. The list below includes the national rank for each exam.

Artatrana Suna (Mathematics)

(GATE) 102 (CSIR UGC-NET for JRF)

K D S S Murari (Mathematics)

438 (CSIR UGC-NET for JRF)

Jitendra Kumar Chadar (Computer Science)

11708 (GATE) (CSIR UGC-NET for JRF)

Geeth Govind S (Computer Science)

10710 (GATE) UGC-NET (LS)

T R Sai Natarajan (Computer Science)

713 (GATE)

A V S Bharadwaj (Computer Science)

27 (CSIR UGC-NET for JRF)

Sai Pramod (Computer Science)

3415 (CSIR UGC-NET for JRF)

Vasista Durga Prasad (Computer Science)

5318 (CSIR UGC-NET for JRF)

J Kaushik (Physics)

746 (GATE)

Amar M V (Physics)

2095 (GATE)

Sreeram S (Physics)

2095 (GATE)

Judhistir Shamal (Physics)

2298 (GATE)

Hariharan M (Chemistry)

529 (GATE) 58 (CSIR UGC-NET for JRF)

M S Vijaya Bhaskar (Chemistry)

947 (GATE)

Sumiran Tamang (Chemistry)

6892 (GATE)

Sudam Bhoi (Biosciences)

155 (CSIR UGC-NET for JRF)

Kesavan M (Computer Science)

UGC-NET (LS)

Ediguttu Saikiran (Computer Science)

80 UGC-NET (LS)

Sandeep Sahu (Computer Science)

48 UGC-NET (LS)

Atulya Mahanta (Management)

UGC-NET (JRF)

Jagadeeswara C B (Management)

UGC-NET (JRF)

Medapati Mounika (Management)

UGC-NET (LS)

Yerragunta Rahul Reddy (Management)

(NET-LS)

Rinil Khatri (Management)

(NET-LS)

Manasali Sai Kumar (Management)

(NET-LS)

Pranay Sai Bharadwaja S (Management)

(NET-LS)

Saikrishnaa R (Management)

(NET-LS)

Sai Aditya D (Management)

(NET-LS)

Sai Shankar Pradhan (Management)

(NET-LS)

S Sai Shyam Sundar (Management)

(NET-LS)

Saiprashanth G (Management)

(NET-LS)

Atulya Mahanta (Management)

(NET-LS)

Jagadeeswara C B (Management)

(NET-LS)

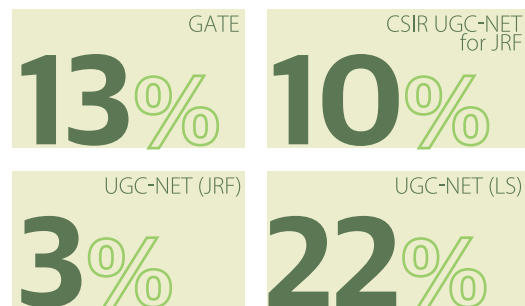
Munthala Sri Sai Kiran (Economics)

(NET-LS)

Suraj Kumar Das (Economics)

(NET-LS)

CSIR (Council of Scientific & Industrial Research) | **JRF** (Junior Research Fellowship) | **NET** (National Eligibility Test) | **LS** (Lectureship) Graduate Aptitude Test in Engineering



National Exams

This data pertains to final year postgraduate students who attempted these exams

GATE: Graduate Aptitude Test in Engineering

CSIR: Council of Scientific & Industrial Research
UGC: University Grants Commission
NET: National Eligibility Test

Research Highlights

Sciences

Mathematical Modelling

In the mathematical modelling area, research was carried out on ecological models with specific applications to pest control and biological conservation. For example, additional food supplements as a tool for biological conservation of Predator-Prey Systems was studied extensively. Predictive modelling for disease dynamics and control measures specifically with diseases such as Dengue and Leprosy was done.

Artificial Intelligence (AI) and Actuarial Techniques

A framework integrating both AI and Actuarial Techniques was proposed and the fraud detection model was developed using Gradient Boosting Method. The results obtained were quite promising with the F1-Score of 98.05% and an accuracy of 99.68%. The results were validated using extreme value theory (EVT), an actuarial technique. Initially, the model was developed for motor insurance and later the same was customized for health insurance.

Neural networks with two fully connected layers were used for analyzing and predicting the factors which were used for calculating the Key Performance Indicators (KPIs). The KPIs were obtained for the projected factors and the inference was done for five different non-life insurers in India, based on the public disclosure data available with insurance supervisors.

Machine and Deep Learning

Research was conducted on Deep Neural Networks Architectures to reduce huge amount of computation during the training phase, minimize the effect of overfitting, etc. Novel architectures and strategies for regularization were proposed keeping in mind the trendy applications in the area.

Studies have been done using Convolutional Neural Network (CNN) models such as U-net and Alexnet on renal dataset for segmentation and classification of renal images. Data preprocessing on kidney images has been carried out using U-net architecture. A detailed study on fine tuning the hyper parameters that govern the model performance and test accuracy has been carried out. A dice coefficient of 83% in creating masks for renal data using U-net was achieved. Experiments were performed on AlexNet and the best accuracy achieved was 94.75%.

It has been accepted that the various facets of medicine are not deterministic. Clinicians must weigh not just a set of fixed benchmarks while determining optimal patient care, but

must also incorporate a growing set of health data generated by their patients. The future of personalised healthcare lies in predictive analytics that utilizes algorithmically-derived probabilities to augment patient care. Such an approach has immense potential in a condition like Chiari 1 malformation (CM1) that is characterized by heterogeneous presentations, management options and post-surgical outcomes. Various predictors were identified and reviewed in relation to CM1 and Machine Learning algorithms were employed for predicting outcome after CM1 surgery.

Small Area Imaging Gamma Camera (SAI-GC)

Nuclear Medical Imaging is a special branch of Radiology which gives the functional imaging of the internal organ that is being examined for diagnostic purposes. Small Area Imaging Gamma Camera (SAI-GC) has been designed and fabricated as a part of ongoing DST funded project. This portable and higher resolution Gamma Camera, based on CZT detector technology, has been initially validated using the geometric and organ phantoms to study the real time issues. Subsequently, all the issues related to real time patient imaging were resolved. The SAI-GC was further validated and verified on the clinical front at HCG Cancer Hospital, Bangalore, after obtaining the necessary Ethics Committee approvals. Validation of SAI-GC has been completed on 32 Thyroid subjects to identify malfunctions such as Thyroid cancer, Nodal Goiter, Hyper thyroid, Hypo Thyroid, Graves' Disease, Thyrotoxicosis and Thyroiditis.

Optical Coherence Tomography (OCT)

Optical Coherence Tomography (OCT), based on the principle of low-coherence interferometry, is an attractive non-invasive imaging methodology which has found wide acceptance in Ophthalmology since the 1990s, and in Cardiology in the 21st century. High costs limit OCT instruments to well-equipped tertiary care centers and research labs. Novel computational and acquisition techniques have been developed to enhance the utility of low-cost OCT devices. Two low-cost table-top OCT devices have been assembled, one suitable for ex-vivo static samples, and the other one was designed for imaging the eardrum. The cost of commercial OCT instruments lies in the range of ₹50-100 lakhs. The prototypes fabricated at SSSIHL are 50 to 100 times cheaper than commercial instruments, and mass production will help drive down the cost further.

Functional Materials and Composites (for piezoelectric, magnetic, thermoelectric and sensor based applications)

Novel Piezo-resistive polymer nanocrystal composites that could be used for sensor and transducer applications with superior performance were designed and fabricated. High

electrical energy storage density was achieved in materials using Ferroelectric fillers in functional polymer matrices along with low dimensional carbon nanostructures. Clay blended polymer nanocrystal composite films were fabricated and found to show enhanced Photorefractive properties. These films could be used as passive optical components utilizing their intrinsic nonlinear optical response.

Electronic structure calculations using density functional theory and the calculation of band structure dependent thermoelectric transport properties using the semiclassical Boltzmann transport theory were carried out in Full Heusler and Half Heusler alloys, Quaternary chalcogenides and Brownmillerites.

Simple ion-exchange method was used to grow metal nanocrystals in silicate and borate glass matrices. Silver (Ag), copper (Cu) and their binary, Ag-Cu nanocrystals were embedded successfully in glass matrices. The nonisothermal crystallization kinetic studies on Ag-ion exchanged silicate glasses have been carried out using differential thermal analyses (DTA). In order to understand the nuclear radiation effect on lead-free functional materials and their polymer composites, lead-free piezoelectric micro rods and their PVDF composites were prepared. Glasses, glass-nanocrystal composites and polymer composites are prepared for gas sensing applications. Highly dense (>7 g/cc) and transparent binary bismuth borate glasses were prepared and their gamma ray shielding properties were investigated. The gamma radiation shielding of transparent bismuth borate glasses was close to metallic lead and other lead-based glasses. Coffee-ring effect by different clay colloidal systems was investigated.

Tin doped nanomagnetites, $\text{Sn}_x\text{Fe}_{3-x}\text{O}_4$, were synthesized with various concentrations of Sn^{2+} ions ($x = 0.0, 0.2, 0.4, 0.6, 0.8, 1.0$) by co-precipitation method. XRD, VSM, TG-DTA, SEM-EDX and UV-Vis were used to characterize the structural, magnetic, thermal, and optical properties of $\text{Sn}_x\text{Fe}_{3-x}\text{O}_4$ nanoparticles. XRD confirmed the formation of the cubic spinel phase; Rietveld refinement of the XRD patterns revealed the cationic distribution. The M-H curves exhibited changes in saturation magnetization, coercive field, remanent magnetization and susceptibility, with increasing concentration of non-magnetic Sn^{2+} ions. The optical bandgap measurement of 3.9 eV classifies these materials to be semiconductors.

Titanate nanobelts were proved to be promising nanosorbents for defluoridation of drinking water. For quick and efficient removal of fluoride from water, high surface area titanate nanorods were found to be more efficient. Low cost 1-D nanotubes and their use in defluoridation of water were demonstrated. Surface modified, $\text{H}_2\text{Ti}_3\text{O}_7$ nanotubes with 0.1M Fe^{3+} and 0.05M Zr^{4+} ions for efficient fluoride removal from aqueous media at neutral pH were fabricated and characterized.

The design and development of functionalized graphene oxide-polymer composite as a versatile tool for oil spill removal, defluoridation, heavy metal adsorption, organic dye removal, and electrochemical sensor applications were carried out.

Point of Care Devices for Clinical Use

As a part of the ongoing projects on perinatal depression, neonatal jaundice, early detection of cardiac malfunction and dengue detection, more than 700 patients from Sri Sathya Sai General Hospital (SSSGH), Prasanthi Nilayam, Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Prasanthigram and SSSIHMS, Whitefield have been enrolled. The blood, saliva and urine samples from these patients were collected after obtaining informed consent. These samples were processed and stored appropriately. These samples were analyzed using standard hospital protocol/equipment and gold standard-HPLC to know the actual value to be compared with that from our proposed devices.

Dengue and heart disease detection devices underwent testing of their alpha models. The feedback was noted and appropriate modifications have been implemented in the fabrication of the beta version. The neonatal device was deployed at SSSGH, Prasanthi Nilayam for field trials. The device for monitoring depression is under fabrication and is planned to be deployed for field trials by the end of this year. Apart from this, new novel materials for SPCE emission enhancements were studied and the mobile phone-SPCE platform was optimized for the detection of Tannic acid in water sources. Simple, candle soot-based fractal nano carbon islands were coated and shown to be better spacer layers than other nanomaterials that are less ecofriendly due to their synthesis protocol.

Studies on Andrographolide

Andrographis paniculata is an Ayurvedic herb known as Kalmegh. It is also known as Nelavemu. Andrographolide, the main constituent of *Andrographis paniculata* (Acanthaceae) exhibited several promising biological properties. It was reported that andrographolide and its analogues possess anti-cancer, anti-inflammatory, anti-bacterial, anti-diabetic, anti-HIV, FXR antagonists and hepato-protective properties. In a recent study, it was found that Andrographolide possesses very good anti-venom properties through PLA2 inhibition.

Sequential Progressive Mutations Associated with Acquisition of Nitrofurantoin Resistance: A Study in Clinically Isolated Gram-Negative Bacteria

Nitrofurantoin is the drug of choice to treat uncomplicated UTIs. In this study, nitrofurantoin resistance and possible underlying mechanisms among 100 clinically isolated bacteria (53 resistant, 31 sensitive and 16 intermediate resistant to nitrofurantoin), comprising multiple gram-negative bacterial species were investigated. These isolates (44 *Escherichia coli*, 12 *Acinetobacter baumannii*, 6 *Enterobacter spp.*, 33 *Klebsiella spp.*, 2 *Proteus mirabilis* and 3 *Citrobacter koseri* isolated from SSSIHMS-Wfd) were analysed for the presence of *nfsA*, *nfsB*, *ribE*, *oqxA* and *oqxB* genes by PCR amplification. Further, a nitrofurantoin sensitive *E. coli* (NS30) was in vitro exposed to increasing concentrations of nitrofurantoin to understand the sequential progression of mutation accumulation through induction.

PCR amplification showed concordance with the resistance phenotype of the isolates. The analyses confirmed that colonies of NS30 had a surge in MIC from 32 µg/mL to ≥512 µg/mL due to sequential, stepwise induction of resistance with exposure to increasing concentrations of nitrofurantoin. Sequencing of *nfsA*, *nfsB* and *ribE* gene amplicons in the sensitive and resistant variants of NS30 revealed several mutations that were progressively acquired in the coding sequences of the resistant isolates including a stop codon in *nfsA* and *nfsB* genes. Acquisition of mutations in *nfsA* and *nfsB* genes with increasing concentrations of nitrofurantoin might have led to the emergence of nitrofurantoin resistance among previously sensitive bacteria.



Agar art: ATCC *Escherichia coli* 35218 (pale orange lines) and ATCC *Staphylococcus aureus* 25923 (white lines) streaked by using Nichrome loop on *Luria bertani* agar

Nutritional Biology and Metabolomics-based Investigations for Mitigating Life Style Disorders and Double Burden of Malnutrition

Metabolite profiling of nutrients and health promoting compounds in novel and indigenous food crops such as culinary and herbal microgreens; and pigmented rice varieties were carried out. Enzyme based mechanistic and in vitro assays have been also performed. Pigmented Indian rice varieties namely, Kattuyanam, Karupu kavani, bamboo rice and few others were ascertained to be beneficial for life style disorders such as diabetes. For addressing double burden of malnutrition, various microfarmed greens and herbs have been examined. Studies initiated using agronomic biofortification has resulted in enhancing the micronutrient density of radish and roselle microgreens.

Nutritional composition of wild edible mushrooms from the North Eastern regions of India was studied and found to be rich in protein, fiber and iron. These mushrooms also showed antioxidant, hypoglycemic and hypocholesterolemic activity under in vitro conditions.

Bio-Potential of Food Processing Waste for Value Addition in Foods

Culinary microgreens rich in micronutrients such as ascorbic acid, zinc, selenium, calcium etc. have been identified. Agronomic fortification has been successfully employed to enhance the micronutrient density of these novel crops with special reference to calcium in radish and roselle microgreens.

Nutritional and protein quality evaluation of 'Sai Protein' based formulations indicated that they could be used as a low-cost supplementary food for addressing malnutrition. It was found suitable to be used in government feeding programmes. The nutritionally enhanced SSSIHL-SAI protein formulation has been shared with Sri Sathya Sai General Hospital (SSSGH), Prasanthi Nilayam and is being distributed regularly to needy children visiting the paediatric ward.

Plant food processing waste (such as peel, seed and pomace from fruits and vegetables) by-products have been explored



as promising sources of biological active compounds. Studies have been done on characterizing the extracts and isolates from *Passiflora edulis* fruit for their chemical composition and biological activity. Naturally coloured jelly was prepared utilizing the extracted pectin from peel.

Evaluation of Antioxidant, Anti-Inflammatory and Antibacterial Potential of the Endophytic Fungi Isolated from *Bauhinia Purpurea*

The target of the study is to evaluate whether biomolecules produced by the endophytic fungi inhabiting this plant have anti-inflammatory, anti-bacterial, anti-oxidant properties. Sixteen endophytic fungal strains belonging to Ascomycetes were isolated from the leaves of *Bauhinia purpurea*. Morphological identification of all these sixteen fungi was done. They were found to be belonging to genera *Diaporthe*, *Colletotrichum*, *Phyllosticta*, *Fusarium*, *Xylaria* and *Alternaria*. Since four isolates showed reasonable anti-oxidant activity, their identification based on 18S rDNA sequencing was done. On that basis, they were identified as *Diaporthe phaseolorum*, *Diaporthe foeniculina*, *Alternaria citri* and *Fusarium graminearum*.

Crude extracts of these were also evaluated for antibacterial activity using resistant strains of *Escherichia coli* and *Pseudomonas aeruginosa*. The synergistic activities of these extracts in conjunction with antibiotics was evaluated.

Molecular docking studies were conducted with 45 known metabolites of *Diaporthe* species to evaluate their potential as RND efflux pump inhibitors.

Disease Biology

Multidisciplinary and multifaceted approaches were used to carry out an integrative analysis of patients suffering from Huntington's Disease and model system. In particular, biochemical, haematological, multimodal MRI imaging (MRI, MRS, DTI, ADC), PET Scan, EEG and VEP were used to understand changes in the brain. The results showed clinical changes in the brain that is characteristic of Huntington disease. MRS and PET Scan show metabolic deregulation in the affected region of brain. Yeast and mammalian cell culture and embryonic stem cell models were used to understand the mechanistic aspects. Metabolomic analysis of patients and model system showed changes in metabolomic profile compared to control. Using metabolomic addition experiments and gene knock out a role for metabolites in modulating amyloidogenesis has been conceived.

Management & Commerce

CSR in Secondary Education

One of the key areas that received impetus under Corporate Social Responsibility (CSR) was the promotion of education. While many companies have enthusiastically undertaken various activities in this area, a study of the annual reports of various companies has highlighted that a deeper connect is within the ambit of the corporates under CSR.

To achieve a higher degree of involvement of corporates with the secondary education sector, it is imperative that the challenges of the secondary education sector be identified and addressed. A meta-study of 70 articles shortlisted through systematic literature review to identify the challenges of the secondary education sector in India was carried out. The key challenges were classified under five major stakeholders of secondary education viz. students, teachers, infrastructure, leadership and administration, and community.

It was found that the key challenges identified could effectively be addressed through CSR as companies have the necessary expertise. The study, thus, identified available opportunities for corporates to have more meaningful engagement in the secondary education sector in India and contribute to national development.

Corporate Environmental Reporting

Corporate Environmental Reporting (CER) demands the disclosure of financial and non-financial indicators in corporate reporting, thus institutionalising the triple-bottom-line reporting approach (economic, environment and social). A study considering the information over a period of three years (2015-2018) along with thirty companies with a pollution index score of 40 and above was carried out to analyse the content of corporate environmental disclosures in annual reports of companies with respect to the Global Reporting Initiative (GRI) environmental indicators and to compare the application of GRI environmental indicators among select companies.

Thematic content analysis of the 90 annual reports of 30 companies indicated that the environmental reporting in India is unsystematic and non-comparable. Based on these findings an attempt was made to develop a framework to emphasise the inclusion of GRI Reporting principles at different stages of reporting, in order to bring in a structured approach while reporting data.

Sustainable Rural Development

A study was carried out by collecting data from 120 villages in the state of Andhra Pradesh for understanding the procedure of achieving sustainable development, in practice, and address the problems faced by people at the bottom of the pyramid, keeping income levels as the primary objective.

The findings from the study reinforced the thought that sustained rural development can only be achieved when the aspects of economic stability, infrastructure challenges, education, healthcare and social service are addressed.

Behavioural Aspects of Health Insurance

A scoping review of the field of behavioral economics that focused on health insurance was carried out using the five-stage framework provided by Arksey and O'Malley. A total of 120 studies were identified that met the eligibility criteria. From these studies, information pertaining to consumer behavior in health insurance market and means to channel consumer behavior were extracted.

The state of research of the field and found that 93% of the studies are based on samples drawn from western countries, 5% of the studies have used field experiments, 97% of the studies have used positivist research paradigm and more than half the studies have focused on just 5 behavioral factors. Building on these observations, the study provided directions for future research

Economics & Humanities

Financial and Macroeconomic Modelling

Financial and Macroeconomic Modelling relying on leading-edge techniques in statistics and econometrics has been employed to analyze India's Balance of Payments, Capital markets, Agricultural, Industrial and Services sectors, Global Financial Crisis on the Indian economy, Financial Development and Economic Growth in BRICS economies.

Systematic investigations were done in the area of Fiscal Consolidation and Sustainable Public Debt, taking India as a case study. The major thrust of the work was to examine the sustainability of fiscal policy by linking it with public debt. The study used macroeconomic modelling framework to attain its objectives: to examine and evaluate the size and growth of public debt, the way it is related to economic growth and how appropriate policies can be designed to moderate its adverse consequences. Focused on India for the period 1980 through 2016, the major thrust of the work was to examine the sustainability of fiscal policy by linking it with public debt.

Ibsenian Bildung: From Passivity to 'Constructivity'

This work was guided by the perception that unlike most of the studies which rightly justify Ibsen as a champion of individual rights, he should be given enough credit as a curator of social institutions as well. Therefore, the findings re-establish the enduring relevance of Ibsen's social vision through a thematic study involving a close analysis of the timeless characters of a few select plays from a fresh perspective. As a tangential approach among Ibsenian scholarship, this exploration unravels patterns of collective culture in which interdependence accentuates personal identity. This perusal through the kaleidoscope of Indian spirituality adds a different hue to the light of Ibsenian world.

Funded Research Projects

SSSIHL continues to pursue needs-based research that will help alleviate problems affecting the poorer sections of society.

During the academic year 2018/19, the total value of ongoing projects at the University was ₹8.54 Crore.

Mathematics and Computer Science

Big Data Analytics and High Performance Computing
Maestro Technology, USA

Physics

FIST (Fund for Improvement of Science & Teaching Infrastructure)
Department of Science & Technology (DST)

Design and Development of Small Organ Imaging Gamma Camera System
DST

Femtosecond laser Enabled Micro-fabrication of Micro-Total-analysis Optofluidic Systems (FEMTOS)
DST

FLAP-MED: Femtosecond laser Assisted Prototyping Micro Electro-Optofluidic Devices
DST

Design and development of Glass based optofluidic platform by Femtosecond Laser Micromachining
DST

Development of nanoadsorbents for treating fluoride contaminated water in and around the area of the University
Kurita Water and Environment Foundation, Japan

Chemistry

Water Treatment of Identified Physico-chemical parameters in the three mandals of Ananthpur district of Andhra Pradesh
4S Foundation

Synthesis of Novel Andrographolide derivatives as potential anticancer and antibacterial agents
CSIR

Surface Plasmon-Coupled Emission based Benchtop

Device for Cardiac Troponin T Quantification
DST - Instrumentation Development Programme (IDP)
Technology Development Programmes (TDP)

ANIRVID: A Cellphone based Point-of-Care Diagnostic Device to Evaluate the Effect of Alternative Therapeutic Interventions on Depression and Heart Ailments
Tata Education and Development Trust

Hand-held mobile for non-invasive monitoring of Bilirubin in neonates
Indian Council of Medical Research

Mobile Dengue Diagnostic Technology (m-DDT): A Smartphone-based Point-of-care Diagnostic Device
Defense Research and Development Organisation (DRDO)

Monitoring cardiac health in post-myocardial patients
Ramana and Manju Healthcare Inc., USA

SONEERA: Surface-water quality observation 'N' elimination of effluents using radio-frequency transmitter technology
Prasanthi Trust, USA

Biosciences

Augmenting Postgraduate Teaching & Research Facilities in Dept. of Biosciences
DST FIST

Perturbation in Metabolic pathways might drive Avascular Necrosis of Femoral Head by modulating bone biology: Mechanisms, Potential biomarkers and therapeutic targets
DST

Research Publications

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Special Annual Events

There are five special annual events that relate to the devotional, cultural, physical and service dimensions of Sri Sathya Sai Values-based Integral education. They are orchestrated to bring out the latent values and good qualities in students and teachers. A lot of planning and effort goes into each of these events. All students participate in these events in accordance with their individual skills and talents.

Summer Course in Indian Culture & Spirituality

2 Mar 2019

Man can make genuine progress only when the idea that education is for earning a living is given up. Only one who realises this truth is a truly educated person. Knowledge does not mean mere booklore. It is not the transference of the contents of books to the brain.

Education is intended for the transformation of the heart. Man today is proud about the little knowledge he has acquired about the physical world and boasts that he knows all about the universe. True knowledge is that which establishes harmony and synthesis between science on the one hand and spirituality and ethics on the other. Man, therefore, should at the outset determine the true value of education.

**Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL**

Benedictory Address, SSSIHL Annual Convocation,
22 November 1985

The Summer Course in Indian Culture & Spirituality marks the beginning of every student's journey at Sri Sathya Sai Institute of Higher Learning. Blessed by Bhagawan Baba in the current format of three days, this induction programme exposes students of the University to the rich cultural and spiritual heritage of Bharath. Moreover, it orients students into Bhagawan Baba's educational philosophy and gives them deep, first hand insights into how they can directly benefit from this unique institution.

The event in 2018 took place from 8 to 10 June 2018 at Prasanthi Nilayam. Over 2500 students, 200 teachers and 75 research scholars of all the four campuses of the University, as well as Sathya Sai Mirpuri College of Music, Sri Sathya Sai Higher Secondary School, Prasanthi Nilayam (Class XI and Class XII) and Sri Sathya Sai Gurukulam English Medium School, Rajahmundry participated.

The morning sessions of the event consisted of talks (Living with Divinity is True Education and Atmano Mokshartham Jagat Hitaya Cha - Striving for One's Emancipation and Welfare of the World), panel discussions (Daiva Preeti, Paapa Bheeti, Sangha Neeti - Love for God, Fear of Sin, Morality in Society and Self Confidence to Self-Realization), a dramatic presentation (Dharmo Rakshati Rakshitah - Dharma protects those who uphold or protect Dharma) and a quiz on Bhagawan Baba's Life & Teachings. All of these elucidated key insights and lessons from the ancient Indian scriptures, spiritual personalities and concepts. The sessions also featured a short video show on Bhagawan Sri Sathya Sai Baba.

In the afternoons, students and teachers from all four campuses have breakout sessions where they discuss teachings and lessons from Bhagawan Baba's discourses. This year, the main theme was Discipline, Duty and Devotion, based on a Divine Discourse delivered by Bhagawan Baba on 19 June 1996.

The evening sessions on the first two days of the event consisted of three talks by students and teachers of individual SSSIHL campuses, along with veda chanting and bhajans at the Sai Kulwant Hall. The topics of talks were Bharatiya Culture, The Significance of Prayer and Sai Vibhuti.

Students of Sathya Sai Mirpuri College of Music gave a wonderful musical presentation on the theme Sam Gaccham - Let us move together.

The post-dinner parayanam sessions consisted of invited speakers—typically alumni and senior teachers of the university—sharing their unique and divine experiences in the physical presence of the Revered Founder Chancellor of the University, Bhagawan Sri Sathya Sai Baba.

Prasanthi Vidwan Mahasabha 13-19 October 2018

Dasara or Navaratri is a ten-day festival, usually falling in the month of October, and is celebrated all over India in the worship of the Divine as the Mother principle. Since the early sixties, the festival of Dasara in Prasanthi Nilayam has been closely associated with the Veda Purusha Saptaha Jnana Yagna. This yagnam is a week-long worship conducted in the Divine Presence in the Poornachandra Auditorium in Prasanthi Nilayam each year for the welfare of the whole world. The yagnam commences on the fourth day of Dasara and concludes with the Poornahuti - the final oblation that is offered on Vijayadasami, the tenth day.

The evening programmes during the seven days of the yagnam are held in Sai Kulwant Hall, under the auspices of

the 'Prasanthi Vidwan Mahasabha', where many speakers—primarily students and functionaries of Bhagawan's educational institutions—address the gathering on topics concerning spirituality and philosophy, Bhagawan's teachings and experiences of devotees.

The topics for Prasanthi Vidwan Mahasabha 2018 were: Dasara at Prasanthi Nilayam, Love for God, Jagat Janini - The Divine Mother, The Feminine Aspects of Divinity and, Shirdi Sai and Sathya Sai.

Annual Convocation

22 November 2018

Sri Sathya Sai Institute of Higher Learning (SSSIHL) (Deemed to be University) held its 37th Annual Convocation at Sai Kulwant Hall, Prasanthi Nilayam, Andhra Pradesh in the Divine Presence on 22 November 2018 at 10:30 a.m.

The grand ceremony saw the Honourable Chancellor, Sri K Chakravarthi, IAS (Retd.), admit 471 candidates to their degrees. This included 282 undergraduate, 82 postgraduate, 99 professional and 8 Ph.D. awardees.

SSSIHL was honoured to have Dr. Renu Swarup as the chief guest of the ceremony. Dr. Renu Swarup is currently the Secretary, Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India.

The format, planning and execution of the SSSIHL convocation ceremony is second to none. The ceremonial procession was led by the University brass band, two students carrying the University Standards on either side of the Registrar (who carried the Ceremonial Mace). Other members of the procession included the Chancellor, Vice-Chancellor, Deans and the Heads of Departments along with the Chief Guest, members of the Sri Sathya Sai Central Trust and the Board of Management.

Following the invocatory veda chanting, the Vice-Chancellor, Prof. K B R Varma prayed to the Revered Founder Chancellor to declare the convocation open. The Convocation was then declared open in the Divine voice of Bhagawan Baba.

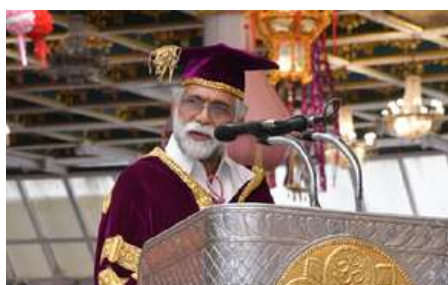
The programme included speeches by the Vice-Chancellor, the Chief Guest and the Revered Founder Chancellor (video broadcast of a previous Convocation Address).

Annual Convocation Drama

This year's drama was creatively named Watch the WATCH. It depicted the fact that time is the most precious gift that each one of us possesses. Everyone has the same 24 hours in a day, whether we are rich, poor, young or old. It is how we spend this day that defines us.

It narrated the story of Mr. Beejoy Das, a watch maker for the past 65 years in the city of Kolkata. Even at the age of 90, he still repaired watches. Mr. Das had been an ardent devotee of Bhagawan Baba from his young days. Bhagawan Baba had presented Mr. Das and his son with two identical watches. When He put the watch on Das's wrist, Bhagawan Baba said, "Watch Your Watch. Watch your Word, Action, Thought, Character and Heart." Mr. Das has even named his shop 'Watch Your Watch!'





One day, something very unfortunate happens in Mr. Das' life, and that day he forgets to obey His Lord's command. To his surprise, for the first time, his watch stops. He tries all methods to repair it, but to no avail.

Mr. Das narrates these experiences of his life to Aarush, a journalist. The drama unfolded the dilemma that Mr. Das then found himself in. Will he be able to correct the past? What are his expectations from life at 90? What is heavier for him, a heart that has learned its lessons, a soul that is looking for redemption or the wisdom that dawned late?

All-Round Gold Medallists

Ragini K R

Anantapur Campus - Bachelor of Arts

Pradyumna M

Prasanthi Nilayam Campus - Master of Science in Mathematics

Mayur Mukhi

Brindavan Campus - Bachelor of Science (Hons.) in Biosciences

Prayag Lepcha

Muddenahalli Campus - Bachelor of Business Administration

Gold Medallists

Ravula Raghavendra

Master of Business Administration

Angu Sewa

Master of Technology in Optoelectronics and Communications

Abhinay B

Master of Technology in Computer Science

Ayyagari Ranga Shaarad

Master of Science in Mathematics

Kocherlakota Sai

Master of Science in Biosciences

Seemesh Bhaskar

Master of Science in Chemistry

Karan K H M

Master of Science in Physics

Arun Sai Rankireddy

Master of Arts in Economics

Sourin Karmakar

Bachelor of Computer Applications

Shiva Rama Krishna Naidu K

Bachelor of Business Administration

K Sai Krishna Aravind

Bachelor of Commerce (Honours)

Rohit Kumar Rajak

Bachelor of Arts (Honours) in Economics

Kotha Hridhay Keerthana

Master of Science in Food and Nutritional Sciences

Amrutha Varshini S

Master of Arts in English Language and Literature

Saieswari A

Bachelor of Education

Priyadarshini Srirambalaji

Bachelor of Science (Honours) in Mathematics

V Sai Soumya

Bachelor of Science (Honours) in Physics

Aiswarya Shree

Bachelor of Science (Honours) in Chemistry

Shraddha Jha

Bachelor of Arts

Ph.D. Awardees

Sri Srinath M S (Computer Science)

Isogeny-based Quantum Resistant Undeniable Blind Signature and Authenticated Encryption Schemes

Sri K M Ganesh (Chemistry)

Water quality indexing of groundwater on a GIS platform and a study of adsorption methods for fluoride removal

Sri Naga Sai Visweswar K (Chemistry)

Bio-synthesis and Applications of Cyclic β -(1 \rightarrow 3),(1 \rightarrow 6)-Glucans Extracted from Bradyrhizobium Japonicum Bacteria

Sri Thota Sai Praneeth (Chemistry)

Enzymatic Hydrolysis of Groundnut Shell to Sugars and Biomass-derived Carbon Nanomaterials for Renewable Energy Applications

Sri Aswath Narayanan S (Biosciences)

Avascular necrosis of femoral head: Molecular Pathogenesis and Biophysical Characterization

Ms. Bhavani M (Microbiology)

Mechanisms Involved in the Emergence of Antibiotic Resistance among Pseudomonas aeruginosa and Strategies to Predict and Prevent Nosocomial Infections

Ms. Niranjana Mahalingam (Microbiology)

An insight into the antibiotic resistance mechanisms employed by gram negative bacteria (Escherichia coli and Acinetobacter baumannii) and development of an antibiotic resistance prediction model for patients with urinary tract infection

Ms. Divya Goyal (English Literature)

Ibsenian Bildung: From Passivity to 'Constructivity'



Annual Sports & Cultural Meet

11-15 January 2019

The Sri Sathya Sai Educational Institutions held the main event of the Annual Sports & Cultural Meet on 11 January 2019 at Sri Sathya Sai Hill View Stadium, Prasanthi Nilayam, Andhra Pradesh.

The event is a culmination of various sports, cultural and fine arts competitions held at all campuses of the University and other Sai educational institutions throughout the academic year. The Sri Sathya Sai educational institutions include all the four campuses of Sri Sathya Sai Institute of Higher Learning, Sri Sathya Sai Primary and Higher Secondary Schools, Smt. Eswaramma High School and SSSIHMS College of Nursing and Allied Health Sciences.

It showcases an array of physical and cultural presentations by over 3000 students of the institutions spread across two sessions, morning and evening. Preparations, which began a month in advance, involved thousands of combined practice hours by all students and teachers of the institutions.



Process over outcome

The Annual Sports & Cultural Meet brings to the fore several qualities of human excellence in students. With only a few weeks to perfect their presentations, and with academics and other daily pursuits, students have to make every minute of preparation count. The challenges of the process go beyond time, however. Very quickly, students need to have clarity of their outcomes, work in teams with unity (often with colleagues they have never worked with before), surmount the mental and physical obstacles that may seem impossible, and so on.

All this is accomplished on a shoestring budget that leaves the teams to make their final props and other event items with available and existing resources at the hostel. It not only helps them be thrifty, but forces them to think out of the box and bring in an element of creativity much beyond their current model of the world.

As D-Day approaches, failure and disappointments give way to a sense of determination to achieve excellence despite challenging circumstances. This ultimately leads to Self Confidence, when they go out and perform despite fears, doubts and self-limitations.

It is at this crucial juncture where the man-making experiment at Sai educational institutions truly succeeds. Tens of thousands of alumni are privy to this. The experiences during the Sports Meet preparations and hostel life in general have helped them navigate the toughest of situations in the working world and family life.

Why does it work? Why go through this effort willfully? It is for one simple reason: to please Bhagawan Baba and make Him proud. The entire gamut of the Annual Sports and Cultural Meet for the students boils down to this singular focus. Bhagawan Baba—with His divine vision—reciprocates this and makes sure that these pure feelings of Love are translated into the pursuit of excellence in every facet of the students' evolution.

As Bhagawan Baba often said, The End of Culture is Perfection.

Sports Meet Presentations

11 Jan 2019

- o Anantapur, Prasanthi Nilayam, Brindavan and Muddenahalli Campuses presentations: Rhythmic Synchronisers, Natyobics, Twirling Spinners, Lion Dance, Prasanthi Strikers, Wheel Wizards, Dream Team, Body Percussion, Shaolin Echoes, Drumebaaz, Red Stallions and Igniters

Cultural Meet Presentations

12-15 Jan 2019

- o Drama presentation by students of the Brindavan Campus: Drama presentation - The Life and Message of Saint Tulsidas
- o Musical Presentation by students of the Anantapur Campus: Krishnaarpanam
- o Drama presentation by students of the Muddenahalli Campus: The Way Back to You
- o Drama presentation by students of the Prasanthi Nilayam Campus: Jnana Prasthanam - Pathway to wisdom

Prize Distribution Ceremony

15 Jan 2019

The Prize Distribution Ceremony celebrated the excellent performances in sports and cultural events during both the Annual Sports and Cultural Meet and the academic year 2018/19 by students of each Sai educational institution.

Apart from awarding the cups and prizes to the students of all Sai educational institutions, it also included brief speeches by a teacher of SSSIHL and several students highlighting the significance of the event.

Athletic Champions

Maddireddy Meghana

Postgraduate, Anantapur Campus

R Pavithra Reddy

Undergraduate, Anantapur Campus

Chandan Kumar Rajak

Postgraduate, Prasanthi Nilayam Campus

Thota Sujendra

Undergraduate, Prasanthi Nilayam Campus

Uttam Kumar

Brindavan Campus

Krishnapuram Anil Kumar

Muddenahalli Campus

Cultural Champions

Dalli Jayasree Reddy

Postgraduate, Anantapur Campus

Shreelakshmi B

Undergraduate, Anantapur Campus

Yashwant Mukhia

Postgraduate, Prasanthi Nilayam Campus

Vedant Monger

Undergraduate, Prasanthi Nilayam Campus

S Sai Shriram

Brindavan Campus

Ajay Mukund S

Muddenahalli Campus

Fine Arts Champions

Alisha Pradhan

Postgraduate, Anantapur Campus

Sumani Rai

Undergraduate, Anantapur Campus



Community Service

Each year, students and teachers of the University work with local communities around the campuses throughout the year. Many of these service activities are initiatives by students themselves. Inspired by the example and precepts of our Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba, they reflect the impact of the unique blend of secular and spiritual education they receive here. Examples of these from 2018/19 include:

Cheyutha (Educational Support)

Anantapur Campus, ongoing

Cheyutha project is an initiative by the postgraduate students of the Anantapur Campus, SSSIHL to tutor the Campus contingent workers' school going children and semi-literate adults, in an effort to enhance the academic standard of the children and to aid in completing their home assignments (as majority of their parents are not literates). Adults are trained in basic reading, writing and arithmetic skill development. Over time (the project commenced two years ago), they have seen positive results in the workers' confidence and relationship with their children.

Narayana Seva

Anantapur Campus, every month

Each month, food packets are distributed to the needy poor in the slums around Anantapur town. The monthly Narayana Seva activity sees a team of cooks, campus workers, rickshaw drivers and students come together to deliver 25 kg of Pulihora (approximately 270-300 packets) to these marginalised citizens of society.

Adoption of Leper Colony

Anantapur Campus, 1986 to date

Project Love Stream is a long-standing example of service in action and how a little love and care have the power to create long lasting benefits to generations of families. The students and staff of the Anantapur Campus hostel have adopted a leper colony situated in the outskirts of the town of Anantapur since 1986, with the objective of making the inmates of the colony as self-sufficient as possible. As part of the project, each year, the students of the Campus made a variety of handicrafts like cards, bookmarks, rakhis and friendship bands. These are then sold to the inmates of the hostel and the amount thus raised is utilized to buy provisions for the residents of the leper colony on a monthly basis. Apart from contributing a small share to their basic requirements like provision of water connections, bathroom doors and fodder for the cows maintained by them, in 2018/19, thirty blankets were distributed to the residents.

Village Empowerment Programme

Anantapur Campus, 15 Sep 2018

Following an initial field visit to identify and understand the major problems and needs of the village of Upparapalli, Dist. Anantapur, Andhra Pradesh, the M.B.A. students of the Campus, along with three teachers, took posters related to government schemes and agricultural practices which would be beneficial for the villagers. Interaction with villagers and the panchayat office bearers revealed problems like poor hygiene, high level of school dropouts, lack of opportunities to develop basic skills etc. Ongoing efforts are being made to empower the villagers appropriately.

Celebrating Christmas with village children

Muddenahalli Campus, Christmas 2018

Similar to previous years, on the morning of 25 December 2018, the students of the Campus visited Muddenahalli village for Christmas celebrations. The nagar sankeertan that commenced from the hostel wound its way into the village. The students offered lighted candles to the children who participated in the bhajan session held at the local Hanuman temple. After the prayers, the children were all offered chocolates as Christmas gifts. Both the kids and the students enjoyed the heartfelt gesture.

Old Age Home Visit

Muddenahalli Campus, July 2018 and April 2019

Students of the Campus, like earlier years, visited the Sai Dwarakamayee Vriddhashrama, an old age home at Sultanpet, Nandi village, about four kilometers from Muddenahalli. The resident population has now swelled to about fifty residents.

After a half hour bhajan session, the students spent about an hour interacting with the aged elders, during which they sang songs and listened to the experiences of the residents. The elders too enthusiastically sang and talked to the young students. For those residents who could not come to the prayer hall, the students visited them in their living rooms. The visit taught students the value of empathy and respect for elders. They were emotionally touched after listening to the stories of the elders.

Grama Seva

Prasanthi Nilayam Campus, Oct 2018 to Feb 2019

*Give a man a fish, and you feed him for a day.
Teach a man to fish, and you feed him for a lifetime.*

This is what the students, doctoral research scholars and teachers of SSSIHL Prasanthi Nilayam campus put into practice for several months when they made multiple visits to the villages of Narsimpalli, Bukkapatnam Mandal (Population: 2500), Bonthalapalli, Puttaparthi Mandal (Population: 2500) and Marlapalli, Puttaparthi Mandal (Population: 1000).

Just as the years gone by, when they would deliver food, clothing and love to villages around Puttaparthi and its surrounding mandals, this new initiative by the Prasanthi Nilayam Campus - with the kind support of the Sri Sathya Sai Central Trust - has renewed #GramaSeva and made it a more sustainable model.

The several teams of students and teachers (which included all students of the Campus), after multiple visits, made visible progress in various areas of the programme during the year. Some of these included:

Sports and Fitness: Prepared grounds by removing weeds. Played volleyball matches with the village youth. Conducted different races (such as sack race, lemon-spoon race, etc.) For children aged 5-10, conducted games based on jumping and balancing. They were also schooled in basic health areas and taught a few yogic postures such as the Surya Namaskar.

Education: Math, Science and fun games, as well as Bal Vikas for Primary school, II to X Std. kids. This included training in basic Mathematics activities using a geoboard. Students also made some educational kits and gifted them to the school.

Music: Bhajan singing, vedam chanting, flute renditions, teaching the basics of Music (by a teacher at the Dept. of Music), and teaching musical instruments, such as Kanjira and Talam.

Cleanliness / Hygiene Drive: Played 'Waste Plastic Picking Game' with all children of the villages. Students exhaustively cleaned walls of various temples and mosques in the villages, Anganwadis (rural child care centers), play areas and even wells that had been used as a rubbish dump for years! A handful of flowering plants were then planted across the villages. Villagers were also given basic education on the importance of hygiene and cleanliness.

Greenery: Plantation of trees and beautification of the village and surroundings

Plumbing work: Students took on a host of civil and plumbing duties. From changing of a 3-inch outlet pipe from the 2000-liter main storage tank to laying a CPVC pipeline for the school underground water storage tank, this is where the maintenance training they got as part of the Self Reliance activities at the hostel really kicked in. They fixed overhead tanks, constructed urinals and toilets (including tiling work), fixed leaking taps across the villages and also assisted in fixing mesh windows and doors to prevent unwanted guests such as insects and reptiles into washroom areas.

Surveys: Students split into different teams to conduct comprehensive individual and household surveys for issues such as the number of elderly folks and how to serve them better on future visits, what their immediate needs are, etc. They also conducted a data survey of all households of the villages to map the socio-economic and demographic challenges. The Chemistry students performed certain experiments as a preparatory phase to check for the efficacy of usage of ground shells at the villages.

As a result of this sustained care and effort, the villagers were really happy and joyful and full of appreciation. The long-term goal is help the villages achieve self-sustainability. Once the village is a model village, they will be able to help other villages achieve the same.

Love All, Serve All, as our Revered Founder Chancellor always taught us.



SSSIHL ANANTAPUR CAMPUS @50

1968 – 2018



#Sai Education Mission

50

Golden Jubilee year
SSSIHL
Anantapur
Campus

SSSIHL Anantapur Campus Milestones

Early 1950s
Sri Sathya Sai Baba, at age 25, mentions that there will be a University in Puttaparthi, Andhra Pradesh (Population: 100)

22 Jul 1968
Sri Sathya Sai Arts and Science College for Women at Anantapur is inaugurated (Student Strength: 125)

8 Jul 1971
The new building of the Sri Sathya Sai Arts and Science College for Women, Anantapur is inaugurated

10 November 1981
Sri Sathya Sai Institute of Higher Learning is declared as a Deemed to be University, under Sec. 3 of the University Grants Commission (UGC) Act, 1956

DEGREE PROGRAMMES
Several degree programmes were inaugurated at the campus over the years:

- 1969 – B.Sc. (Physics, Chemistry, Botany and Zoology)
- 1972 – M.A. in Telugu
- 1975 – B.Com.
- 1976 – B.Sc. (Home Science)
- 1982 – M.A. in English Language & Literature / Philosophy
- 1988 – B.Ed.
- 1991 – B.Sc. (Honours)
- 1993 – B.Com. (Honours)
- 2004 – B.Sc. (Honours) / M.Sc. in Biosciences
- 2014 – M.B.A.

27 May 2011
Inauguration of the second extension building at Anantapur Campus

2017
Student Strength: 482





sssihl.edu.in

The end of education is character
SRI SATHYA SAI BABA



ANNUAL REPORT 2018

**The cultivation of Human
Values alone is true
Education.**

Sri Sathya Sai Baba
Revered Founder Chancellor





FOREWORD

It is with an immense sense of satisfaction, I pen this foreword to the annual report of Sri Sathya Sai Institute of Higher Learning (SSSIHL) for the academic year 2017/18. This unique Institute has reached yet another milestone in terms of accomplishing notable progress in all its endeavours.

In 2017, our admissions acceptance rate continued to be one of the best in our country, with 2669 qualified applicants competing for 482 seats across all our academic programs, that include undergraduate, postgraduate and professional. This competitive acceptance rate of 18%, combined with an exceptional student-teacher ratio of 9:1, strengthens the quality of education at SSSIHL. This is strongly reflected by the overall examinations pass rate of 96%. In addition, a significant percentage of our final-year postgraduate students secured top ranks at national level competitive examinations.

The large applicant pool from over 26 states and union territories of India augments the quality of student-teacher interaction in the compulsory residential system of education that we have at SSSIHL. In fact, the intangible aspects of the Sri Sathya Sai Values-based Integral Education—with its several benefits of student discipline, focus, and development of good values and character—facilitate a higher academic and research output. Indeed, this is true for all Sai Educational Institutions.

Perhaps for the first time in our history, over 70% of our teaching faculty have Ph.D. qualifications, with an additional 15% pursuing their doctoral research. Furthermore, a record 177 guest lecturers and visiting faculty from industry and academia (from institutions such as IISc, BARC, Cisco, IITs, Pricewaterhouse Coopers, IIMs, Wipro, Barclays, Bayer Healthcare and TCS) interacted with our students during the academic year.

Our need-based research efforts continue on the high development arc of the past few years. Our focus on the three broad areas of Health, Energy and Environment has resulted in significant research output, as highlighted in the

report. Our faculty are actively engaged in several cutting-edge research projects funded by external funding agencies (both government and non-government). Their research investigations during the academic year 2017/18 resulted in over 200 research articles published in a wide range of peer-reviewed journals of high repute.

Sound research demands sound infrastructure. I am happy to report that with the kind support of Sri Sathya Sai Central Trust, SSSIHL Central Research Instruments Facility (CRIF), based at the Prasanthi Nilayam campus, is operational. This is one of the few such facilities in our country (and the first in a rural location) with an investment of ₹45 crores that houses advanced characterization/analytical tools under a single roof, to carry out translational research in various frontier areas of Science and Technology, encompassing physical, biological, chemical, materials science, food and also computational and interdisciplinary areas. This would facilitate faculty, postgraduate and doctoral students to keep pace with the scientific developments taking place globally, and to publish their research findings in peer-reviewed high impact journals.

On our faculty selection front, the above facilities have had a catalytic effect. For instance, in recent months, post doctorate applicants who graduated from premier institutions such as IISc, TIFR and the IITs have joined our teaching fraternity and research faculty.

None of this would have been possible without the dedicated love, effort and support of teachers, staff, active alumni and the Sri Sathya Sai Central Trust. My heartfelt gratitude to all of them. We pray to our Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba to continue to bless us with His Divine guidance so that this modern Gurukula will sustain its unique identity and status amongst all the educational institutions in our country.

Prof. K B R Varma
Vice-Chancellor

ANNUAL REPORT 2018

1 June 2017 to 31 May 2018

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SRI SATHYA SAI VALUES-BASED INTEGRAL EDUCATION

Sri Sathya Sai Institute of Higher Learning (Deemed to be University), Prasanthi Nilayam, Andhra Pradesh, India, is a visible manifestation of Bhagawan Sri Sathya Sai Baba's vision of education for human transformation.

Bhagawan Baba has designed the system of Sri Sathya Sai Values-based Integral Education in such a manner that between the time an 18-year old student joins the university and when she or he graduates (at the age of 21 or 23), there is a deep *inner* transformation that takes place. This concept is very unique at the university level.

The University hosts over 1300 undergraduate, postgraduate and professional programme students across four campuses:

For women students:

- Anantapur Campus at Anantapur, Andhra Pradesh

For men students:

- Prasanthi Nilayam Campus at Puttaparthi, Andhra Pradesh
- Brindavan Campus at Whitefield, Bangalore, Karnataka
- Muddenahalli Campus at Muddenahalli, Karnataka

Programmes offered include:

- **Undergraduate:** B.A., B.Com. (Hons.), B.B.A., B.C.A., B.P.A., B.Sc. (Hons.),
- **Postgraduate:** M.A., M.Sc.
- **Professional:** B.Ed., M.B.A., M.Tech.
- **Research:** Ph.D.

A MODERN GURUKULA

Sri Sathya Sai Institute of Higher Learning (SSSIHL) was founded to inculcate ethical and moral values in students. These ethics and morals form the undercurrent of every subject taught at the university. This helps students develop a wholesome and balanced personality, one where academic competence is supplemented with good character.

This holistic development of students can only be possible in an environment that encourages the development of the student's mind, body and spirit.

To facilitate this, the University has a compulsory residential policy for all students and doctoral research scholars. It is an essential ingredient for the university's Values-based Integral Education to achieve its objective of transformation. The environment is similar to the ancient Indian Gurukula system of education, in a modern context. Teachers and students live and grow together in an atmosphere of mutual trust and unity. This helps students develop a wholesome and balanced personality, one where academic competence is supplemented with good character.

DISTINCTIVE FEATURES

Admissions

- Merit-based open admissions policy for all irrespective of income, religion or region
- Free education for all students

Residential Character

- Compulsory residential character enabling translation of lessons learnt into practical skills through experiential learning
- Spiritual ambience in an environment of discipline and love
- Teaching faculty, research scholars and students residing in the hostel
- Cultivation of the spirit of self-reliance, brotherhood and sacrifice through mentoring and personal example

Infrastructure

- Campuses set in spacious and peaceful surroundings
- Well equipped, modern science laboratories and cutting-edge Research Instruments Facility
- Libraries across campuses with over 2,00,000 volumes
- Computer and Multimedia learning centres with ultra-high speed broadband internet connectivity
- International Centre for Sports and a cricket stadium

Academics & Research

- Over 95% examinations pass rate
- Favourable Student-Teacher Ratio
- Integrated five-year programmes combining undergraduate and postgraduate studies for a systematic and graduated learning process
- Interdisciplinary research for societal benefit
- Awareness Programmes and Moral Classes reinforcing human values

Integral Education

- Life lessons learnt through the message of the Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba
- Application of what is learned in daily life
- Integrating human values with secular knowledge
- Inculcating the spirit of self-reliance and service to society
- Synthesis of science and spirituality for societal benefit

The concept of integral education that SSSIHL imparts is willingly pursued by all teachers, staff and students.

THE PROCESS

The diagram on the right forms the basis of the system of Values-based Integral Education at SSSIHL.

The base is the concept of a modern Gurukula that sustains all relationships and activities at SSSIHL. It is responsible for creating and sustaining the congenial environment necessary for the teacher-student interaction to grow and develop.

Adherence to discipline and appropriate behaviour are the two important aspects that encompass all interactions. The five human values of Truth, Right Conduct, Peace, Love and Non-violence form the undercurrent of all the dimensions of integral education.

These dimensions are: Intellectual, Physical, Cultural, Devotional and Service. The key activities for each of these dimensions form the basis of most of the time that students spend at SSSIHL.

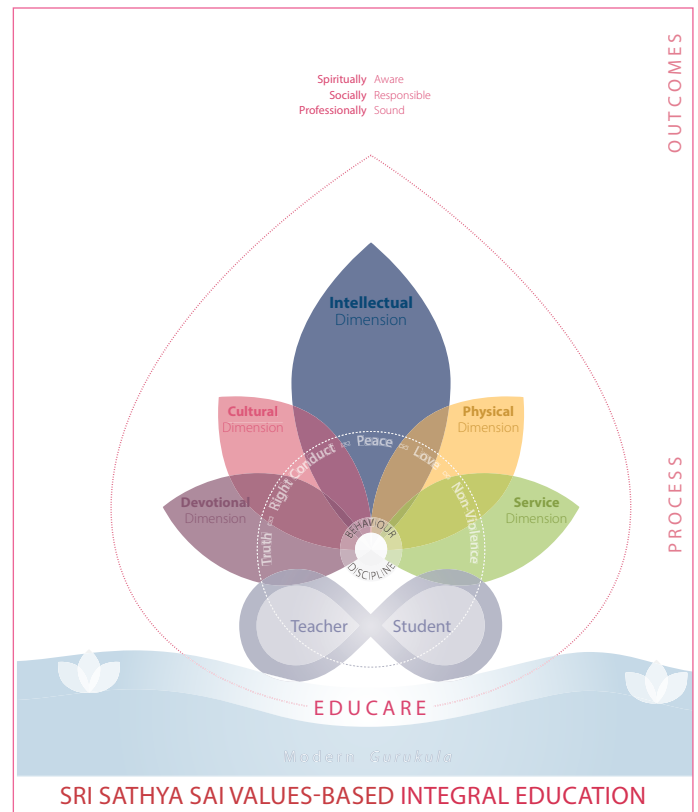
Bhagawan Baba purposefully designed the system of Integral Education so that while students spend 60% of their time on academics (intellectual capacities), they also spend 40% time on the development of other qualities.

(See page 8 for further details.)

The Daily Routine

This is a crucial component of this process. Each student's day starts at 5:00 a.m., with a couple of hours spent in prayer, exercise and other vocational pursuits (such as practice sessions for music, band, traditional Indian music and the likes).

Classes commence at 9:00 a.m. After college ends at around 4:00 p.m., students move to the Mandir/Prayer hall for participation in congregational chanting (veda), devotional singing (bhajans) and other spiritual activities. These also include talks by eminent speakers on a variety of spiritual topics. Post dinner, students usually spend time on their studies.



THE OUTCOME

The outcomes of the system of Values-based Integral Education at SSSIHL are threefold. It prepares all graduates to be:

- Spiritually aware
- Socially responsible and
- Professionally sound

It helps develop a strong character and positive qualities in students and nurtures virtues like adaptability, tolerance and sacrifice; developing students into noble and responsible citizens.

I have established these institutions to impart spiritual education as a main component and worldly education as a secondary one. Education should enable one to cultivate good qualities, character and devotion. The teaching of the university curricula is only the means employed for the end, namely, spiritual uplift, self-discovery and social service through love and detachment.

Sri Sathya Sai Baba
Revered Founder Chancellor

INTROD

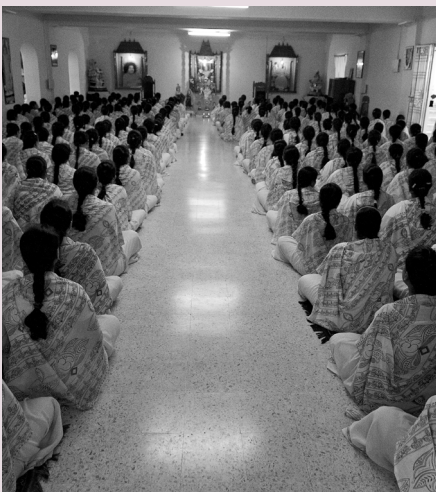
INTEGRAL EDUCATION ACTIVITIES

ALL STUDENTS AT SSSIHL SPEND 60% OF THEIR TIME AT UNIVERSITY ON INTELLECTUAL ACTIVITIES (PRIMARILY ON THEIR STUDIES). THE REST OF THE 40% OF THEIR TIME IS SPENT ALMOST EQUALLY ON ACTIVITIES RELATED TO THE INTEGRAL EDUCATION DIMENSIONS OF DEVOTIONAL, CULTURAL, PHYSICAL AND SERVICE. THESE ARE HIGHLIGHTED BELOW.

DEVOTIONAL DIMENSION

- Bhajans (Sankirtan)
- Vedic chants and stotrams
- Meditation & Silent sitting
- Suprabhatam (prayer at dawn)
- Assembly (college prayer)
- Brahmaarpanam (food prayer)
- Kshama Prarthana (night prayer)

The activities of the devotional dimension enable a student to connect to his/her Divine inner Self. This inner connection opens the heart and brings forth the feeling of love, compassion and empathy for fellow human beings.



CULTURAL DIMENSION

- Celebration of festivals: Eid-al-Fitr, Independence Day, Christmas, Sri Krishna Janamashtami (cow procession), Ganesh Chaturthi, Ganesh Immersion, Christmas Ugadi, Sri Ramanavami, etc.
- Brass Band
- Nadaswaram & Panchavadyam ensemble
- Annual Sports & Cultural Meet
- Performing Arts: Music programmes
- Drama & Dance
- Fine Arts: Rangoli, Card making
- Photography, Altar making
- Public Speaking
- Debates and Elocution

From the performing arts to public speaking to the fine arts, the cultural dimension is designed to give students wide opportunities to find an avenue to their individual artistic expression.

The university makes every effort to provide the best possible resources—both material and human—so that students excel at their chosen activity. Festivals of major world religions are celebrated, reinforcing the unity among all faiths. Every student is involved in one way or another in the celebration of these festivals.

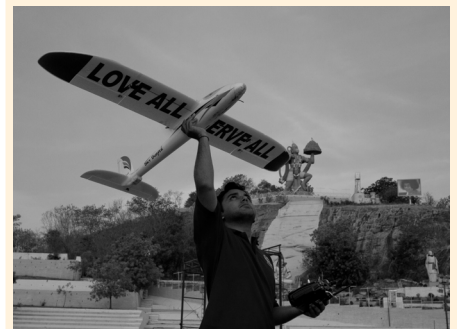


PHYSICAL DIMENSION

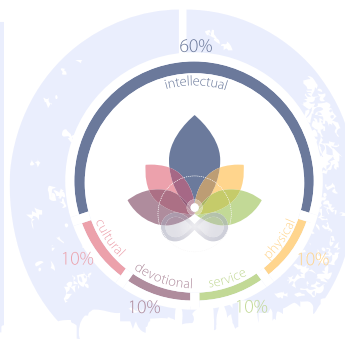
- Sports
- Games
- Jogging
- Exercises and Yogasanas
- Annual Sports & Cultural Meet

Sports and games are a part of the daily routine of all students. From yoga classes to fitness training, from team sports to individual sports, students are encouraged to overcome their limitations and excel in these activities.

The university has excellent sports facilities.



Annual time spent by Students on
INTEGRAL EDUCATION DIMENSIONS



SERVICE DIMENSION

- o Self-Reliance departments:
Electricals, Plumbing (water supply), Audiovisual, general store, dispensary, dietary services, hostel mess, arts & crafts, costumes & props, etc.
- o Community living
- o Social Work
- o Voluntary work
- o Community Service
- o Prasadam Distribution

The philosophy of service at SSSIHL is based on the concept that divinity pervades all of humanity, and hence when you serve others, you are serving the Divine. Students learn to serve without expecting anything in return, other than the deep inner satisfaction of serving others.

The compulsory residential system, where students live in dormitory-styled accommodation with other students from totally different backgrounds (for a minimum of two years and up to five years or more), provides an excellent foundation for the service dimension.



INTELLECTUAL DIMENSION

Apart from academics and research, the activities in this dimension include:

Awareness Courses

These mandatory courses are designed to cultivate a broad view of the human condition in students. The course content (e.g. the Unity of Religions and Faiths, Study of the Indian Epics, etc.) helps trigger self-reflection and enquiry and sensitises students to the concerns of society, and gets them to think about practical solutions to these problems.

Thursday Moral Class

At each campus, Thursday mornings begin with an hour of inspiring and ennobling talks by speakers focusing on their personal spiritual experiences, messages from sacred scriptures and other elevated and socially relevant themes. It is also used to highlight students' talents in music, dramatics, elocution, debates, quizzes, etc.

In 2017/18, some of the topics included: Immortality, Stones in the Sky, Jignaasaa (A Quest for Knowledge), Talks on the Ramayana, The Divine Chancellor, etc.

Prayer Talks

Every morning before classes commence at the college (across all campuses), all students and teachers gather for the morning assembly. Prayers/veda chanting/bhajans and a few minutes of silent sitting are sometimes followed by a talk by students, faculty members or invited guests on topics related to morals and values.

In 2017/18, some of the topics included: God's Love, Power of the Mind, Yoga, Self-Leadership, Living with God, Maturity (Growing Up), Gratitude, Surrender, Values, Carpe Diem, Thought, Patriotism, Experiences with the Lord, Distraction, Vivekananda's Message, No Pain, No Gain, Social Responsibilities, Spectrum of Beliefs, Subhash Chandra Bose: His Philosophy, My experiences talking on the stage, Vedanta and Science, and Emotional Intelligence.



UNIVERSITY GOVERNANCE & STRUCTURE

Sri Sathya Sai Institute of Higher Learning (Deemed to be University) is an independent and self-governing institution. It was established by the Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by the Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts and the Institute.

THE TRUST

Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust) was founded to foster the culture of India and promote in the students and teachers an awareness and understanding of the social needs of the country; with special focus to the needs of the rural population. It is aimed to inculcate in students a world perspective - an international outlook imbuing human values along with a spiritual and secular education.

Its members for 2017/18 were:

- Justice A P Misra, Former Judge, Supreme Court of India
- Sri K Chakravarthi, Member-Secretary, Sri Sathya Sai Central Trust
- Sri T K K Bhagwat, Member, Sri Sathya Sai Central Trust
- Sri S S Naganand, Member, Sri Sathya Sai Central Trust
- Sri R J Rathnakar, Member, Sri Sathya Sai Central Trust
- Prof. S P Thyagarajan, Former Vice-Chancellor, University of Madras

THE PRINCIPAL BODIES

The administrative and academic functioning of the university is carried out by the following two principal bodies:

- The Board of Management
- The Academic Council

THE BOARD OF MANAGEMENT

The Board of Management is the principal authority of the university, responsible for its general management and administration.

Its members for 2017/18 were:

- Prof. K B R Varma, Vice-Chancellor, SSSIHL (Chairman)
- Sri S S Naganand, Member, Sri Sathya Sai Central Trust Nominee, SSSIHL (Public Charitable Trust)
- Dr. (Ms.) Renu Swarup, Senior Advisor, Dept. of Biotechnology, Ministry of Science & Technology, and Managing Director, Biotechnology Industry Research Assistance Council (BIRAC)
- Dr. Sandip Chatterjee, Officer on Special Duty/Scientist F, Ministry of Electronics and Information Technology, Govt. of India
- Prof. Srinivasan Chandrasekaran, Professor (Hon.), Dept. of

Organic Chemistry, Indian Institute of Science

- Prof. S Siva Sankara Sai, Dean, Faculty of Sciences, SSSIHL
- Prof. (Miss) Rajeshwari C Patel, Dean, Faculty of Economics & Humanities, SSSIHL
- Prof. G Nageswara Rao, Head, Dept. of Chemistry, SSSIHL
- Prof. R Prabhakara Rao, Head, Dept. of Economics, SSSIHL
- Dr. Naren Ramji, Registrar, SSSIHL (Member Secretary)

In 2017/18, The Board of Management met on 14 October 2017 and 18 February 2018.

THE ACADEMIC COUNCIL

The Academic Council is the principal academic body of the university. It has general control over and is responsible for the maintenance of standards of teaching, research and training, approval of syllabus, coordination of research activities, and examinations and tests within the university. Its external members for 2017/18 were:

- Prof. H P Khincha, Dept. of Electrical Engineering, Indian Institute of Science, Bangalore
- Prof. Gopal Naik, Dean, Indian Institute of Management, Bengaluru
- Prof. S B Krupanidhi, Materials Research Centre, Indian Institute of Science, Bangalore
- Dr. N R Munirathnam, Director General, Centre for Materials for Electronics Technology (C-MET), Ministry of Electronics and Information Technology (MeitY), Govt. of India, Pune
- Prof. Ram Rajasekharan, Director, Central Food Technological Research Institute (CFTRI), Council of Scientific and Industrial Research (CSIR), Mysore
- Dr. V Natarajan, Director, Research & Innovation Centre, IIT Madras Research Park, Chennai

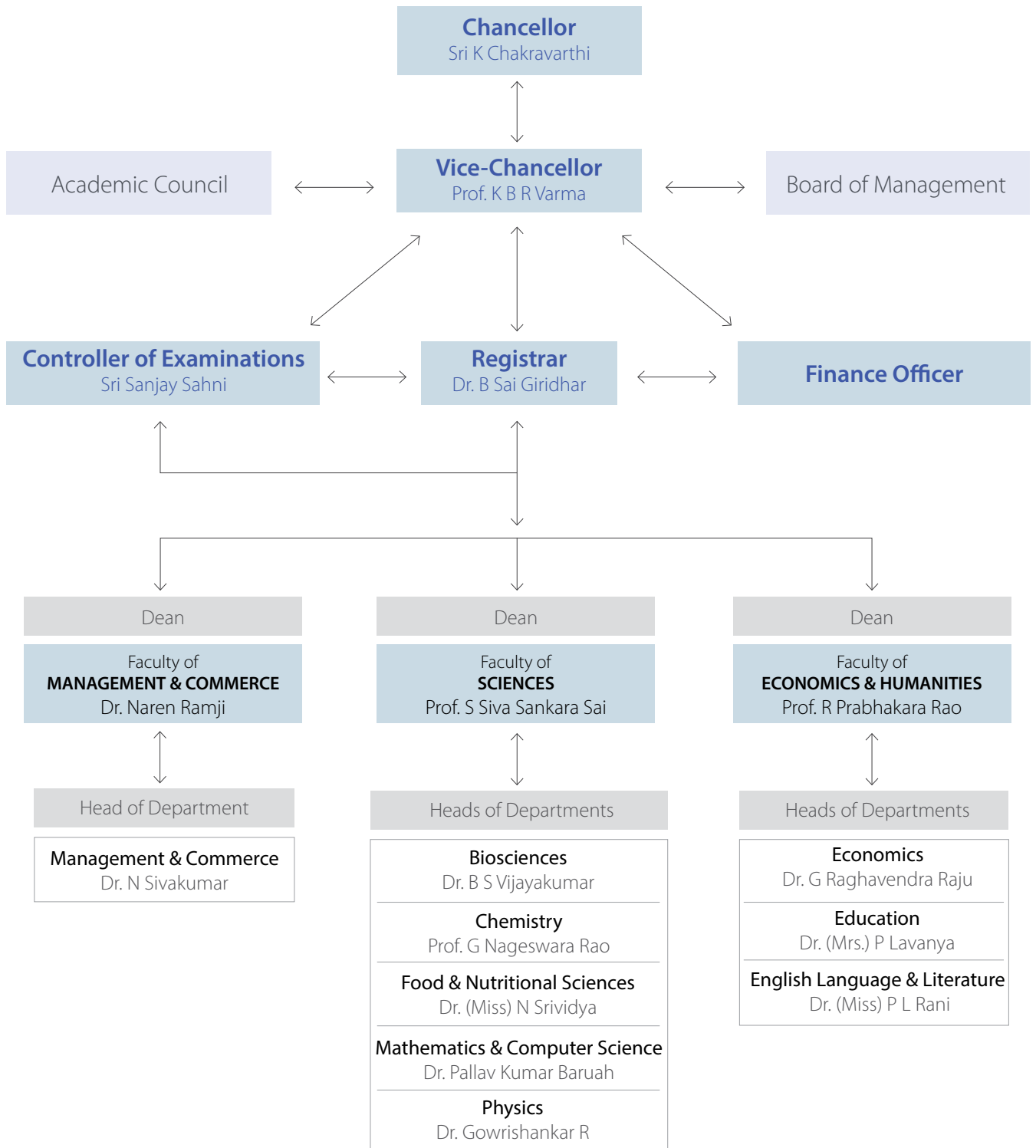
In 2017/18, The Academic Council met on 11 October 2017.

IMPORTANT COMMITTEES

In addition to the principal bodies that govern the university, there are various committees that have been set up to ensure that academics and administration are in accordance with the high standards that SSSIHL has striven to consistently maintain. Some of these committees include:

- The Boards of Studies
- The Finance Committee
- Planning and Monitoring Board
- Internal Quality Assurance Cell (IQAC)
- Research Advisory Board
- Institutional Ethics Committee
- Institutional Biosafety Committee
- Building and Works Committee
- Campus-Hostel Management Committee
- Research Conferences Cell

Revered Founder Chancellor Bhagawan Sri Sathya Sai Baba



Sri Sathya Sai Institute of Higher Learning (Deemed to be University) has been established by Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts.

482

Total Admissions

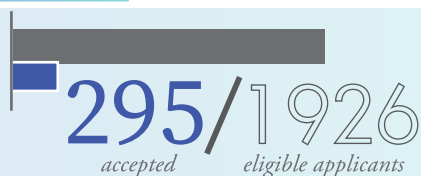


1/5

applicants are admitted

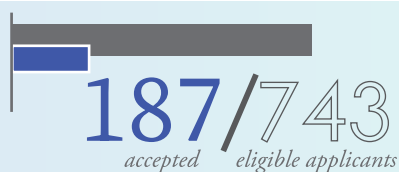
15%

Undergraduate Acceptance Rates



25%

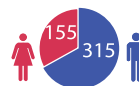
Postgraduate & Professional Acceptance Rates



Admissions

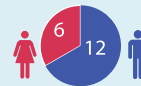
470

Graduates



18

Gold Medallists



12

Ph.Ds awarded

Graduates

208

Research Publications

177

Visiting Faculty & Guest Lecturers

68

Doctoral Research Scholars

Research & Teaching Grants

2:1

Student-Computer Ratio

students have one-on-one access to computers at all times

₹1.58 crores

SSSIHL 2017/18 STATISTICS

23/29

States of India

Student
Diversity

9:1

Student-Teacher
Ratio

1/5

Teachers are
Residential

Expenditure on Infrastructure
& Equipment

₹ 2.53 lakhs

Expenditure per Student /
per year

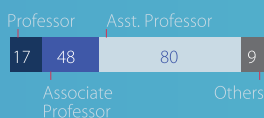
₹ 11.36 crores

Staff Profile

Student Profile

154

Teacher Designations



70%

PhD

*20 pursuing



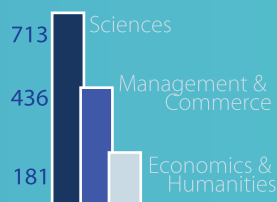
2.5:1

academic administrative

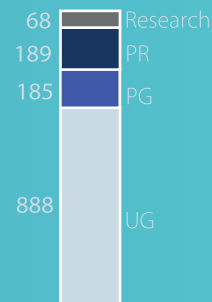
1330



By Campus



By Faculty



By Programme

ACADEMIC WORKSHOPS & CONFERENCES

TO FACILITATE WIDER EXPOSURE TO THE DEVELOPMENTS IN ACADEMIA AND INDUSTRY AND ENABLE THE EXCHANGE OF IDEAS, THE INSTITUTE HOSTED ALMOST TWENTY NATIONAL AND INTERNATIONAL WORKSHOPS AND CONFERENCES DURING THE ACADEMIC YEAR 2017/18.

For a full report of all SSSIHL Workshops & Conferences in 2017/18, kindly visit our Events page at sssihl.edu.in

PROF. KENJI UCHINO LECTURE SERIES OF FUNCTIONAL MATERIALS

Dept. of Physics: 12-15 Jun 2017

Students, scholars and teachers of the Departments of Physics and Chemistry had the rare honour of being part of a four-day lecture series on Functional Materials by Prof. Kenji Uchino, a pioneer in piezoelectric actuators. Prof. Uchino is the Professor of Electrical Engineering, and the Director of the International Center for Actuators and Transducers at Penn State University, USA.

The lectures were on the following topics: **Essentials to Piezoelectric Actuators – Researcher’s Misconceptions, Essentials to Piezo Actuators, Piezo Motors Overview and Entrepreneurship for Engineering.**

The lectures started with an overview of the history of piezoelectric materials as well as the fundamentals of piezoelectricity, necessary terminologies and equations/formulas, followed by the overall applications of piezoelectrics. Prof. Uchino then discussed superior piezoelectricity of lead based systems and the ongoing research on lead free materials for improving piezoelectric properties.

Practical design and fabrication issues related to piezo actuators were summarized with a focus on manufacturing techniques and applications. Material and design aspects of piezo actuators and piezo motors with an emphasis on multilayer technologies, particularly important for manufacturing actuators and transformers, were also discussed. Application oriented materials development, including high power piezoelectrics and piezoelectric performance under mechanical stress were also outlined. He talked about the fact that high power drive generates significant heat generation, while the hysteresis of piezoelectrics is enhanced significantly under high mechanical stress. He also comprehensively elaborated upon his device-development philosophy, device designs, drive/control techniques, typical applications and future progress in this field.

The final lecture elaborated on his industrial and academic experience. Prof. Kenji provided guidelines on how to start-up a high-tech company for young engineers and discussed issues surrounding the motivation for entrepreneurship.

HANDS-ON EXPERIENCE IN ADVANCED RESEARCH TECHNIQUES (HEART) 2017

Dept. of Biosciences: 3-8 Jul 2017

The five-day conference was a collaboration between eleven scientists from the US and India, and the Departments of Biosciences and Chemistry, SSSIHL that offered hands-on training in the areas of protein and metabolomics mass spectrometry as well as protein, metabolite and genome informatics.

Each day included a two-hour scientific talk by the external experts focused on the application of various OMICS technologies in disease research, followed by a hands-on training workshop that was divided into four parallel sessions on Genome Informatics, Protein and Metabolite Informatics, Protein Mass Spectrometry and Metabolite Mass Spectrometry.

In addition, sessions on experimental design and one-on-one discussions with doctoral research scholars on their respective thesis projects were conducted. The main objective of each training session was to provide information and know-how on the respective technologies in the context of specific thesis projects.

External experts and guests from:
Baylor College of Medicine and Agilent Technologies



GST: THE NUTS AND BOLTS OF A GOOD AND SIMPLE TAX

*Dept. of Management & Commerce:
21 Jul 2017*

Led by two experts, the seminar explored the Goods and Services Tax (GST) in light of the 2017 tax reforms made by the Government of India towards achieving 'One Nation, One Tax'. GST applies a single tax rate for a product or service across the country, which will be shared by the state and the central government on equal terms. Prior to the introduction of GST across India on 1 July 2017, central and state taxes were separate for different goods and service. The speakers discussed the constitution of the GST, including the various indirect taxes including value-added tax (VAT), sales tax and service tax.

The pros and cons of GST implementation were also explored. For example, the various operational concerns of companies and the challenges of GST implementation in a huge country like India. Positive outcomes discussed included the impact the use of technology will have on tax evasion, the ensuring of no more tax costs (which is expected to make manufacturing in India more attractive for both local and international industrialists), etc. Also, GST greatly reduces the number of levied taxes, streamlining logistics and inventory into a common market that eliminates fragmentation.

External experts and guests from: [Sridhar & Brito](#) and [PricewaterhouseCoopers](#)



PULSAR-2K17, A JOURNEY THROUGH PHYSICS

Dept. of Physics: 21 Jul 2017

The workshop brought together both the worlds of theoretical and applied Physics in an effort to broaden the horizons for students pursuing Physics at the University. It incorporated Physics from the age of vacuum tubes to that of nanotubes, with the students and research scholars benefiting from interactions with people with whom the subjects have grown. Topics discussed included Nuclear Physics, Particle Science, the domains of expanding multiple universes and dark matter, and how Mother Nature, to this day, remains esoteric in the eyes of Physics.

External experts and guests from: [University of New Haven](#), [Clemson University](#) and [IIT Madras](#)

INTEL & CALLIGO SOFTWARE TRAINING: AN INTRO TO ARTIFICIAL INTELLIGENCE

Dept. of Mathematics & Computer Science: 10 Aug 2017

A training workshop in collaboration with Intel & Calligo software organized on the basics of Artificial Intelligence. It was based on the Intel® Student Ambassador Program for Artificial Intelligence (AI), where university students engage with Intel around their work in Machine Learning, Deep Learning and Artificial Intelligence. Calligo software experts demonstrated some of the tools used by Intel for Machine Learning and Deep Learning to students of the department. Those software tools were subsequently used by students pursuing projects in Machine Learning.

External experts and guests from: [Calligo Technologies](#)

SAMANVAYA (MBA FOUNDATION DAY) – 31ST ANNIVERSARY OF THE SSSIHL MBA

Dept. of Management & Commerce: 20-21 Aug 2017

As every year, the Dept. of Management & Commerce celebrated the inauguration of the Masters of Business Administration (M.B.A.) programme by Sri Sathya Sai Baba, Revered Founder Chancellor, SSSIHL. The event consisted of quizzes, games, campaigns, role-plays and presentations that kindled the thoughts, analytical skills and intellectual fervour of students. The sessions included Take it and Sell it (a sales exercise where students had to put on their salesman hat and sell items like ash, plastic wire, phone cords, etc. to randomly created teams of four), an advertising competition and a business quiz.

The event concluded with a felicitation programme in remembrance of the teachers who have encouraged and supported several batches of students and research



scholars over the decades in their journey of Management Education embedded with human values.

FOSTERING A WINNING CULTURE IN AN ORGANIZATION THROUGH VALUES AND ETHICS

Dept. of Management & Commerce: 2 Dec 2017

Setting Sri Sathya Sai Baba's exposition on ethics as the base and His expectations from future managers as the learning objective, the workshop was built on the notion that Bhagawan Baba voiced: just as a plant uses soil, water, and sunlight to grow, in the same manner, people must nurture themselves with values and ethics.

Four guest speakers from varying professional backgrounds were invited for the workshop to stimulate the healthy discussions on this important subject. Topics included Organisational Values and Employee Connect & Engagement, Moral Challenges and Value Based Practices in Accounting and Finance, Connecting Organizational and Individual Values in the Workplace and Changing Marketing Landscape - Being Right and Winning Right.

External experts and guests from: [Eli Lilly and Company](#), [SPR & Co](#), [Barclays Shared Services](#) and [Genpact](#)

DESIGN A JOYFULLY ALIGNED LIFE: INSIDE OUT

Dept. of Management & Commerce: 2 Dec 2017

In the midst of all abundance, does life sometimes seem unfulfilling? Do you feel ever-busy but disengaged? Do you wonder if there could be a better 'you' - a more confident, more aligned you? The SSSIHL alumni participants of the workshop explored these questions, and then some! Designed for senior working professionals to raise their awareness on the idea that one must live mindfully to die fulfilled, the workshop consisted of a presentation on mindfulness, meditations, discussions, group exercises, visioning and much more. The end result was a greater sense of ownership and responsibility for life's passing moments and efforts to ensure that they are perfectly aligned to own goals and priorities. All in a hope that we must all

be aligned to our own conscience, the source of joyful fulfilment.

DEEP LEARNING

Dept. of Mathematics & Computer Science: 7-9 Dec 2017

The most influential Machine Learning paradigm in the recent years that has revolutionized the domain of speech, vision and language is Deep Learning. The workshop concentrated on three major areas of Deep Learning: Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN) and its variants, including Long Short Term Memory (LSTM), and Generative Adversarial Networks (GAN) and its competitor Variational Autoencoders (VAE).

The key highlight of the workshop was the hands-on sessions that focused on implementation and application of these networks to computer vision and language modelling problems using PyTorch framework. Lectures and lab sessions were chaired by both internal and external experts.

External experts and guests from: [Grab, Singapore](#), [IIT Hyderabad](#)



INTRODUCTION TO ACTUARIAL SCIENCE

*Dept. of Mathematics & Computer Science:
23 Dec 2017*

Actuarial Science is a discipline that applies mathematical and statistical methods to assess risk in insurance, finance and other industries and professions. Actuarial professionals often go through vigorous training and professional examinations to get qualified, especially today with the proliferation of high speed computers. Typical applications include the areas of life insurance, pensions and healthcare.

The workshop introduced the concept to final year B.Sc. in Mathematics students with a series of lectures, discussions and two case studies on Rating Methodologies (Innovative Products) and Estimating Liabilities (Reserving).

External experts and guests from: [Swiss Re, Bangalore](#)

BIG DATA GENOMICS SYNERGY

*Dept. of Mathematics & Computer Science:
16-17 Jan 2018*

The workshop explored the intersection between computer science and biological research. Invited experts married the field of Genomics, the study of the complete genetic material (genome) of organisms, and Big Data. The amount of data being produced by sequencing, mapping, and analysing genomes propels genomics into the realm of Big Data was the main theme of the workshop.

Students also had computer lab sessions that provided easy to use, powerful tools of all phases of analytical projects and were introduced to the use of multifaceted predictive analytics capabilities in a single solution, in an effort to find statistical solutions for problems involving Genomic Data through the programming language R.

External experts and guests from: [OmiX Labs \(India\)](#), [Accenture](#), [iBIG Foundation](#), [HCITExpert.com](#)

DECODING THE MEDIA DISCOURSE

Dept. of English Language & Literature: 30-31 Jan 2018

How does a journalist develop the essential writing skills and professional habits needed to address audiences in a rapidly changing media landscape? As we enter the post mass media world, what challenges does media writing pose? And where do media linguists—who address crucial aspects of text production (written, oral and online) in the domain of public discourse in general and news media in particular—come into all of this? A series of talks on Media Language, Writing for Print Media, Writing for Radio and Television addressed some of these issues head on.

External experts and guests from: [SwarajyaMag](#), [The Hindu](#), [Radio Mirchi](#) and [News9](#)

SIGMA: SYMPOSIUM ON INFORMATICS, GENETICS, MYCOLOGY AND ANTIBODIES

Dept. of Biosciences: 10 Feb 2018

The symposium deliberated on various issues related to the advancement of biological and medical research in the areas of genetics, mycology and antibodies. Lecture Topics included Genomes, Methylomes and Acetylomes, Endophytic Fungi: A Novel Source of Enzymes and Bioactive Compounds, Computer Aided Drug Design, Therapeutic Potential of Antisense Oligonucleotide-Mediated Exon Skipping Strategies in Duchenne Muscular Dystrophy, Exploring the connection between waste water and the spread of antimicrobial resistance, Human Genetics - Its Relevance and Scope and The Magic of Antibodies. Their applications in Human Welfare gave students and researchers plenty to think about in these diverse fields, inspiring them to develop more holistic solutions to problems in our society.

External experts and guests from: [Indian Institute of Science](#), [Vivekananda Institute of Tropical Management](#), [IIT Madras](#), [Dystrophy Annihilation Research Trust](#), [Institute of Bioinformatics and Applied Biotechnology](#) and [St. Ann's College for Women](#)

CATALYST INDUSTRY CONCLAVE 2018

10 Feb 2018

The unique event brought several members of industry (including CEO's, HR personnel, etc.) to SSSIHL for an immersive discussion on many topics rallied around the theme of the Criticality of Values-Based Education for Emerging Challenges in Business, Society and Leadership Development. It was organized by CATALYST, a voluntary graduate Placement Facilitation Program by SSSIHL alumni that helps SSSIHL graduates get placed with some of the best companies. In fact, several companies (including Fortune 500 firms) regularly recruit SSSIHL alumni.

Attendees got first hand insight into SSSIHL's unique set-up, and the speeches and panel discussions highlighted many challenges of the current state of play in industry and how SSSIHL's unique philosophy of Values-based Integral Education puts the University on a unique stand for recruiters. One CEO, whose company regularly recruits SSSIHL graduates, said, "There is no short supply of MBAs in India but the reason we recruit SSSIHL alumni is because they have the courage to live according to their values systems."

INNOVATION

Dept. of Management & Commerce: 12 Feb 2017

In today's increasingly competitive and fast changing business environment, a multitude of variables necessitates a business to innovate. Some of the major ones

include globalisation, increasing competition, fast advancing technology and changing workforce demographics (including an increasingly mobile workforce). Perhaps the most pressing need for innovation is due to the pace of increase of consumer expectations.

The interactive seminar provided students with integrative, real world, and contemporary perspectives on effectively managing innovation for sustainable profitable growth. Blending useful concepts, frameworks, and tools with insightful and actionable inputs, the sessions helped students understand how to effectively manage innovation for a sustainable competitive advantage and equipped them with an entrepreneurial mindset. They also learnt insights into formulating and implementing winning innovation strategies, driving growth through innovation and entrepreneurship, and how to foster creativity and develop an innovative, organizational DNA learning approach.

External experts and guests from: [Praxight Partners](#)

CHALLENGES OF THE EMERGING DIGITAL ECONOMY

Dept. of Management & Commerce: 16-17 Feb 2018

The digital economy is transforming the lives of people beyond recognition. It influences and impacts all of us, directly or indirectly - consumers, producers, investors, exporters, importers, public policy makers, academics, students, consultants, administrators, lawmakers, etc. In an effort to address these challenges, the Management Development Programme brought seven experts to deliberate on issues such as: Impact of the Digital Economy, Cash to Cashless – Is India Ready, Smart, Safe and secure connected world, Big data - Science in the new age world, Driving into the Future – Leveraging Digital, Digital Banking and the Digital Economy.

External experts and guests from: [thyssenkrupp Aerospace](#), [American Embassy, New Delhi](#), [Qualcomm India](#), [Quattro Global Service](#), [Ashok Leyland](#), [Hotfoot Technologies](#), [BHEL](#) and [Tata Consultancy Services](#)

THE INTERNATIONAL CONFERENCE ON SPECIALIZED, AYURVEDIC & INNOVATIVE FOODS & NUTRITION SUMMIT (SAIFNS) 2018

Dept. of Food & Nutritional Sciences: 16-17 Feb 2018

The largest international conference at SSSIHL this year explored the bridge between ancient food traditions and emerging food technologies. The event was an intellectual platform for over 150 participants consisting of academicians, scientists, dieticians, nutritionists, industrialists, food innovators & entrepreneurs, agriculturalists, culinary specialists and research students from all over India as well as other parts of the world.

The interdisciplinary theme of the event was to integrate the valuable ancient knowledge of Ayurvedic nutrition with the modern specialised nutritional perspectives and recent innovations in foods using modern technology. It explored holistic solutions for food and nutrition challenges to ensure optimal nutrition and longevity for the present and future generations.

The broad themes discussed included: Specialised, Holistic & Integrative Nutrition; Indian Food Culture & Vedic Nutrition; Current Research Techniques in Food & Nutritional Sciences; Emerging & Novel Food Processing & Preservation Technologies and Specialty, Innovative & Convenience Foods.

External experts and guests from: [Institute of Cytology and Preventive Oncology](#),

[DFRL-DRDO](#), [National Institute of Nutrition \(ICMR\)](#), [Fortis Escorts Heart Institute](#), [Lords Institute of Medical Sciences and Research](#), [Mushroom Research laboratory ICAR-IIHR](#), [Periyar University](#), [Ayurvedashramam Pvt. Ltd.](#), [Central Institute of Home Science College](#), [University of Mauritius](#), [Sri Sathya Sai General Hospital](#), [Cape Town University of Technology](#), [Kerala Agricultural University](#), [Trans Disciplinary University](#), [CSIR-National Institute for Interdisciplinary Science and Technology](#), [Diabetic Food International Pvt. Ltd.](#) and [Memorial Sloan Kettering Cancer Center](#)

FRONTIERS IN CHEMICAL SCIENCES

Dept. of Chemistry: 24 Feb 2018

The conference created a platform for researchers, scholars and educators to present and discuss the most recent innovations, trends, concerns, practical challenges encountered and the solutions adopted in the field of Chemistry. The premise was that Chemistry is the Central Science, and deeply ingrained into so many areas of business, government, and environmental management that a background knowledge in the subject is useful in varied fields like product development, marketing, management, computer science, technical writing, and even law.

Topics covered by the experts (all of whom were SSSIHL alumni) included 21st Century Chemistry, Rationale of Drug Design, Supramolecular Chemistry: A Chemistry of Non-covalent Interactions, Challenges in Chromatographic Techniques, Computational Chemistry: A powerful tool for researchers, Challenges in Chromatographic Techniques, Chemistry of Flavours and Fragrances and Omnipresent Corrosion.

External experts and guests from: [Indian Institute of Science](#), [Dayananda Sagar University](#), [Green Research & Development Centre](#), [IIT Madras](#), [Symrise](#) and [Hindustan Petroleum](#).

EXPLORING ENTREPRENEURSHIP

*Dept. of Management & Commerce:
28 Feb 2018*

Entrepreneurship—and the innovation it often brings in its wake—helps the country transition from dependence on obsolete systems and technologies to new, modern ones. This is particularly important in the world we live in today. The immersive symposium divided the programme into a broad framework of six parts – each being a stage of a start-up: Founder Focus, Inspiration, Ideation, Idea Pitching, Incubation and Starting up. The key learning point from the presentations was to see beyond the bright, successful side of entrepreneurs, and appreciate the amount of challenges and downturns they went through that actually made them strong and successful entrepreneurs. Students learnt that entrepreneurship is not just starting a company but rather the ability to constantly reinvent what we do by adding the magical ingredients of creativity, innovation and execution.

External experts and guests from: [Institute of Inspiring Innovation](#)



PYTHON FOR SCIENTIFIC COMPUTING

Dept. of Physics: 30-31 Mar 2018

Python is a programming language that has become increasingly popular by virtue of its simplicity and capability and is extensively used by corporations such as Google and Amazon in the areas of data mining and data processing. The workshop focused on python for education and research, and as a tool for using plots, visualizations and simulations, and advanced functions such as molecular dynamics and quantum simulations that will help teachers and researchers alike.

Students learnt not just the basics of Python but were exposed to the concept of loops, lists, tuples and dicts. They even coded sample programs at the computer labs.

External experts and guests from: [Capital One](#), [IBM](#), [Indian Institute of Science](#), [HSBC Data Processing and ARM](#)

DATA SCIENCE

Dept. of Mathematics & Computer Science: 30 Mar - 1 Apr 2018

Data Science is a multidisciplinary blend of data inference, algorithm development and technology in order to solve analytically complex problems. Its rapid evolution attributed to the widespread digitization of business processes globally. The workshop helped equip faculty members with a better understanding of Data Science. Topics covered included Matrix Algebra, Inferential statistics, Regression Analysis and Multi varied Analysis.

External experts and guests from: [DataScience Labs](#), [Hyderabad](#)



ACADEMIA

FACULTY ACHIEVEMENTS

FROM DELIVERING KEYNOTE ADDRESSES TO BEING INVITED AS A UNIVERSITY BOARD MEMBER, SSSIHL FACULTY REACHED SEVERAL PERSONAL MILESTONES DURING THE ACADEMIC YEAR 2017/18.

For a full report of all SSSIHL faculty Participation & Achievements in 2017/18, kindly visit sssihl.edu.in

MATHEMATICS AND COMPUTER SCIENCE

Sri Darshan Gera

- Invited Talk on Generative adversarial Network and Variational Auto Encoders, and conducted a hands-on lab, National Workshop on Deep Learning: Bridging Theory and Practice, University of Calicut, 22-24 Feb 2018.

Dr. Pallav Kumar Baruah

- Keynote Talk on Blockchain and Big Data, IEEE International Conference on Data Security, Kalasalingam University, Tamil Nadu, 11 Dec 2017.

Dr. S Balasubramanian

- Hands-on tutorial on Convolutional Neural Networks, National Workshop on Deep Learning: Bridging Theory and Practice, University of Calicut, 22-24 Feb 2018.

Dr. Krishna Kiran Vamsi Dasu

- Teacher Invitee, Eighty-third Annual Meeting of the Indian Academy of Sciences at NEHU, Shillong, 3-5 Nov 2017.
- Young Scientist Award 2017 in the field of Mathematical Sciences, Andhra Pradesh Akademi of Sciences (APAS), Andhra Pradesh Science Congress, Andhra University, 7-9 Nov 2017.

Dr. Srinath M S

- Invited Talk on Supersingular Isogeny-based Cryptography, National Workshop on Post-Quantum Cryptography, Society for Electronic Transactions and Security, Chennai, 27 Mar 2018.

PHYSICS

Dr. Gowrishankar R

- Invited Plenary Talk on Investigations of Long-lived isomers in transuranic actinides, 62nd DAE-BRNS Symposium on Nuclear Physics, Thapar University, Patiala, Punjab, 20-24 Dec 2017.
- Resource Person, National level workshop on Laser and Light, Department of Postgraduate Studies and Research, University College of Science, Tumkur University, Tumkur, 17-18 Aug 2017.

- Examiner for Practicals, Department of Electronics, Sri Krishnadevaraya University, Anantapur, 11-12 Dec 2017.

CHEMISTRY

Dr. G Nageswara Rao

- Filed a Patent Application for Spirobibenzopyrans and Analogues as Multitherapeutic Agents, 15 Jun 2017. The filing numbers are: PCT/IB2018/054280 (U.S.A.) and IN 201741020910 (India).

BIOSCIENCES

Dr. (Ms.) Seethalakshmi Laxmanan

- Co-Chairperson, National Seminar on Current Trends in Biosciences, 22-23 Jan 2018.

Dr. B S Vijayakumar

- Invited Ph.D. examiner and conducted a Ph.D. defense (viva voce), Bharathiyar University, Coimbatore, Tamil Nadu, May 2018.
- Evaluated 18 Doctoral Research theses for candidates from Bharathiyar University, Coimbatore, Periyar University, Salem and Bharathidasan University, Trichy, Tamil Nadu.

Mrs. B Anusha

- Invited Oral Presentation on Radical scavenging and reducing potential of Trachyspermum ammi L (Ajwain) plant extracts, National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.
- Invited Oral Presentation on In vitro anti-inflammatory activity of Ajwain (Trachyspermum ammi L) plant extracts, Pharma Transpire - 3rd International Conference on Design Development and Practice of Drugs, CES College of Pharmacy, Kurnool, Andhra Pradesh, 1-2 Feb 2018.

FOOD AND NUTRITIONAL SCIENCES

Dr. (Miss) N Srividya

- Best Oral Presentation Award for the paper, Nutritional quality and novel culinary applications of 'microgreens' - An emerging space age food crop, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher Learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.
- Best Poster Presentation Award for the paper, Agronomic bio-

fortification: A simple and low-cost strategy for the improvement of essential minerals, phytochemicals, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher Learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

- o Best Poster Presentation Award for the paper, Formulation and evaluation of vitamin fortified instant rasam mix, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher Learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

Dr. (Mrs.) M Srijaya

- o Invited Talk on Food irradiation: Scope and potential in processing and preservation of fruits and vegetables, National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.
- o Chaired Scientific Session on Food Processing Technologies, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.
- o Evaluator and Judge for Scientific Poster Sessions, Food Processing and Preservation, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.
- o Evaluator and Judge for Scientific Poster Session, Food

Technology, National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.

Dr. (Mrs.) Ambati Padmaja

- o Best Poster Presentation Award for the paper, Extraction and Characterization of Passion Fruit Peel, 26th Indian Convention of Food Scientists & Technologists, CSIR-Indian Institute Chemical Technology, Hyderabad, 7-9 Dec 2017.

Dr. (Ms.) Meera Manikkavachakan

- o Chaired Scientific Session for Oral Presentation on Food Technology, National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.
- o Chaired Scientific Session on Indian Food culture / Ayurvedic Nutrition, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher Learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

Prof. (Mrs.) B Andallu

- o Chaired Oral and Poster Presentations, and Delivered Invited Lecture on Phytoceuticals: Isolation, Identification and Assessment of Bioactivity (in vitro), National Conference on Advanced Research in Pharmaceutical and Chemical



Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.

- o Invited Talk on Protective effect of phytochemicals in *Pimpinella anisum* L. against H₂O₂-induced oxidative stress in human leukocytes, 105th Annual Session of the Indian Science Congress Association, Manipur University, 16-20 Mar 2018.

MANAGEMENT AND COMMERCE

Dr. (Mrs.) Swetha Thiruchanuru

- o Invited Talk on The Glory of Women: Nurturing her innate qualities to become an Entrepreneur, Women Empowerment Cell, Sri Sai Baba National Degree College, Anantapur, Dec 2017.

Dr. Sayee Manohar K

- o Resource Person for the topic, New Dimensions of Commerce in a Globalized Era - 2018, Marudhar Kesari Jain College for Women, Vaniyambadi, Tamil Nadu, 27 Feb 2018.

Dr. (Miss) Ch Radhakumari

- o Best Paper Award for the research paper, The SIR impact of demonetization – measure of long-term growth with statistical evidence, International Conference on Recent Trends in Technology and its impact on Indian Economy, Bathinda, Punjab, 24 Oct 2017.

Dr. (Miss) T R Rajeswari

- o Invited Talk on Sustainable Management Practices to Promote Welfare of the People and the Planet, National Conference on Emerging Trends in Management Practices in the Globalised Era, Sivakasi, Tamil Nadu, 2 Feb 2018.

ECONOMICS

Dr. (Ms.) M R Geetha Bala

- o Invited Talk on Inflation and Business Cycles, GATES Institute of Technology, Gooty, Andhra Pradesh, Dec 2017.

EDUCATION

Prof. (Miss) Madhu Kapani

- o Invited Talk, Value Education and The Role of Teachers, National Seminar on Advanced Trends in Value Education, University College of Education, Sri Krishnadevaraya University, Anantapur, 5 Dec 2017.

Dr. (Mrs.) P Lavanya

- o Invited Talk, Value Integration through Mathematics, National Seminar on Advanced Trends in Value Education, University College of Education, Sri Krishnadevaraya University, Anantapur, 5 Dec 2017.

ENGLISH LANGUAGE AND LITERATURE

Dr. Arun Kumar Behera

- o Resource Person, Interactive Meeting for R N Bajaj Global University, Bikaner at the Sambhram Academy of Management, Bangalore.

SUB-DEPARTMENTS AND OTHER LANGUAGES

Dr. (Miss) Kiron Bala Arora

- o Invited Talk on Seva as the way to True Education and Liberation, Sri Sathya Sai Gramin Jagriti project, Ambala, Haryana, May 2018.

Dr. N Venkatesha Rao

- o Received Bharath Jyothi Award for Outstanding Achievements in Literature, India International Friendship Society, New Delhi, 26 Mar 2018.
- o Invited Talks on the works of Vadiraja & Rare Commentaries, National Research Institute - Poornaprajna Samshodha Samsthanam, Bangalore, 5-12 May 2018.
- o Invited Talks on Sandhyadhikarana, Brahmasutra, Dwaita Vedanta Samskrit Conference - Srimannayaya Sudhaa Mahotsava, Poornaprajna Vidyapeeta Samskrit College, Udupi, Karnataka, 3-5 Jan 2018.

Dr. (Mrs.) M Praphulla

- o Invited Talk on Telugu Bhasha - Vaisishtyamu, Government Degree College, Uravakonda, Andhra Pradesh, 29 Aug 2017.

NEW FACULTY

- o Dr. Srinath M S, Asst. Professor, Dept. of Mathematics & Computer Science
- o Ms. Gorle Santoshi Kumari, Asst. Professor, Dept. of Mathematics & Computer Science
- o Dr. Kurma Rao Tyada, Asst. Professor, Dept. of Mathematics & Computer Science
- o Dr. Sampath Lonka, Asst. Professor, Dept. of Mathematics & Computer Science
- o Dr. A Sunil, Asst. Professor, Dept. of Chemistry
- o Sri Amit Sood, Associate Professor, Dept. of Management & Commerce
- o Sri Vivek Kapoor, Associate Professor, Dept. of Management & Commerce

STUDENT ACHIEVEMENTS

ORGANIZATIONAL VISITS

At the end of each academic year, final year graduating students from various departments go on official visits to reputed organizations to get a feel of how what they learn in the classroom is applied in the real world. Students are accompanied by a few faculty members on these trips.

During the academic year 2017/18, these included:

Physics

I M.Tech. in Optoelectronics & Communications students, Bangalore, 16-18 Apr 2017. Organizations visited:

CISCO, Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Whitefield, Bangalore (IT operations and Maintenance), Honeywell, FCI OEN Connectors Ltd., and Analog Devices India.

Food & Nutritional Sciences

III B.Sc. in Food Science and Nutrition & Food Technology and I M.Sc. in Food and Nutritional Sciences students, Anantapur Dist., Andhra Pradesh, 30 Nov 2017. Organizations visited:

Timbaktu Collective, Sri Shashi Industries and Orillet Foods International.

Management & Commerce

Anantapur Campus: I M.B.A. students, Andhra Pradesh, 20-21 Sep 2017, 13 Jan 2018 and 22 Jan 2018. Organizations visited:

SSSIHMS, Prasanthigram, Sri Sathya Sai Seva Organization, Prasanthi Nilayam, TVS Motors & Titan Watches, Hosur, UltraTech Cement, Andhra Pradesh

Prasanthi Nilayam Campus: I M.B.A. students, Andhra Pradesh and Tamil Nadu, 17-20 Apr 2017 and 20 Jan 2018. Organizations visited:

UltraTech Cement and limestone mines, Andhra Pradesh, TVS Motors & Titan Watches, Hosur, Tamil Nadu

PROJECTS & DISSERTATIONS

Listed below are selected topics / areas of postgraduate and professional programme projects and dissertations.

Mathematics & Computer Science

M.Sc. in Mathematics and M.Tech. in Computer Science

Multi label Classification, Lax Conjecture, 3D Median Filter, 3D Canny Based Level, Set Segmentation, Reversible Watermarking for Medical Images, Video Watermarking using DWT-Fractional Order SVD, Analysis of Intrusion Detection Systems using

Machine Learning, Spam Detection Analysis using Machine Learning Algorithms, A Fragile Watermarking method for Video Sequences

M.Tech. in Computer Science

Face Recognition in Videos using Apache Kafka and Spark Streaming, A Model for Feature Selection and Protein Interaction Extraction from Literature using Deep Learning and Topological Data Analysis, Application of HPC and Machine Learning for calculation of reserves, HBasechainDB - A Scalable Blockchain Framework on Hadoop Ecosystem, Data Sharing Platform on Blockchain, Real time depth estimation on embedded systems, Video Stitching for Panoramic View, Correlating the access of pages to reduce the bandwidth pollution of the Foot Print caching with Tag-less DRAM cache, Guided Back Propagation and Batch Normalization in CNN Architectures-Kid-



ney Renal stone segmentation and classification in CT images, Real-time Target classification in videos on embedded systems, Online long-term object tracking in video sequences, Automatic music tagging

II M.C.A.

Consignment Management In Hospital Inventory, HL7 interface Engine, DialIn Back End, DialIn Front End, Sai Mail Server, Dispensary Stock Management System, eNutriAnalyzer

Physics

M.Sc. in Physics

Femtosecond Laser Micromachining: Fabrication of Photonic and Microfluidic Structures, Development of an automated vehicle using an Open Source Hardware System, Level Structures in 252Mn, Synthesis, Fabrication and Designing of Lead based (PZT) and Lead-free based (BCZT/PVDF composite films) functional ceramics for Energy Harvesting Applications, First Principles Study of Electronic Structure, Thermoelectric and Optical Properties of NaTaO₃, NaTaO₂S, and NaNbO₃, Studies on Temperature Coefficient of Resistivity of V₂O₅-Graphite and V₂O₅-Cu₂Se Nanocomposites

M.Sc. in Materials Science

Supercapacitor Power Cells Based on Peanut Shell Derived Carbon, Enhanced β crystallinity in Halloysite Nanotubes Embedded Poly (Vinylidene Fluoride) Flexible Nanocomposite Thin Films and its Third Order Nonlinear Optical Properties, Fabrication of Poly (Vinylidene Fluoride) / CaCu₃Ti₄O₁₂ ceramic – polymer composite films and investigation of their dielectric properties, Synthesis, Fabrication and Designing of Lead based (PZT) and Lead-free based (BCZT/PVDF composite films) functional ceramics for Energy Harvesting Applications

M.Tech. in Optoelectronics & Communications

Radio over Fiber Link Design for Fronthaul of 5G Cellular Communication Systems, FPGA based Hardware Accelerator for Compute Intensive Image Reconstruction Algorithms, Hardware Acceleration of Encryption Algorithms using GPU, Thyroid Ultrasound Image Classification using Deep Learning, Smart Accurate Intelligent ElectroCardioGram (SAI ECG), Planning and Designing Scaled Networks Using Docker based GMPLS Network Element Simulators

Chemistry

M.Sc. in Chemistry

Synthesis, characterization and Non-linear optical activity of diarylidene-N-methyl piperidones, Use of Cation-doped Hydroxyapatite - Hydroxyapatite Nanorods - Amorphous Aluminium Hydroxide for Defluoridation of Water, Removal of Pharmaceutical Compounds from Aqueous Solutions by using Activated Carbon prepared from Sawdust: Kinetic, Equilibrium and Thermodynamic Studies, Investigations on the use of branched silver nanostructures for fluorescence enhancement in the

Surface Plasmon Coupled Emission Platform, Synthesis and Characterization of Benzopyrylium chlorides and their effect on amyloidogenesis

Biosciences

M.Sc. in Biosciences

Antimicrobial Activity of Neem Leaf Callus, Screening of clinically isolated multidrug resistant Escherichia coli for the presence of nitrofurantoin resistance genes, Screening of clinically isolated multidrug resistant Klebsiella pneumoniae strains for the presence of molecular determinants involved in antibiotic resistance, The role of metabolic derangement on amyloidogenesis of TDP-43 protein using yeast as a model organism, Mechanism of homocysteine induced over expression of chaperones and DNA repair proteins in glioma

Food & Nutritional Sciences

M.Sc. in Food and Nutritional Sciences

Comparative analysis of nutrients and phytochemicals in sunflower sprouts and in hydroponically grown microgreens, A study on nutritional assessment and school performance of children (7-11 yrs) in Anantapur district, Formulation and development of banana pulp and peel incorporated functional products, Quality evaluation of formulated fruit based dark chocolates containing cocoa butter alternatives, Development and shelf-life studies of soya bean/ pea/quinoa enriched gluten free cookies, Formulation and standardization of ready to eat convenience foods for type II diabetes, Mechanism of homocysteine induced overexpression of chaperones and DNA repair proteins in glioma

Management & Commerce

M.B.A.

Social Entrepreneurship: A Case Study analysis on its Sustainable development of 'The Timbaktu Collective', Consolidation of global service locations- study analysing drivers and trends for prediction, Impact of Emerging Digital technology on Air Transport in India, Implementation of Smart In-store Technology (SIST) in Indian Retail Outlets, Developing Marketing Strategy for Bathroom Fittings in Indian B2B market, Dividend Announcement and Market Efficiency in India, A Study of Distribution Fitting on Crude IOL Futures' Prices, A study on Payment Banks as an Effective Tool for Financial Inclusion in Ludhiana District, Punjab, A Study on Financial Literacy of Small Business Operators and College Teachers in Naga Kurnool, A study of the Management Philosophy of Bhagawan Sri Sathya Sai Baba, Employees' perception on role stress: A study in selected banks, Role of Music in Brand Communications, Marketing Segmentation, targeting and Positioning of SML Isuzu Ltd., Increasing Patient, Satisfaction for Sri Sathya Sai Mobile Hospital: A lean Six Sigma Intervention, A study on the possibilities of Blockchain in the Indian Banking and Financial Services Industry, Facebook Marketing: An analysis of brand page Sentiment and Engagement, Competency Framework: A Model Developed for Voluntary Health Care Organizations, Digitalization & Agriculture

Economics

M.A. in Economics

Estimating Value at Risk in Indian Stock Market, Sectoral Analysis of the Indian Stock Market – A Network Algorithm Perspective, Analysis of Demand for Money, An Econometric Analysis of Market Determined Interest Rates in India, Impact of Human Capital on Economic Growth India Experience, The Determinants of Automobile Demand in India, Impact of credit on agricultural production in India, Poverty in India: A comparative study of the BIMARU states, An Econometric Analysis of Foreign Investment Flows into India, Analysis of Invisibles Account in India's Balance of Payments, Analysis of Financial Derivatives impact on Indian Stock Markets, Nexus Between Democracy and Economic Growth in India

English Language & Literature

M.A. in English Language and Literature

Character is Destiny: A Celebration of Precious Ramotswe and other Characters in Select Novels of Alexander McCall Smith, Black Beauty through the Aristotelian and the Anthropomorphic Lens, The Impact of Portfolio Assessment on Enhancing the Writing Skills of ESL Learners, The Study of Narrative Technique in Ian McEwan's Atonement

National Examinations

GATE 18%	CSIR UGC-NET for JRF 5%
UGC-NET (JRF) 2%	UGC-NET (LS) 9%

This data pertains to final year postgraduate students who attempted these exams

GATE: Graduate Aptitude Test in Engineering

CSIR: Council of Scientific & Industrial Research
UGC: University Grants Commission
NET: National Eligibility Test

Examinations Pass Rates

94%

Undergraduate Programmes

97%

Postgraduate & Professional Programmes

NATIONAL EXAMINATIONS

A high percentage of SSSIHL postgraduate students qualified in national exams such as the GATE/JEST or the CSIR-UGC NET in 2017/18. The list below includes the national rank for each exam.

Ranendra Pratap Biswal (Chemistry)

48 UGC-NET (LS)

Abhinash Subba (Chemistry)

144 (CSIR UGC-NET for JRF)

Saroj Poudyal (Physics)

287 (GATE) | 80 UGC-NET (LS)

Kocherlakota Sai (Biosciences)

596 (GATE)

Ayyagari Ranga Shaarad (Computer Science)

713 (GATE) | UGC-NET (LS) | CSIR UGC-NET for JRF

Gouri Shanker (Physics)

744 (GATE) | 268 (CSIR UGC-NET for JRF)

Sushant (Chemistry)

1209 (GATE)

Ratul Sabui (Physics)

1510 (GATE)

Saurav Gurung (Biosciences)

1868 (GATE)

Satyajeet Mahapatra (Biosciences)

2265 (GATE)

Sai Naveen R (Biosciences)

2435 (GATE)

Gandla Saiteja (Computer Science)

10710 (GATE) | UGC-NET (LS)

P Manoj Kumar Reddy (Computer Science)

11708 (GATE)

Manish Kumar (Computer Science)

20643 (GATE)

S Sakrishnan (Management)

(UGC-JRF)

A Lakshmi (Home Science)

(NET-LS)

Bhabani Shankar Padhy (Management)

(NET-LS)

Amruthavarshini S (English)

(NET-LS)

GATE Graduate Aptitude Test in Engineering | CSIR (Council of Scientific & Industrial Research) | JRF (Junior Research Fellowship) NET (National Eligibility Test) | LS (Lectureship)

All ranks are national (All India Rank)

RESEARCH

CENTRAL RESEARCH INSTRUMENTS FACILITY (CRIF)

SSSIHL CENTRAL RESEARCH INSTRUMENTS FACILITY (CRIF), BASED AT THE PRASANTHI NILAYAM CAMPUS, IS ONE OF THE FEW SUCH FACILITIES IN THE COUNTRY (AND THE FIRST IN A RURAL LOCATION) THAT HOUSES ADVANCED CHARACTERIZATION/ANALYTICAL TOOLS TO CARRY OUT TRANSLATIONAL RESEARCH IN VARIOUS AREAS OF SCIENCE AND TECHNOLOGY SUCH AS PHYSICAL, BIOLOGICAL, CHEMICAL, MATERIALS SCIENCE, FOOD AND ALSO COMPUTATIONAL AND INTERDISCIPLINARY AREAS.

A Ph.D. is a person who helps others through his research and develops the country.

Sri Sathya Sai Baba
Revered Founder Chancellor

The facility, built with a funding of ₹45 crores with the kind support of Sri Sathya Sai Central Trust, hosts a range of cutting-edge instruments and laboratories as listed on the opposite page. It will significantly strengthen the existing research facilities at SSSIHL by providing state-of-the-art infrastructural facilities under a single roof.

This will allow faculty and postgraduate and doctoral students at the Institute to accelerate their research work in all the major research areas of the Faculty of Sciences - Health, Energy and Environment. It will enable them to keep pace with the scientific developments taking place globally; and to publish their research findings in peer reviewed high impact journals; and through their concerted efforts to carry out research in cutting edge areas of Science and Technology and contribute to the needs of the society at large.



Full-time technical assistants with specific expertise operate and maintain the instruments and laboratories.

SSSIHL CRIF facilitates the strengthening of interdisciplinary health related research collaborations between SSSIHL and Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS). Some of these include: Regenerative Medicine & Tissue Engineering, Rapid Detection of Endemic Diseases, Diabetic Retinopathy, Development of Cost Effective Multi-Modal Microscopes, SPCE-based Point of Care Devices, etc.

CORE FACILITIES

The following core facilities at CRIF are shared resources offering a range of services to the research community at SSSIHL:

- Femto Fab
- Electron Microscope Facility
- NMR & Mass Spectrometry Facilities
- Materials Characterization Facility
- Thermal and Optical Characterization Facilities
- Liquid Nitrogen Facility
- Central Utilities Facility
- Optical Imaging and Integration

LABORATORIES

In addition, CRIF hosts the following labs:

- Wet Chemistry Laboratories
- Functional Materials Laboratory
- Water Research and Electrochemistry
- Bio-Safety Labs: Level 1 and Level 2
- Computational Science and Plasmonics



RESEARCH HIGHLIGHTS

TO VIEW THE CURRENT RESEARCH AREAS FOR EACH DEPARTMENT, VISIT SSSIHL.EDU.IN

GIVEN BELOW ARE HIGHLIGHTS OF SELECTED RESEARCH WORK AT SSSIHL IN 2017/18.

SCIENCES

DEVELOPMENT OF SMALL ORGAN IMAGING GAMMA CAMERA SYSTEM

Thyroid diseases are among the most common endocrine disorders worldwide. In India alone, it is estimated that 42 million people suffer from thyroid diseases. Early diagnosis and treatment remain the cornerstone of medical management. The development of a portable thyroid-specific imaging system, which serves as a cheaper alternative to the traditional large field and expensive gamma cameras is being pursued at the Department of Physics. The spatial resolution is expected to be better than the traditional Gamma Cameras. The Department of Physics has developed a prototype of Small Area Imaging Gamma Camera (SAI-GC), with all digital Front End Electronics and Data Acquisition System. Relevant software is being developed for Image Reconstruction and Processing of gamma camera images to detect the cases of abnormalities like hyper and hypothyroidism.

BIG DATA ANALYTICS AND HIGH PERFORMANCE COMPUTING

The Department of Mathematics & Computer Science are working on DNA sequence Analysis and Structural Biology using High Performance Computing (HPC) and Machine Learning (ML) tools. They also envisage providing a framework for compressed storage, analysis and secured sharing of the genome sequence. They are working

to build an immutable data storage and management platform in Big Data environment using Scalable Blockchain.

Study on issues of Interoperability of Blockchain is opening up ways to develop platform for Fraud Free financial transactions, Comprehensive Health Insurance Management systems, E-voting platform etc. The researchers intend to use HPC technology to detect fake news and rumours using epidemic models and large graphs. Efforts are on to demonstrate that Artificial Learning (AI) and Blockchain together can provide solutions to many real-life problems and finally deliver the promise that AI holds. Work on predictive analytics in healthcare, such as effective treatment for Perinatal depression, Automatic segmentation and detection of stones in case of Renal CT images, early detection of cardiac disorders from CT images is also underway.

RESEARCH BASED REFORMS IN PHYSICS INSTRUCTION - CLASSROOM AND LABORATORY

One of the ways of improving the quality of Physics education is through research-based methodologies involving concept inventories, active learning, clicker methods, interactive lecture demonstrations, computer simulations & virtual experiments and context rich problems. The faculty members involved in undergraduate teaching are involved in the design and development of courses based on physics educational research practices in which efficacy of research-based physics learning strategies are tested and implemented in classrooms with active participation of learners. This is sponsored by the Government of Karnataka under the scheme of establishment of Centers of Innovative Science Education (CISE) through VGST, DST, Karnataka.

SYNTHESIS AND SEMI-SYNTHESIS OF NOVEL MOLECULES WITH POTENTIAL THERAPEUTIC APPLICATIONS

In this regard, spirobibenzopyrans and andrographolide have been identified as the novel synthetic and semi-synthetic pharmacophores respectively. In the due course of research, we have discovered a new class of spirobibenzopyrans with potent anti-cancer activity. A library of over 40 novel spirobibenzopyrans have been synthesized and studied for their therapeutic applications. On the other hand, andrographolide is known to possess a wide range of biological activities such as anticancer, antidiabetic, anti-inflammatory, etc. Currently, isolation of the active compound andrographolide from *Andrographis paniculata* and further synthesis of derivatives as potential leads against various diseases is under progress.

DEFLUORIDATION OF WATER BY POLYMER-METAL ION NANOCOMPOSITES: SYNTHESIS, CHARACTERIZATION AND THEIR APPLICATION STUDIES

Fluoride has a tendency to disperse into ground water from the rocks and soil. The excess amount (≥ 1.5 mg/L) of fluoride intake leads to fluorosis, collagen break down and disruption of immune system. The Geographical Information System (GIS) aided assessments of the ground water of the Rayalseema region of Andhra Pradesh, India revealed that more than 70% of the villages surpass maximum limit of fluoride (1.5 mg/L) defined by the World Health Organization (WHO) and Bureau of Indian Standards (BIS).

Therefore, the development of cheaper, robust, eco-friendly, and easy to use materials for defluoridation of drinking water would be the best assist to extenuate this 'fluorosis menace'. The Department of Chemistry is actively engaged in the synthesis of potential

adsorbents based on polymer metal nanocomposites for effective removal of fluoride from ground water.

SURFACE PLASMON-COUPLED EMISSION BASED BENCH-TOP DEVICE FOR CARDIAC TROPONIN T QUANTIFICATION

Troponin T (cTnT) measurement is important for ruling in or ruling out heart attacks and evaluation of patients with acute coronary syndromes. With the inclusion of high-sensitivity cTnT (hs-cTnT) assays, an early and more frequent diagnosis of AMI has been made possible. However, there is an increased need for individualized care in patients with heart disease, especially in resource limited settings. Ironically, the reliability, sensitivity and rapid diagnostics of current cTnT detection platforms come with the need for sophisticated instrumentation due to the non-specificity of the existent low-cost methods and increasing health care expenditure.

The researchers at the Department of Chemistry are engaged in the design and development of a SPCE based bench-top device for cTnT quantification resulting in near real-time cardiac damage assessment, and clinical decision making, in rural India and emergency conditions.

The current capital-intensive technology that is in use towards the quantification of cardiac Troponin T, restricts its reach to a large segment of the Indian population. A low-cost affordable technology would help widen the impact and also to render timely treatment during first aid and emergency conditions.

DETECTION OF ANTIMICROBIAL RESISTANCE GENES IN BACTERIAL CULTURES AND CLINICAL ISOLATES

Drug resistant bacteria have been the

major causes of increased morbidity and mortality affecting the vulnerable patients with decreased immunity. They are also one of the major causes of nosocomial infections in India. Antimicrobial resistance is a major clinical challenge in treating patients infected with antibiotic resistant bacteria. Hence, understanding the mechanisms of antibiotic resistance among clinically isolated bacterial pathogens may help in developing appropriate intervention strategies to tackle this global menace.

The researchers intend to gain insights into the mechanisms of antibiotic resistance being employed by the pathogens and their capacity for horizontal gene transfer using whole genome sequencing. Scant information is available on WGS based genomic analyses of clinical isolates from India.

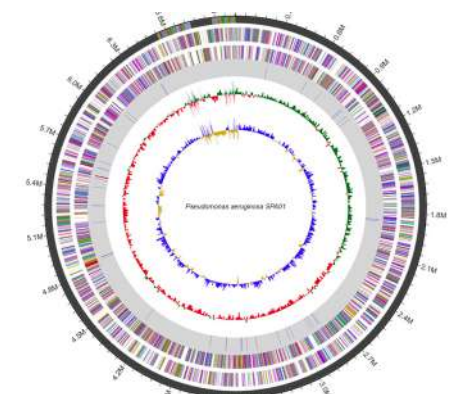
The proposed research efforts could offer good insights into the prevalence of the antibiotic resistance genes (AMR genes) in the Indian subcontinent. Our laboratory is involved in the characterization of AMR genes using a range of molecular tools among the isolated nitrofurantoin resistant cultures.

RECEPTORS IN THE MICROGLIAL INFLAMMATORY RESPONSE: IMPLICATIONS FOR MULTIPLE SCLEROSIS

Researchers at the Department of Biosciences are actively trying to understand whether secreted ATP has a role in the LPS and cytokine (TNF α and IFN γ) induced calcium response, expression of critical genes in inflammation, and activation of phagocytosis and chemotaxis. This will help to understand the role of P2 receptors and downstream signaling events involved in the processes. It will also help us to delve into the details of the role of P2 receptors in a mouse model of Multiple Sclerosis and help identify possible therapeutic targets. It may be noted that some P2 receptor

inhibitors are currently used as drugs, such as for thrombosis. Some are in phase II and phase III clinical trials for various cancers. The research work will validate these drugs for mouse model of Multiple Sclerosis.

This work proposes to reduce the lag period of these drugs for human Multiple Sclerosis trials. It will have considerable impact on understanding and identifying possible therapeutic targets in other neuro-degenerative diseases. Many genes that are induced by exogenous treatment of ATP (Hsp90 and HDACs) are known therapeutic targets in various diseases and hence inhibiting up-regulation of these genes by targeting purinergic receptors will have a favourable therapeutic effect. These diseases include Parkinsons, retinal degeneration and Alzheimer's disease.



MANAGEMENT & COMMERCE

SPIRIT AT THE WORKPLACE (S@W): A STUDY OF S@W IN BUSINESS ORGANIZATIONS IN INDIA

The dawn of the twenty first century has witnessed what appears to be a turnaround with many business organizations laying emphasis on ethics / values, Corporate Social Responsibility and sustainability, with a focus on multiple stakeholder welfare maximization. Business organizations in many parts of the world still maintain a skewed attention to mere economic criteria, even at the cost of societal and environmental factors, leading to a sense of hollowness, 'something missing,' in the organization. Using the phrase that has become widespread today, we seem to have lost 'spirit at the workplace' also referred to as 'S@W' or 'spirituality at the workplace' or 'workplace spirituality'.

This exploratory research study, investigates the construct 'Spirit at Work' in an Indian context. This research uses extant literature coupled with empirical investigation of the perspectives and the perceptions of managers in Indian business organizations. It has adopted a multiparadigmatic approach using a mix of quantitative and qualitative methods.

The study identified new elements of S@W specific to the Indian context and thereby highlighted the differences in the perceptions and views of S@W between the Indian and Western context. It has drawn upon insights from Karma Yoga principles, an Indian psycho-philosophical equivalent of S@W. It further depicted S@W as a dynamic experience – as a journey to be undertaken by business organizations as well as business managers from a basic level to an advanced level.

In addition, it has presented both an individual-centric and an organization-centric approach to S@W. It shows that

individual values and attitudes play a role in integration of S@W through 'Personal attitude' at the basic level and 'Transpersonal work orientation' at the advanced level of the S@W journey. Unlike earlier studies, this study indicates that organizational culture and philosophy too have an explicit role to play in the integration of S@W through 'Engagement at the workplace' at the basic level and 'Transorganizational work orientation' at the advanced level of the S@W journey.

DEVELOPING THE CONCEPT AND PRACTICE OF 'INCLUSIVE BUSINESS' FOR POVERTY ALLEVIATION: A STUDY OF SELECT ORGANIZATIONS IN INDIA

This research work focuses on the concept and applications of Inclusive Business (IB) - businesses that enable the economically-weaker section of the populace to participate in market activities to gain by becoming part of the value-chain of firms as suppliers, distributors, employees or consumers. The study addresses three foundational issues, with the aim of advancing knowledge in this field relating to IBs: What is Inclusive Business, What is the process of value creation in an Inclusive Business, and How can organizations formulate strategies for developing inclusive business models?

It has adopted a qualitative research design using the case-study method. The study of successful and unsuccessful IBs have led to three unique and important contributions to the body of knowledge available on the theory and practice of IBs.

The first contribution aims at advancing the theoretical foundations of the field, by proffering a framework and a working definition for IB. The framework bridges—for the first time—ideas of human development and business strategy, by delineating how integration of the disenfranchised communities into value-chains can and must lead to

the expansion of human capabilities on one hand, and enhanced firm competitiveness on the other.

The second contribution of this study is the operationalization of the Human Development and Capabilities Approach (HDCA) through the development of a human-centric value-chain intervention (HC-VCI) framework. The HC-VCI framework is a first-of-its-kind management tool that focuses on helping the poor transition into market economies, rather than focusing exclusively on firm efficiency or competitiveness. The HC-VCI framework offers a novel perspective to human lives, where humans are valued not as factors of production but as social agents with human rights. These findings resonate with the latest research on well-being, human development and happiness.

The third contribution is the development of a framework for formulating strategies for developing successful inclusive business models. This contribution is divided into two parts. In the first part, the study identifies specific contingencies that IBs face, and relevant capabilities needed to overcome the contingencies. Specifically, the contingency-capability framework developed in this study points towards a holistic view of strategy. In the second part, the study develops a process model of strategy formulation in IBs.

ECONOMICS & HUMANITIES

FINANCIAL AND MACROECONOMIC MODELLING

Research at the Department of Economics is primarily focused on financial and macroeconomic modelling leading to policy analysis on the domestic and international economies. While the studies relating to economic policies, financial markets and their interlinkages in the emerging economies

were taken up on the international front; the research on the domestic economy concentrated on diverse issues relating to various aspects of the Indian economy. These include topics like determination of exchange rate, inflation, oil prices, automobile demand, modelling volatility in stock markets, measuring operational efficiency in Indian banks, studies in the fiscal aspects relating to GST, fiscal policy, etc.

The research is quantitatively oriented, relying on leading edge techniques in statistics and econometrics in delivering research publications of a high standard. Apart from producing high quality research publications in reputed national and international journals, the faculty at the department have also been regular participants in the conferences and seminars conducted by prestigious institutions across India.

As an outcome of macroeconomic modelling, a doctoral research was done in the area of Current Account of India's Balance of Payments Under the New Economic Policy Regime. The summary is as follows:

One of the most successful aspects of India's structural reforms has been the strength and dynamism of its external sector. The sector continues to be robust, despite sharp increase in India's imports over exports leading to huge trade deficits. India's balance of payments has recorded large and persistent surpluses, with foreign exchange reserves currently around US\$ 400 billion. Increased earnings from exports of services and remittances coupled with enhanced foreign investment inflows have provided strength to the external sector. The overall objective of this work is to identify and quantify linkages between the domestic and world economic developments on the one hand and the current account of India's Balance of Payments on the other, so as to make them more meaningful in terms of policy initiatives. Applied econometric methodology in keeping with the modern time series analysis is utilized

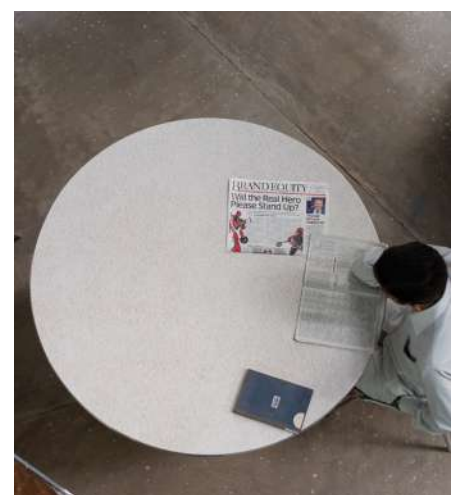
to ensure rigorous analysis and valid inferences.

THE 'I' OF WOMAN THROUGH THE EYE OF SHAKESPEAREAN DRAMA

The thesis is an investigation of the nature and locus of the feminine as represented in the aesthetic universe of the Shakespearean oeuvre. About 20-25 plays of Shakespeare have been reviewed in this study, using variables such as the trappings of patriarchy, agency and the principle of androgyny. This triangulation helped in mapping the complexity of human behaviour and also minimised the intrinsic shortcomings of any single approach of the feminist coterie. Whereas some texts were more viable for particular kinds of interpretations, the others refused to render meaning when subjected to certain other theories, owing both to formal principles and the specificity of the content.

Each chapter reads a cluster of plays and traces a subliminal and discontinuous emergence of notions associated with feminine identity. There are some counterintuitive findings on the attribution of evil on the nexus of femininity and agency. The study discovers how the conceptions of androgyny in the human personality, and the uroboric unity of being, help in negotiating selfhood as transcendent of gender dispositifs.

The plays are, more or less, an alibi. The single desideratum that has guided this disquisition is inclusion, even at the risk of a rupture of coherence. The conclusion highlights how Shakespeare balanced his imagination with reality to produce some of the most enduring portraits of women in the whole of world literature. Reconnaissance of gender and its performativity, through the trope of female characters in Shakespearean drama, unravelled inclusion and relatedness as the core of femininity.



RESEARCH SCHOLAR ACHIEVEMENTS

CHEMISTRY

Sri Swayamsiddha Kar

- o Filed a Patent Application for Spiro-benzopyrans and Analogues as Multitherapeutic Agents, 15 Jun 2017. The filing numbers are: PCT/IB2018/054280 (U.S.A.) and IN 201741020910 (India).

Sri Sai Giridhar S

- o Poster Presentation on Diagnostic role and association of Lp-PLA2 and biochemistry markers with CAD, 69th Annual Conference of the Cardiological Society of India, Kolkata, 30 Nov-3 Dec 2017.

FOOD & NUTRITIONAL SCIENCES

Miss Ashrita C Haldipur

- o Completed a certified online course on Systematic Review and Meta Analysis, authorized by John Hopkins University, offered through Coursera, Jun 2017.
- o Completed a certified online course on Metabolomics: Understanding metabolism in the 21st century conducted by University of Birmingham through Future Learn, Oct 2017.
- o Completed a certified online course on Health Research Fundamentals, offered by National Institute of Epidemiology, ICMR, Chennai, Aug-Oct 2017.

Miss Manjula Devi Ghoora

- o Best Oral Presentation Award for the paper, Nutritional quality and novel culinary applications of 'microgreens' – An emerging space age food crop, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.
- o Completed a certified online course on Systematic Review and Meta Analysis, authorized by John Hopkins University, offered through Coursera, Jun 2017.

MANAGEMENT & COMMERCE

Sri G Aditya

- o Presented original work on Stock market Sentiment Analysis using twitter tweets, Doctoral Summer School on Research Methods and Research Development, IIM Ahmedabad, 1-5 Apr 2018.

Sri K J Srinivas

- o Won the First Prize for an Idea Presentation, Doctoral Summer School on Research Methods and Research Development, Indian Institute of Management, Ahmedabad, 1-5 Apr 2018.

SAKURA EXCHANGE PROGRAM TO JAPAN

As part of prestigious SAKURA Science Exchange Program organized by the Japan Government, SSSIHL teachers, doctoral research scholars and a research associate from the Dept. of Biosciences visited Japan Advanced Institute of Science and Technology (JAIST), Japan, 21-31 Jul 2017.

Teachers

Sri K K Sai Anand
Dr. A S Vishwanathan

Research Associate

Dr. K N Naresh

Doctoral Research Scholars

Sri P Sujith Kumar
Sri S Aswath Narayan
Sri S B Sai Krishna
Sri T N Girish
Sri Aiyer Kartik Sathyanarayan
Sri K K Jayanth
Sri S Skanda

The research areas to which the scholars were exposed included Biopolymers, Hydrogels, Membrane dynamics using liposomes, Electrochemical techniques for bio-fuel cells, Bio-molecular NMR and Replica Exchange Molecular Dynamics (REMD) simulations.

The trip also gave them a preview into unique Japanese culture through their interactions with the Japanese people and visits to various places in Komatsu, Kobe, Kanazhawa, Kyoto and Tokyo. Notable was their visit to the traditional Buddhist Sensō-ji temple in Tokyo.

Noteworthy people who made the visit to Japan immensely successful were Prof. Noriyoshi Matsumi, faculty member, JAIST, Sri Chablani and Sri Ryuko Hira, Trustee, Sri Sathya Sai Central Trust.



RESEARCH PROJECTS

SSSIHL CONTINUES TO PURSUE NEED-BASED RESEARCH THAT WILL HELP ALLEVIATE PROBLEMS AFFECTING THE POORER SECTIONS OF SOCIETY.

DURING THE ACADEMIC YEAR 2017/18, THE TOTAL VALUE OF ONGOING PROJECTS AT THE UNIVERSITY WAS ₹8 CRORES.

MATHEMATICS AND COMPUTER SCIENCE

Big Data Analytics and High Performance Computing

Maestro Technology, USA

PHYSICS

FIST (Fund for Improvement of Science & Teaching Infrastructure)

Department of Science & Technology (DST)

Research Based Reforms in Physics Instruction: Classroom and Laboratory

Vision Group on Science and Technology (VGST), DST, Govt. Karnataka

Design and Development of Small Organ Imaging Gamma Camera System

DST

CHEMISTRY

Synthesis of novel Andrographolide derivatives as potential anticancer and antibacterial agents

Council of Scientific and Industrial Research (CSIR)

Defluoridation of Water by Polymer-metal Ion Nano-composites: Synthesis, Characterization and their Application Studies

Science and Engineering Research Board (SERB)

Surface Plasmon-Coupled Emission based Benchtop Device for Cardiac Troponin T Quantification

DST – Instrumentation Development Programme (IDP) Technology Development Programmes (TDP)

ANIRVID: A Cellphone based Point-of-Care Diagnostic Device to Evaluate the Effect of Alternative Therapeutic Interventions on Depression and Heart Ailments

Tata Education and Development Trust

Development of Automated microfluidic -Surface Plasmon Coupled Emission Chip towards Real Time Protein & DNA detection

Centre for Advanced Sensor Technology, University of Maryland, USA

BIOSCIENCES

Augmenting Postgraduate Teaching & Research Facilities in Dept. of Biosciences

DST FIST

Detection of Antimicrobial Resistance Genes in Bacterial Cultures and Clinical Isolates

OMIX Research and Diagnostic Laboratories Pvt. Ltd.

Perturbation in Metabolic pathways might drive Avascular Necrosis of Femoral Head by modulating bone biology: Mechanisms, Potential biomarkers and therapeutic targets

DST

Mechanism of ATP secretion and the role of ATP-activated P2 receptors in the Microglial Inflammatory response: implications for Multiple sclerosis

Department of Biotechnology (DBT)



RESEARCH PUBLICATIONS

SSSIHL FACULTY CONTINUED TO PUBLISH THEIR RESEARCH FINDINGS IN HIGH IMPACT JOURNALS DURING THE ACADEMIC YEAR 2017/18.

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Publications in peer reviewed Journals

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SPECIAL ANNUAL EVENTS

THE SPECIAL ANNUAL EVENTS RELATE TO THE DEVOTIONAL, CULTURAL, PHYSICAL AND SERVICE DIMENSIONS OF SRI SATHYA SAI VALUES-BASED INTEGRAL EDUCATION. THEY ARE ORCHESTRATED TO BRING OUT THE LATENT VALUES AND GOOD QUALITIES IN STUDENTS AND TEACHERS. A LOT OF PLANNING AND EFFORT GOES INTO EACH OF THESE EVENTS.

ALL STUDENTS PARTICIPATE IN THESE EVENTS IN ACCORDANCE WITH THEIR INDIVIDUAL SKILLS AND TALENTS.

SUMMER COURSE IN INDIAN CULTURE & SPIRITUALITY

9-11 Jun 2017

Education is no bookworm affair. The process must include the study and appreciation of all trades, professions and guilds. It must encourage the acceptance of the good and rejection of the bad. Spiritual education is not a distinct and separate discipline. It is part and parcel of all types and levels of education. In fact, it is the very foundation on which a lasting edifice can be built. Secular and spiritual education are like the two halves in the seeds of pulses – the germ that sprouts in-between is fed by both.

Sri Sathya Sai Baba

Revered Founder Chancellor

The Summer Course in Indian Culture & Spirituality—blessed by Bhagawan Baba in the current format of three days—exposes students of the university to the rich cultural and spiritual heritage of Bharat. Moreover, it orients students into Bhagawan Baba's educational philosophy and gives them deep, first hand insights into how they can directly benefit from this unique institution.

The central themes of this year's event were lessons learnt from two particular discourses of Sri Sathya Sai Baba in 1984: Mama Dharma - Message of the Gita, and Karmanye vadhikaraste - Right to do action, not the fruits.

The morning sessions comprised of talks by external guests, a quiz on Bhagawan Baba's teachings, a musical presentation and panel discussions on Work, Worship and Wisdom and the SAience of Diet and Health: Ancient and Modern Perspectives.

The evening sessions, at Sai Kulwant Hall, saw creative talks by students across the campuses of the university on topics such as Our Culture, Our Strength, Our Beloved Swami, The Bhagavad Gita, Tyageinaike Amrutatva Manashuhu, and Sai, the Essence of Sweetness.

The post-dinner paranayam sessions consisted of invited speakers—typically alumni and senior teachers of the university—sharing their unique and divine experiences in the physical presence of the Revered Founder Chancellor the university, Bhagawan Sri Sathya Sai Baba.

PRASANTHI VIDWAN MAHASABHA

5-11 Oct 2017

The evening programmes during seven days of the Veda Purusha Saptaha Jnana Yagna during Dasara are held at Sai Kulwant Hall, Prasanthi Nilayam under the

auspices of the 'Prasanthi Vidwan Mahasabha', where many speakers—primarily students and functionaries of Bhagawan's educational institutions—address the gathering on topics concerning spirituality and philosophy, Bhagawan's teachings and experiences of devotees.

The topics for Prasanthi Vidwan Mahasabha 2017 were: Origins of the Veda Purusha Yagna, The Greatest Mystery of the Universe, Faith in His Divinity, and The Mother Divine.

ANNUAL CONVOCATION

22 Nov 2017

Sri Sathya Sai Institute of Higher Learning (Deemed to be University) held its 36th Annual Convocation at Sai Kulwant Hall, Prasanthi Nilayam in the Divine Presence.

The chief guest was Prof. Anthony R West, Professor of Electroceramics and Solid State Chemistry, Dept. of Material Science and Engineering, University of Sheffield, U.K. Prof. West has dedicated his professional life to field of solid state chemistry with special interest in the synthesis of new oxide materials, their crystal structures and electrical properties.

The format, planning and execution of the SSSIHL convocation ceremony is second to none. The ceremonial procession was led by the university brass band, two students carrying the University Standards on either side of the Registrar (who carried the Ceremonial Mace). Other members of the procession included the Chancellor, Vice-Chancellor, Deans and the Heads of Departments along with the Chief Guest, members of the Sri Sathya Sai Central Trust and the Board of Management.

Following the invocatory veda chanting, the Vice-Chancellor, Prof. K B R Varma prayed to the Revered Founder Chancellor to declare the convocation open. The Convocation was then

EDUCATION

declared open in the Divine voice of Bhagawan Baba.

The programme included speeches by the Vice-Chancellor, the chief guest and the Revered Founder Chancellor (video).

Following this, 470 candidates for the various programmes of study were admitted to their various degrees (undergraduate, postgraduate and professional programmes as well as 18 Gold Medallists, and 12 Ph.D. awardees) by the Honourable Chancellor, Justice M N Venkatachaliah, former Chief Justice of the Supreme Court of India.

Annual Convocation Drama

The evening session consisted of the Annual Convocation Drama, written, directed and performed by the students of the University.

Titled Sankeertana Saaram (the Soul of singing), the story focused on the personal voyages of two characters, Chakrapani (the lead singer) and Raghupathi, and the challenges they face in trying to take the Lord to every home in a world that only seeks the pursuits of pleasure, and how that quest ultimately leads them to the wise shores of the final destination that every heart beats for, the Lord Himself.

All-Round Gold Medallists

Kotha Hridhay Keerthana

Anantapur Campus - Master of Science in Food and Nutritional Sciences

Akshay Rao

Prasanthi Nilayam Campus - Master of Business Administration

Nitin Ranganathan

Brindavan Campus - III B.Sc. (Hons.) in Chemistry

Shiva Rama Krishna Naidu K

Muddenahalli Campus - Bachelor of Business Administration

Gold Medallists

Amrit Kumar, M.Tech. in Computer Science

T S S Babu, M.Tech. in Optoelectronics and Communications

Rahul Raju Pattar, M.Sc. in Mathematics

Santosh C R, M.Sc. in Physics

Sai Prasad Nayak, M.Sc. in Chemistry

Pankaj Kumar, M.Sc. in Biosciences

Sayel Basel, M.A. in Economics

L V S V Durga Prasad, B.Sc. (Hons.) in Mathematics

J Kaushik, B.Sc. (Hons.) in Physics

Jagadeeswara C B, B.Com. (Hons.)

M Adithya Krishna, B.B.A.

A V Sumanth Kumar, B.A. (Hons.) in Economics

Priti Saigal, M.B.A.

Ashrita C Haldipur, M.Sc. in Food Science and Nutrition

Sanjana Marwah, B.Ed.

Vaishali M, B.Sc. in Food Science and Nutrition

Vanitha Reddy Naina, B.Sc. (Hons.) in Chemistry

Shivani Sanjay Kshirsagar, B.A.

Ph.D. Awardees

Ajith Padyana - Computer Science

Novel Compression Techniques to Enhance I/O Performance of High End Computing Applications using Accelerators

C Prathibha - Physics

Adsorption Studies of Engineered Nano-adsorbents for Efficient Defluoridation of Potable Water

Aditya Dileep Kurdekar - Physics

Nanoparticle based Rapid Point of Care Diagnostic Assays for Differential and Accurate Detection of Recent and Chronic HIV Infections

Manne Anupam Kumar - Chemistry

Graphene based nanomaterials for electrochemical determination of biologically and chemically important molecules

Sai Giridhar S - Chemistry

Early detection of Coronary Artery Disease (CAD) in Indians: Study of biomarkers

Ramakrishna Motamarri - Chemistry

Quality Evaluation of Indigenous Cultivated Ganoderma spp. and Catalytic Activity of Biosynthesized Gold Nanoparticles from Marine Algae

Pradeep Kumar Badiya - Chemistry

Low-cost Biomaterials for Bioprocessing and Plasmonic Applications

A S Vishwanathan – Biosciences

Microbial Fuel Cells - Indicators of Performance

G S Srirangarajan – Management

Spirit at the Workplace (S@W): A Study of S@W in Business Organizations in India

Jhaveri Aman Sunil Priti – Management

Developing the Concept and Practice of 'Inclusive Business' for Poverty Alleviation: A Study of Select Organizations from India

G Raghavender Raju – Economics

Current Account of India's Balance of Payments Under The New Economic Policy Regime

Lalitha Sarma R - English Literature

The 'I' of Woman Through the Eye of Shakespearean Drama

ANNUAL SPORTS & CULTURAL MEET

11-15 Jan 2018

A display that best highlights the underpinnings of the system of Values-based Integral Education

The singular focus of all Sai students for the Annual Sports & Cultural Meet has always been to please Bhagawan Baba and make Him proud. On the other hand, Baba—with His divine vision—made sure that these pure feelings of Love were translated into the pursuit of excellence during the meet. One of the foremost of these facets was developing Self Confidence. From concept to performance, each event brought home challenges that seem impossible at first; but with dedication, teamwork and facing fears and doubts, they culminate into outstanding performances.

The other amazing aspect of Sports Meet was thriftiness. With meagre resources, students put together beautiful props, often with recycled materials. This brought to the fore not just creative energy and original ideas, but also a sense of unity to achieve excellence in a limited amount of time under immense pressure.

The fact that the Sports Meet has 100% participation from teachers and students is a feat in itself. This fact also encourages the cultivation of discipline. If one student is late for practice, the entire team is held up. Students therefore learn that whilst you may be the best in the team, it is more important to do *your* best for the team!

In this manner, Bhagawan Baba Himself evolved the culture behind the scenes of the Annual Sports & Cultural Meet to put in effect all the underlying principles of Sri Sathya Sai Values-based Integral Education for students and teachers.

Perhaps as He always said, The End of Culture is Perfection.

Sports Meet

11 Jan 2018

Anantapur, Brindavan, Prasanthi Nilayam and Muddenahalli Campuses presentations:

Pennyfarthing and Half Bikes, Fabric Gymnastics, Gymnasts, Wings, Gymnastics and Pyramid formations, Giant Wheel, Cultural Item (Depicting the Life of a Jawan), Bike Stunts, Zorbonauts, BrinHkers (Brindavan Hockey Players), Twilight Swings, Illuminati, Bhangrā from 'The Sai Gabroo Team', Janbaaz - The gallant stilt adventurers and The Inspirators.

Cultural Meet

12-15 Jan 2018

- o Drama presentation by students of the Brindavan Campus: Bhakta Purandara Dasa
- o Cultural presentation by students of the Muddenahalli Campus: The One Step
- o Drama presentation by students of the Prasanthi Nilayam Campus: Tripurantakam - A journey of transcendence

Prize Distribution Ceremony

15 Jan 2018

The Prize Distribution Ceremony celebrated the excellent performances in sports and cultural events during the Annual Sports and Cultural Meet and during the academic year 2017/18 by students.

It consisted of awarding cups and prizes to the students of all Sai educational institutions and brief speeches by a teacher of SSSIHL and a few students highlighting the significance of the event.

Athletic Champions

Devi Vavilapalli

Postgraduate, Anantapur Campus

Priyanka Antil

Undergraduate, Anantapur Campus

Ashish Baraily

Postgraduate, Prasanthi Nilayam Campus

Thota Sujendra

Undergraduate, Prasanthi Nilayam Campus

Soma Shreyas

Brindavan Campus

Krishnapuram Anil Kumar

Muddenahalli Campus

Cultural Champions

Kanchan Kumar

Postgraduate, Anantapur Campus

Shreelakshmi B

Undergraduate, Anantapur Campus

Yashwant Mukhia

Postgraduate, Prasanthi Nilayam Campus

Anup Mukhia

Undergraduate, Prasanthi Nilayam Campus

Sai Sankara Narayanan S S

Brindavan Campus

Ajay Mukund S

Muddenahalli Campus

Fine Arts Champions

A Bhavana

Postgraduate, Anantapur Campus

Sumani Rai

Undergraduate, Anantapur Campus



COMMUNITY SERVICE

EACH YEAR, STUDENTS AND TEACHERS OF THE UNIVERSITY WORK WITH LOCAL COMMUNITIES AROUND THE CAMPUSES THROUGHOUT THE YEAR. MANY OF THESE SERVICE ACTIVITIES ARE INSPIRED BY STUDENTS THEMSELVES. THEY REFLECT THE IMPACT OF THE UNIQUE EDUCATION THEY RECEIVE HERE. EXAMPLES OF THESE FROM 2017/18 INCLUDE:

CHEYUTHA (EDUCATIONAL SUPPORT)

Anantapur Campus, Ongoing

Postgraduate students of the campus have taken the initiative to tutor the campus contingent workers' school going children and semi-literate adults, in an effort to enhance the academic standard of the children and to aid in completing their home assignments (as majority of their parents are not literates). Adults are trained in basic reading, writing and arithmetic skill development.

NARAYANA SEVA

Anantapur Campus, Every month

Each month, food packets are distributed to the needy poor in the slums around Anantapur town. Approximately 270-300 packets, made from 25 kg. of Pulihora are distributed by four students and a teacher in the hostel auto rickshaw.

The activity exposes students to the marginalized people of society and their underprivileged living conditions.

ADOPTION OF LEPER COLONY

Anantapur Campus, 1986 to date

The students and staff of the Anantapur Campus Girls hostel have adopted a leper colony situated in the outskirts of the town of Anantapur since 1986, with the objective of making the inmates of the colony as self-sufficient as possible. One activity involves students making a variety of handicrafts like cards, bookmarks, rakhis and friendship bands, which in turn are sold to the inmates of the hostel. The money raised is utilized to buy monthly provisions and other basic requirements for the residents of colony. In addition to this, in 2017/18, a small shed was provided to protect the water purifying apparatus kept for the drinking purpose of the inmates.

CELEBRATING CHRISTMAS WITH VILLAGE CHILDREN

Muddenahalli Campus, Christmas 2017

On Christmas morning, the students of the campus visited Muddenahalli village for Christmas celebrations. The nagar sankeertan that commenced from the hostel wound its way into the village. The students offered lighted candles to the children who participated in the bhajan session held at the local Hanuman temple. After the prayers, the children were all offered chocolates as Christmas gifts.

OLD AGE HOME VISIT

Muddenahalli Campus, Feb and Apr 2018

Students of the campus, like earlier years, visited the Sai Dwarakamayee Vriddhashrama, an old age home housing about forty resident, at Sultanpet, Nandi village, about four kilometres from Muddenahalli. The visit would commence with

veda chanting and bhajans followed by interaction with the elderly. They spent time enquiring about the well-being of their 'grandparents' and wished them good health. During the interaction, the boys sang songs and listened to stories.

For those residents who could not come to the prayer hall, the students visited them in their living rooms. The visit taught students the value of empathy and respect for elders.

SAI BANDHAN, A BOND OF LOVE

Brindavan Campus, Apr-May 2018

"For the enlightened ones, the entire world is one family," declare our scriptures.

A practical demonstration of this is done through the Sai Bandhan domiciliary outreach program, a collaboration between students of Brindavan Campus, SSSIHL and Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Whitefield, Bangalore.

The service programme involves students personally visiting patients who have been operated at the Hospital and enquire about their welfare and whether they are following the post-op regimen prescribed by the doctors. 125 students visited more than 600 patients this year.

For the patients, the program is a reminder that SSSIHMS is interested in their welfare even beyond their stay as an inpatient. In fact, many of them regularly volunteer to do service at the hospital. Students, on the other hand, experienced the difficult conditions that the poor patients have to live under and the enormous difference our hospital is making in their lives.

EDUCATION

TRIBAL VILLAGE SERVICE

Brindavan Campus, 16-17 Apr 2018

Similar to the previous years, seventy-five students of I and II year undergraduate and I year postgraduate programmes volunteered to visit tribal schools in the remote forest villages of Kottayur Kollai and Siddhapuram, to serve their student population of 450. The service was supported by the Hosur Sri Sathya Sai Seva Samithi, Bangalore.

In preparation for the service, students packed health kits consisting of daily toiletries and collected old notebooks with blank sheets and stitched together new ones to be given to the children.

The service commenced with nagar sankeertan and veda chanting at a nearby village. Students then divided themselves into groups. One group installed Sai Deep, a device using a soda bottle and chlorinated water sealed in it to refract sunlight into the dark rooms of the tiled houses of the villagers.

Another group went to the schools and conducted classes on the importance of health and hygiene.

Our students conducted various games and competitions and awarded prizes. Much to their surprise, they found that there were students quite proficient and confident in giving speeches in English! There was a girl in Class VII from one of the backward villages who expressed her dream of becoming the collector so that she could bring about development in the area!

SSSIHL students were moved by the abject poverty of the villagers, but seeing the children radiate happiness even in their simple surroundings made them realize the lesson that happiness does not lie in possessions, but in contentment.



2018



ssihl.edu.in

THE END OF EDUCATION IS CHARACTER

Sri Sathya Sai Baba

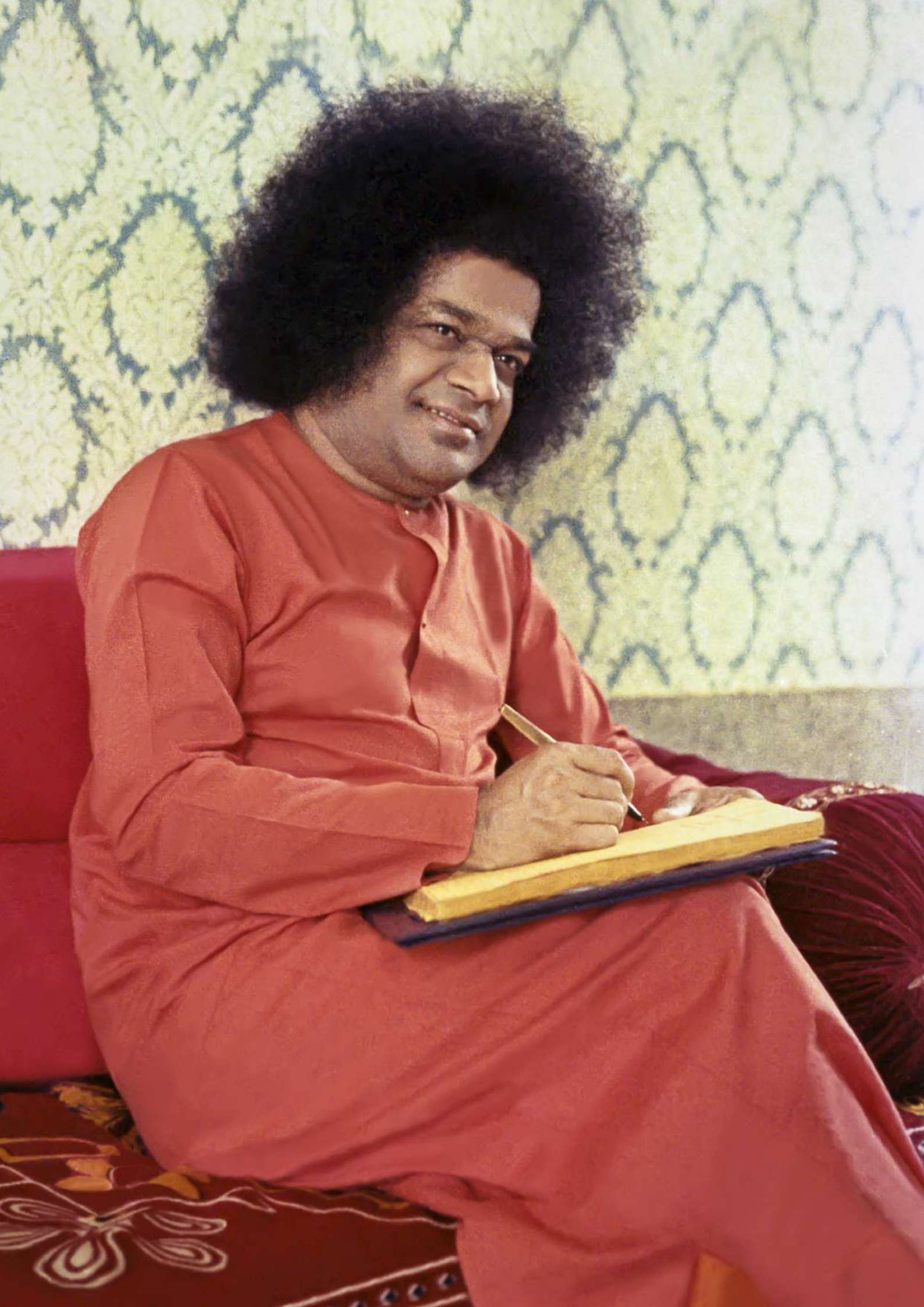


ANNUAL REPORT 2017

SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

In this university, the medium of instruction is discipline. The first, second and third languages are love, service and sadhana (spiritual discipline).

Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL



FOREWORD

It is reassuring to note that our Institute keeps moving forward at a steady pace in both teaching and research, without compromising on excellence. In line with the vision of Bhagawan Baba, Sri Sathya Sai Institute of Higher Learning (SSSIHL) is preserving and disseminating knowledge with the objective to be amongst the top-notch Institutes of our country. It is therefore with immense pleasure that I write this foreword for the SSSIHL Annual Report 2017.

As many of you are aware, this Institute is uniquely placed in terms of imparting a distinctive type of education, where character building and academics (including research) are given equal importance. It is this particular feature—one that is very much relevant to the times that we live in—that attracts many aspirants to pursue their higher studies at SSSIHL.

For entry in 2016, for example, we had 3000 applicants from over 25 states of the country, contesting for 508 seats across our undergraduate and postgraduate programmes. With the exceptional student-teacher ratio of 9:1, coupled with one-on-one access to computers for all students, the quality of teaching at our Institute is at its best. In large measure, this success can be attributed to the innovative bright minds, the SSSIHL faculty, two-thirds of whom hold a Ph.D. in their area of expertise. This number is ever-increasing as the remaining members of the faculty are encouraged to pursue their doctoral research work.

Our overall student examination pass percentage is 94, which is one of the highest in the country. In an effort to achieve our vision to be a premier Institute, we continue our sincere efforts in Research & Development. At SSSIHL, we now have, for the first time, over a hundred doctoral research scholars. For a university comprising a modest number of students (around 1300), this upward trend is quite remarkable.

Our continuous efforts, supported by well-established infrastructure, facilitated an enhancement in research output, as evident in this annual report. We continue to invest in state-of-the-art research facilities to improve the research capabilities at SSSIHL.

The fact that almost a fifth of our final-year postgraduate students obtained top ranks at national level competitive examinations last year exemplifies the academic quality of our University. Our faculty at all the Sciences, Management and Humanities departments are actively involved in several needs-based research projects funded by external funding agencies (both Government and Non-Government). The results of their investigations were published in several peer-reviewed scientific journals of high repute. Indeed, over 200 research articles were published during the academic year 2016/17.

In this context, I congratulate all our talented faculty, remarkable students and active alumni for doing a great job. Looking ahead, let us not relax and be complacent on our past accomplishments, but rather continue to make every collective effort towards making greater progress in achieving our Revered Founder Chancellor's vision and mission to be a premier University of teaching and excellence in research.

I have no doubt in my mind, that with the unflinching and generous support of the Sri Sathya Sai Central Trust, combined with the everlasting Love and Blessings of our beloved Bhagawan, this Institute will continue to maintain its special status amongst all the educational institutions in our country.

We look forward to your continued patronage.

Prof. K B R Varma
Vice-Chancellor

AT A GLANCE

2.6 : 1

Student Computer Ratio



₹ 10.45 CR.

Expenditure on Equipment & Infrastructure



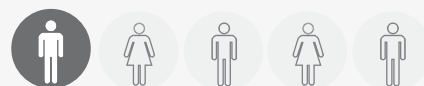
₹ 1.94 CR.

Research & Teaching Grants



508

Total Admissions



1/5 applicants is admitted

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130

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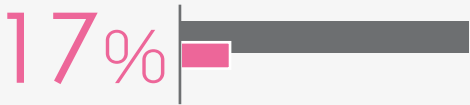
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Student Teacher Ratio



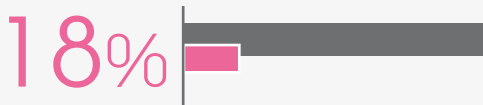
1 in 4

Teachers are Residential



Undergraduate Acceptance Rates

373 / 2225
accepted / eligible applicants

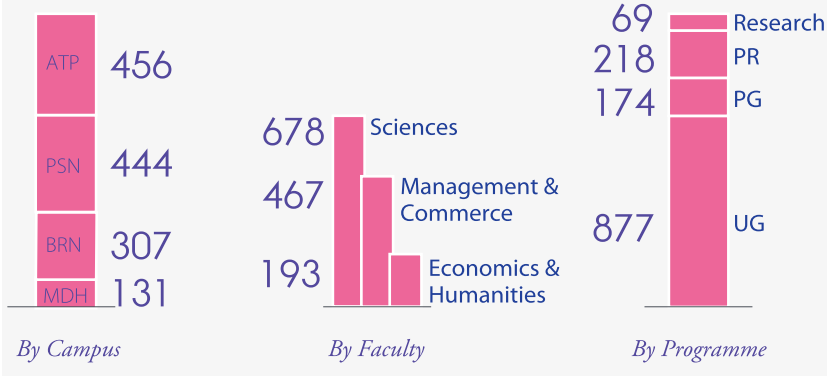


Postgraduate & Professional Acceptance Rates

135 / 731
accepted / eligible applicants

1338

Student Profile



155
Teacher Designations

- 20 Professor
- 34 Associate Professor
- 88 Asst. Professor
- 13 Others

66%
PhD
*21 pursuing

2:1
academic administrative
Staff Profile

VALUES-BASED INTEGRAL EDUCATION



“I HAVE ESTABLISHED THESE INSTITUTIONS TO IMPART SPIRITUAL EDUCATION AS A MAIN COMPONENT AND WORLDLY EDUCATION AS A SECONDARY ONE. EDUCATION SHOULD ENABLE ONE TO CULTIVATE GOOD QUALITIES, CHARACTER AND DEVOTION. THE TEACHING OF THE UNIVERSITY CURRICULA IS ONLY THE MEANS EMPLOYED FOR THE END, NAMELY, SPIRITUAL UPLIFT, SELF-DISCOVERY AND SOCIAL SERVICE THROUGH LOVE AND DETACHMENT.”

Sri Sathya Sai Institute of Higher Learning (Deemed to be University), Prasanthi Nilayam, Andhra Pradesh, India, is a visible manifestation of Bhagawan Sri Sathya Sai Baba's vision of education for human transformation.

Bhagawan Baba has designed the system of Sri Sathya Sai Values-based Integral Education in such a manner that between the time an 18-year old student joins the university and when she or he graduates (at the age of 21 or 23), there is a deep *inner* transformation that takes place. This concept is very unique at the university level.

The University hosts over 1350 undergraduate, postgraduate and professional programme students across four campuses:

For women students:

- o Anantapur Campus at Anantapur, Andhra Pradesh

For men students:

- o Prasanthi Nilayam Campus, at Puttaparthi, Andhra Pradesh
- o Brindavan Campus, at Whitefield, Bangalore, Karnataka
- o Muddenahalli Campus at Muddenahalli, near Chickaballapur, Karnataka

The University has a merit-based open admissions policy for all, irrespective of income, religion or region.

SSSIHL provides free education to students for all programmes of study. This includes waiver of all fees - tuition, examinations, laboratory, library, sports and medical.

Programmes offered include undergraduate, postgraduate, professional and research.

A MODERN GURUKULA

Sri Sathya Sai Institute of Higher Learning was founded to inculcate ethical and moral values in students. These ethics and morals form the undercurrent of every subject taught at the university. Here, the development of a student's character is just as important as imparting knowledge.

This holistic development of students can only be possible in an

environment that encourages the development of the student's mind, body and spirit.

To facilitate this, the University has a compulsory residential policy for all students. The environment is similar to the ancient Indian *gurukula* system of education, in a modern context. Teachers and students live and grow together in an atmosphere of mutual trust and unity.

Most students typically spend between two to five years pursuing an education at SSSIHL. As a result, what differentiates them from graduates of other universities is the transformation of their hearts, not just the training of their minds.

RESIDENTIAL CHARACTER

The compulsory residential system is an essential ingredient for the university's Values-based Integral Education to achieve its objective of transformation. This is where the concept of the modern *gurukula* really comes to the fore. In fact, Bhagawan Baba Himself designed the entire system and its activities, right down to the daily routine of students!

Residential teachers voluntarily stay with students at the hostel. They choose this responsibility in addition to their academic and administrative workload. Like students, they also share rooms with typically two teachers in a room.

They perform three fundamental tasks:

- o Ensure the all-round welfare of students
- o Discharge specific duties for the upkeep of the hostel daily routine and general discipline
- o Facilitate the smooth functioning of the hostel Self Reliance departments

The Process

The diagram below forms the basis of the system of Values-based Integral Education at SSSIHL.

The base is the concept of a modern *gurukula* that sustains all relationships and activities at SSSIHL. It is responsible for creating and sustaining the congenial environment necessary for the teacher-student interaction to grow and develop.

Adherence to discipline and appropriate behaviour are the two important aspects that encompass all interactions.

The five human values of Truth, Right Conduct, Peace, Love and Non-violence form the undercurrent of all the dimensions of integral education.

These dimensions are: Intellectual, Physical, Cultural, Devotional and Service. The key activities for each of these dimensions form the basis of most of the time that students spend at SSSIHL.

The Outcome

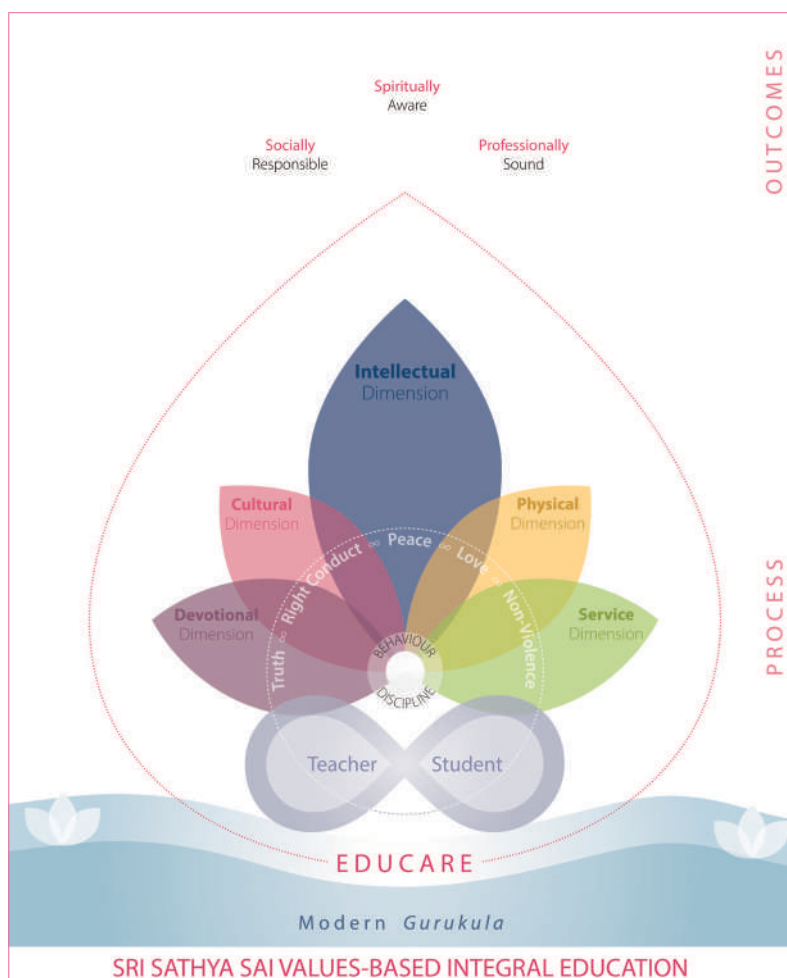
The outcome of the system of Values-based Integral Education at SSSIHL are threefold. It prepares all graduates to be:

- o Spiritually aware
- o Socially responsible and
- o Professionally sound

Student Diversity

26/29

States of India



UNIVERSITY GOVERNANCE

SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING (DEEMED TO BE UNIVERSITY) IS AN INDEPENDENT AND SELF-GOVERNING INSTITUTION. IT WAS ESTABLISHED BY THE SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING (PUBLIC CHARITABLE TRUST), WHICH IN TURN HAS BEEN ESTABLISHED BY THE SRI SATHYA SAI CENTRAL TRUST. BHAGAWAN SRI SATHYA SAI BABA IS THE FOUNDER OF THESE TRUSTS.

THE TRUST

The Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust) was founded to foster the culture of India and promote in the students and teachers an awareness and understanding of the social needs of the country; with special focus to the needs of the rural population. It is aimed to inculcate in students a world perspective- an international outlook imbibing human values along with a spiritual and secular education. The Trust members for 2016/17 were:

- Justice A P Misra, Former Judge, Supreme Court of India
- Sri K Chakravarthi, Member-Secretary, Sri Sathya Sai Central Trust
- Sri T K K Bhagwat, Member, Sri Sathya Sai Central Trust
- Sri S S Naganand, Member, Sri Sathya Sai Central Trust
- Sri R J Rathnakar, Member, Sri Sathya Sai Central Trust
- Prof. S P Thyagarajan, Former Vice-Chancellor, Univ. of Madras

THE PRINCIPAL BODIES

The administrative and academic functioning of the university is carried out by the following two principal bodies:

1. The Board of Management
2. The Academic Council

THE BOARD OF MANAGEMENT

The Board of Management is the principal authority of the university, responsible for its general management and administration. Its members for 2016/17 were:

- Prof. K B R Varma, Vice-Chancellor, SSSIHL (Chairman)
- Sri S S Naganand, Member, Sri Sathya Sai Central Trust Nominee, SSSIHL (Public Charitable Trust)
- Dr. (Ms.) Renu Swarup, Senior Advisor, Dept. of Biotechnology, Ministry of Science & Technology, and Managing Director, Biotechnology Industry Research Assistance Council (BIRAC)
- Dr. Sandip Chatterjee, Officer on Special Duty/Scientist F, Ministry of Electronics and Information Technology, Govt. of India
- Prof. Srinivasan Chandrasekaran, Professor (Hon.), Dept. of Organic Chemistry, Indian Institute of Science
- Prof. S Siva Sankara Sai, Dean, Faculty of Sciences, SSSIHL
- Prof. (Miss) Rajeshwari C Patel, Dean, Faculty of Economics & Humanities, SSSIHL
- Prof. G Nageswara Rao, Head, Dept. of Chemistry, SSSIHL
- Prof. R Prabhakara Rao, Head, Dept. of Economics, SSSIHL
- Dr. Naren Ramji, Registrar, SSSIHL (Secretary)

In 2016/17, The Board of Management met on 16 July 2016, 17 September 2016, 21 November 2016 and 18 February 2017.

THE ACADEMIC COUNCIL

The Academic Council is the principal academic body of the university. It has general control over and is responsible for the maintenance of standards of teaching, research and training, approval of syllabus, coordination of research activities, and examinations and tests within the university. Its external members for 2016/17 were:

- Prof. Ajay K Sood, Dept. of Physics, Indian Institute of Science, Bangalore
- Prof. Ajaib Singh Brar, Vice-Chancellor, Gurunanakdev University, Amritsar, Punjab
- Prof. M H Bala Subramanya, Professor & Chairman, Dept. of Management Studies, Indian Institute of Science, Bangalore
- Dr. K R Suresh Nair, President, Research & Development, NeST Group and Chief Technology Officer, SFO Technologies Pvt. Ltd.
- Dr. V Bhujanga Rao, DS & Director General - Naval Systems and Materials, DRDO, New Delhi
- Sri Brij Mohan, Scientist 'G' & Member Secretary, National Research Board, DRDO, New Delhi

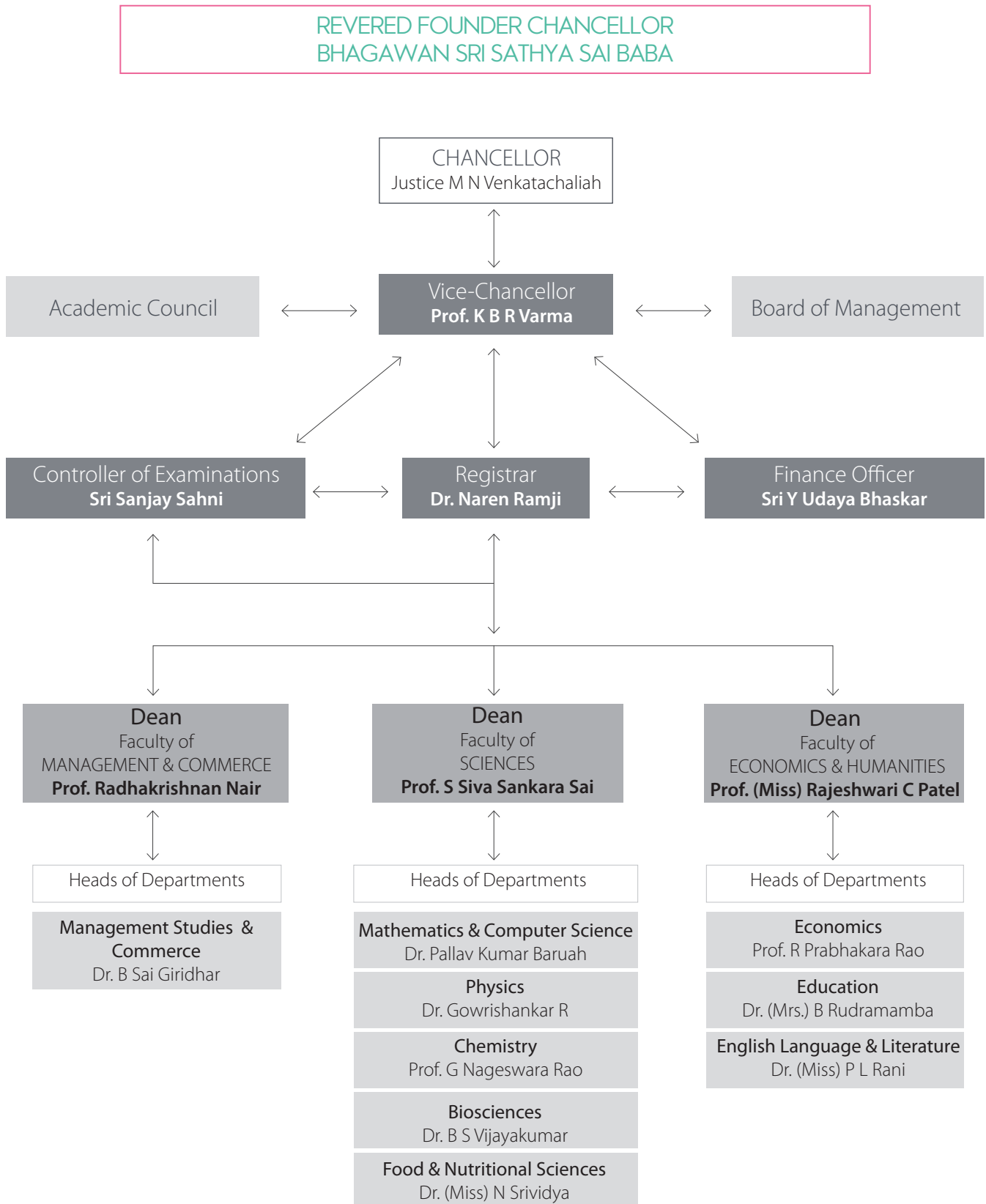
In 2016/17, The Academic Council met on 15 October 2017.

IMPORTANT COMMITTEES

In addition to the principal bodies that govern the university, there are various committees that have been set up to ensure that academics and administration are in accordance with the high standards that SSSIHL has striven to consistently maintain. Some of these committees include:

- The Boards of Studies
- The Finance Committee
- Planning and Monitoring Board
- Internal Quality Assurance Cell (IQAC)
- Research Advisory Board
- Institutional Ethics Committee
- Institutional Biosafety Committee
- Building and Works Committee
- Campus-Hostel Management Committee
- Research Conferments Cell

UNIVERSITY STRUCTURE



Sri Sathya Sai Institute of Higher Learning (Deemed to be University) has been established by Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts.

ACADEMIC WORKSHOPS & CONFERENCES

TO FACILITATE WIDER EXPOSURE TO THE DEVELOPMENTS IN ACADEMIA AND INDUSTRY AND ENABLE THE EXCHANGE OF IDEAS, THE UNIVERSITY CONDUCTED TWENTY IN-HOUSE NATIONAL AND INTERNATIONAL WORKSHOPS AND CONFERENCES DURING THE ACADEMIC YEAR 2016/17.

For full reports of all SSSIHL Workshops & Conferences in 2016/17, kindly visit sssihl.edu.in

CURRENT METHODOLOGIES IN FOOD MICROBIOLOGY AND NUTRITIONAL IMMUNOLOGY

Dept. of Food & Nutritional Sciences

22-23 Jul 2016

Microbiologists came together for a hands-on workshop to discuss topics ranging from isolation and identification of food pathogens from high risk foods, food allergens, antimicrobial screening and testing against food pathogens and the principle of ELISA technique.

CAPITAL MARKETS & MUTUAL FUNDS

Dept. of Management & Commerce

23 July 2016

Financial literacy has been the focus area in many countries and in India, its awareness is on the rise. With many developments in the investor education segment, people are now exposed to more information about the Capital markets and make better financial decisions. Eminent professionals from the financial services industry participated in a session of sharing knowledge and understanding of Capital Markets and Mutual Funds.

External experts and guests from: National Institute of Securities Markets (NISM), Birla Sun Life Mutual Fund (BSLMF) and Stratadigm

SAMEEKSHA (MBA FOUNDATION DAY) THIRTIETH ANNIVERSARY OF THE SSSIHL MBA

Dept. of Management & Commerce

20-21 Aug 2016

21 August 1986 is a significant milestone in the history of Sri Sathya Sai Institute of Higher Learning. Bhagawan Baba, the Revered Founder Chancellor of the Institute, inaugurated the Masters of Business Administration (M.B.A.) programme on this day. Celebrating thirty years of this programme, several senior teachers of the department and a member of the Sri Sathya Sai Central Trust reflected on the teachings of Bhagawan and how His teachings and time spent with them over the past decades had shaped the department and indeed their attitudes towards students, teaching and the like.

MERGERS AND ACQUISITIONS - CURRENT TRENDS: GLOBAL VS INDIAN CORPORATE SCENARIO

Dept. of Management & Commerce

27 Aug 2016

The workshop was based on the key factors in Mergers Acquisitions (M&A) – people, processes and systems. Of these, it highlighted that only people issues made a difference to the outcomes of a M&A, such as the rights of employees in M&A scenarios, responsibilities of shareholders, cost synergies and the role of investment banks in the corporate merger scenarios. These were discussed by a panel of experts.

External experts and guests from: IB, Tractors and Farm Equipment Limited (TAFE)

EFFECTIVE STRATEGIES FOR IMPLEMENTATION OF THE TWO-YEAR B.ED. CURRICULUM

Dept. of Education

9-10 Sep 2016

The workshop brought together teachers, trainers and administrators to discuss insights into novel areas for research, reforms in the B.Ed. curriculum and share the best practices across institutions to make teacher education diverse and multifaceted. Inclusive education, novel teaching-learning methods, the need for teachers to become more humane, the role of a teacher in handling young minds and the need for the extension of the B.Ed. programme from one to two years were deliberated upon.

External experts and guests from: Andhra University, IASE and Dravidian University

TEACHING WORKSHOP

Dept. of Mathematics & Computer Science

20-21 Sep 2016

From the teachers, for the teachers. An internal workshop that brought together all the teachers of the department in an effort to share and impart skills and explore avenues to continue their research and exploration in order to keep themselves updated with the current happenings in their respective areas of work.

From Computer Networks to Pushdown Automata, Singular Value Decomposition to Sorting techniques, the two-day workshop brought many ideas and shared learnings to the forefront.

ENTREPRENEURSHIP

Dept. of Management & Commerce

16 Nov 2016

The workshop was conducted by a noted entrepreneur and trainer, Mr. Naveen Lakkur. He is an expert in building IT start-ups and has demonstrated his proficiency in innovating, validating and converting ideas into working business models. The sessions of the workshop included exploring entrepreneurship, founder focus, inspiration, ideation, idea pitching, incubation and stitching the pieces together to start a start-up

ETERNAL VALUES AND THE SANSKRIT LANGUAGE

Sub-Dept. of Sanskrit

1 Dec 2016

The importance of Sanskrit language in Indian Culture brought together students of the university, Sri Sathya Sai Higher Secondary School and experts on the language for a day full of Divine discourses, Quiz, breakout sessions and talks on the importance of appreciating the language of Sanskrit, the mother of all languages.

External experts and guests from: SVYASA (YOGA University)

THE NATIONAL WINTER SCHOOL IN MATHEMATICS

Dept. of Mathematics & Computer Science

26-31 Dec 2016

The National Winter School in Mathematics brought together dozens of undergraduate students of Indian universities and exposed them to the world of Mathematics and made them experience the joy and fun of Mathematics.

Topics included: Three methods to tackle non-linear problems in PDE, Phase Portraits for 2 x 2 systems of ODE, Introduction to and Applications of Cryptography, Mathematics in human thought, Singular Value Decomposition and applications, Introduction to Game theory - Nash's equilibrium and applications, etc.

External experts and guests from: IIT Gandhinagar, University of Iowa, TIFR, IISc, IIT Madras, TCS, Bosch, Amazon, etc.

INFRASTRUCTURAL DEVELOPMENT AND PUBLIC-PRIVATE PARTNERSHIP FINANCING IN INDIA

Dept. of Management & Commerce

28 Jan 2017

The workshop brought together experts to discuss the current environment of Infrastructural Development and Public-Private Partnership Financing in India and the state of play of infra companies, the lending aspect of infra finance, the vision and role of government in infra projects and perspectives and expectations of an equity investor in infra projects.



External experts and guests from: ICICI, Iridis Advisory, National Highways Authority of India (NHAI), L&T Infrastructure Finance and GMR Group.

SEMINAR SERIES ON SOCIAL ENTREPRENEURSHIP AND INNOVATION

Dept. of Mathematics & Computer Science

4 Feb 2017

The seminar series was anchored by Dr. Ram Ramdas, CEO Herald Logic, Adjunct Professor IITB Centre for Innovation and Entrepreneurship. The activities included talks by resource persons, model building and analysis with guidance from the experts spanning over four full days over a few months.

External experts and guests from: School for Social Entrepreneurs India, FISE, Tata Trusts.

BIOSCIENCES: POTENTIALS AND FUTURE PROSPECTS

Dept. of Biosciences

13-14 Feb 2017

The two-day national seminar highlighted the dynamics and the speed with which different fields in Biosciences is advancing. The purpose of the seminar was to emphasize the need for basic knowledge of Biosciences as a foundation for all the branches of current research on life sciences.

External experts and guests from: BITS Pilani, ICMR, ICAR and Defence Food Research Lab

MANAGING CORPORATE EXPECTATIONS- ASSERTIVENESS AND INTEGRITY

Dept. of Management & Commerce

14-15 Feb 2017

A Management Development Programme that sought to bring out the entrepreneurs in students and teachers alike, but with a moral compass. Thoughts on dharma, unity in thoughts, words and deeds, honesty, transparency, ethics and corporate expectations were the key soundbites throughout the two days.

External experts and guests from: Tractors and Farm Equipment Limited (TAFE), L&T Technology Services, Mar Labs, Rane Group, MMC Private Limited, Trayee Business Solutions and Sai Seva

FRONTIERS IN PURE AND APPLIED CHEMISTRY

Dept. of Chemistry

18 Feb 2017

Drug Delivery through Carbon and Silica based Nano Structures, Electrochemistry and its Applications, Basic Environmental Chemistry, Earth's Atmospheric Chemistry, Drug Recombination, Surface Engineering, FTIR Spectroscopy and Imaging for Polymer Analysis and Chemical Modes of delaying the Auto ignition of Gasoline Based Fuels. For students, the two days was an exposé of frontier technologies and research in pure and applied chemistry.

External experts and guests from: Jawaharlal Nehru Centre for Advanced Scientific Research, IISc. Bangalore, LGC-Promochem India Pvt. Ltd., GMK Research Laboratories, Indian Institute of Science, Hindustan Petroleum, etc.

WOMEN ENTREPRENEURSHIP AND ITS DIFFERENT DIMENSIONS

Dept. of Management & Commerce

20 Feb 2017

The workshop aimed to develop and strengthen the ethical entrepreneurial qualities among students and enable them to acquire the necessary knowledge and managerial skills to become an entrepreneur and serve society. It analysed the pros and cons of a career in entrepreneurship and encouraged the young, aspiring women towards it.

External experts and guests from: HMOL Ventures Pvt. Ltd., PepsiCo New York, Art@SFactor, Sai Advisory Services, Vitasta Consulting Pvt. Ltd.

TUTORIAL WORKSHOP ON NON-LINEAR OPTICS| LIGHT MATTERS

Dept. of Physics

26-27 Feb 2017

A highly technical workshop on Non-Linear, a branch of optics that describes the behaviour of light in nonlinear media, that included lectures on Nonlinear Optical Phenomenon, Ultrafast laser pulses, and more.

External experts and guests from: University of Hyderabad, IIT Madras.

MOLECULAR TECHNIQUES AND THEIR APPLICATIONS IN CLINICAL MICROBIOLOGY

Dept. of Biosciences

2 Mar 2017

A practical workshop consisting of four experiments: Multiple Polymerase Chain Reaction (PCR), ELISA, Dot Blot and LAMP, organized by Dr. Urmil Tuteja, Scientist G, DRDO, Gwalior.

External experts and guests from: Indian Institute of Science

FRONTIERS IN ADVANCED BIOLOGICAL RESEARCH, IMMUNOLOGY AND CLINICAL SCIENCES

Dept. of Biosciences

4 Mar 2017

The workshop highlighted that the boundaries between the different branches of science and distinction between pure sciences and applied sciences have blurred. Experts discussed Microbiomes, Heart Disease, Immunology, Drug Target Identification, Investigation of New Drug, Genomics and Lipid Signalling Cascades in Drosophila.

External experts and guests from: IISc. Bangalore, SSSIHMS, Biocon, Institute of Bioinformatics and Applied Biotechnology and National Centre for Biological Sciences (NCBS)

SYMPOSIUM ON BIG DATA AND ANALYTICS

Dept. of Management & Commerce

9 Mar 2017

A one-day symposium that brought three experts in the field of Big Data, Analytics and Machine Learning.

External experts and guests from: Broadridge Financial Solutions Pvt. Ltd. and Cognizant Technology Solutions

CURRENT RESEARCH PERSPECTIVE AND ADVANCED CONCEPTS IN CHEMISTRY

Dept. of Chemistry

10-12 Mar 2017

The workshop attracted leading experts from many fields to discuss areas varying from materials to drug discovery.

External experts and guests from: DRDO, Raman Research Institute, Center for Cellular and Molecular Biology, Center for Energy Science, IISER, NISER, CSIR, IISc Bangalore, Tata Chemicals Innovation Center, Jyothy institute of Technology, IIT Bombay, etc.



FACULTY PARTICIPATION & ACHIEVEMENTS

FROM DELIVERING KEYNOTE ADDRESSES TO BEING INVITED AS A UNIVERSITY BOARD MEMBER, SSSIHL FACULTY REACHED SEVERAL PERSONAL MILESTONES DURING THE ACADEMIC YEAR 2016/17.

For a full report of all SSSIHL faculty Participation & Achievements in 2016/17, kindly visit sssihl.edu.in

MATHEMATICS & COMPUTER SCIENCE

Prof. V Chandrasekaran

- o Listed for Life Time Achievement in the Marquis Who's Who in the World 2017, USA, a global resource for reliable and comprehensive biographical data.

Dr. Krishna Kiran Vamsi Dasu

- o Selected as a Summer Research Fellow by the Indian Academy of Sciences for the year 2017 in the stream of Mathematical Sciences.

Sri Darshan Gera

- o Attended a Teacher's Training Programme for Degree Teaching at the Talent Development Centre, IISc, Challakere, Karnataka, 23 Nov to 13 Dec 2016.
- o Attended a two-day workshop on Mathematics Practicals, Bangalore University, 14-15 Jan 2017.

Sri B V K Bharadwaj

- o Attended a National Workshop on Recent Trends in Mathematics, Tata Institute of Social Sciences, Tuljapur, Maharashtra, Aug 2016.

PHYSICS

Dr. Krishna Chaitanya V

- o Invited Lecture: 13th D P Somayaji Memorial Physics Lecture, Organized at Vijayawada, (Title: Femtosecond Laser Micromachining for Bio-medical applications), 16 Nov 2016.
- o Invited Lecture: Expert Lecture: Dept. of Metallurgical and Materials Engineering, (Title: Introduction to Femtosecond laser micromachining and its applications) NITK Surathkal, 12 May 2017.

Prof. S Siva Sankara Sai

- o Invited by Central University of Himachal Pradesh (CUHP) as the member of Board of Studies of School of Physical and Material Sciences, May 2017.
- o Attended the Tenth IEEE International Conference on Advanced Networks and Telecommunication Systems (ANTS), Indian Institute of Science (IISc.), Bangalore, 6-9 Nov 2016.

Mrs. C Prathibha

- o Participated in the prestigious Sakura Youth Exchange Program by Japan Advanced Institute of Science and Technology (JAIST) and worked on 'doped nano materials for fluoride adsorption' under the supervision of Prof. Matsumi, August 2016.

Sri Muralikrishna Molli

- o Attended the International Conference on Nanoscience and

Nanotechnology for Energy Applications (EApp-2016), Sathyabama University, Chennai, 27-29 Jun 2016.

- o Attended the International Conference on Material Science and Technology, St. Thomas College, Pala, Kottayam, Kerala, 5-8 Jun 2016.
- o Attended the 61st DAE Solid State Physics Symposium (DAE SSPS 2016), KIIT University, Bhubaneswar, Odisha, 26-30 Dec 2016.

CHEMISTRY

Dr. A Sunil

- o Received the Young Scientist Award 2016, Aufau International Awards, Aufau Periodicals, Salem, 4 Jun 2016.
- o Successfully completed a twenty-one days residential training program equivalent to UGC refresher course, Degree College Teachers Training Program in Chemistry, Indian Institute of Science Challakere Campus, Kudapura, Karnataka, 23 Nov to 13 Dec 2016.

Dr. (Ms.) Sahida Sharma

- o Successfully completed a twenty-one days residential training program equivalent to a UGC refresher course, Degree College Teachers Training Program in Chemistry, Indian Institute of Science, Challakere Campus, Kudapura, Karnataka, 23 Nov to 13 Dec 2016.

Dr. B Sivakumar

- o Attended the International Conference on Nanoscience and Nanotechnology, Vellore Institute of Technology, VIT, Vellore, India, 19-21 Oct 2016.
- o Attended Bioprocessing India 2016, BPI, Center of Innovative and Applied Bioprocessing (CIAB), Mohali, 15-17 Dec 2016.

Dr. S Prathap Chandran

- o Attended the Inspire faculty monitoring-cum-interaction meet for Chemical and Materials Sciences, KIIT University, Bhubaneswar, Odisha, 16-17 Jan 2017.

BIOSCIENCES

Dr. B S Vijayakumar

- o Invited as a Ph.D. examiner and conducted a Ph.D. defense (viva voce), Bharathiyar University, Coimbatore, Tamil Nadu, 27 Apr 2017.

Dr. (Mrs.) Pallavi C

- o Attended an Introductory Course on Flow Cytometry, Dept. of Biotechnology, Indian Institute of Technology Madras, Chennai, Tamil Nadu, 25-26 May 2017.

Sri P Sujith Kumar

- o Attended a training course on Regenerative medicine, LV Prasad Eye Institute (LVPEI), Hyderabad, Telangana, 24 Jan to 4 Feb 2017.

FOOD & NUTRITIONAL SCIENCES*Dr. (Mrs.) B Andallu*

- o Member of the editorial board of Annals of Phytomedicine, an international, peer-reviewed scientific journal, dedicated to publishing cutting edge research in all areas of phytomedicine. ISSN: 2278-9839x

Mrs. A Sumana

- o Attended a one-day UGC-sponsored National Workshop on Researcher Development Framework for Faculty and Students in Higher Education, IQAC and RDC Government College, Anantapur, Andhra Pradesh, 19 Apr 2017.

Ms. Meera Manikkavachakan

- o Attended a district-level workshop on Smart targeting for Nutrition Mission, Dept. of Women & Child Welfare and UNICEF, Zilla Mahila Samakhya, Anantapur, Andhra Pradesh, 18 Jan 2017.

MANAGEMENT & COMMERCE*Dr. (Miss) N Niranjana*

- o Glory for India Award 2017 by International Publishing House, New Delhi

Dr. Sayee Manohar K

- o Chair Person, 2nd National Seminar on Innovation in HR, Marketing, Information Technology and Finance, Mangalore Institute of Management & Science College, Bangalore, 7 Jan 2017
- o Attended a faculty orientation on Innovative Techniques of Management Teaching, T John Institute of Management & Science (TIMS), Bangalore, 15 Sep 2016.
- o Attended a faculty orientation on Teaching to facilitate teaching, Sundaram Learning (A Division of Sundaram Finance) 12 Oct 2016.
- o Attended a faculty orientation on Advanced Data Analysis for Research, School of Management, Kristu Jayanti College, Bangalore, 29-30 Nov 2016.
- o Attended a workshop on Funding Agencies Research Grant & Proposal Writing, St. Joseph College, Bangalore, 20 Jun 2016.

Prof. (Miss) Ch Radhakumari

- o Excellent Paper Award, International Conference on Recent Trends in Computer Technology and Management for the research paper, Best out of waste: A prototype software solution for fund management using MATLAB-GUI, 23 Oct 2016, Hyderabad.

Dr. (Miss) T R Rajeswari

- o Keynote Speaker and Session Chair, Heber International Conference on Applications of Actuarial Science, Mathematics, Management and Computer Science, Trichirapalli, Nov 2016.
- o Session Chair, 2nd International Conference on Inclusive Economic Growth & Sustainable Development, SDM Institute for Management Development, Mysore, Karnataka, 18-19 Nov 2016.



Dr. (Mrs.) Swetha Thiruchanuru

- o Attended a two-day understudy programme, TVS Way, TVS Motors, Hosur, Tamil Nadu, 27-28 Mar 2017.

Sri S Sai Manohar

- o Attended a two-day understudy programme, TVS Way, TVS Motors, Hosur, Tamil Nadu, 27-28 Mar 2017.

Sri L K Prasad Rayaprolu

- o Attended a workshop on Funding Agencies Research Grant & Proposal Writing, St. Joseph College, Bangalore, 20 Jun 2016.
- o Attended a faculty orientation on Data Analysis for Research, Kristu Jayanti College, Bangalore, 29-30 Jun 2017.
- o Attended a faulty orientation on Teaching to facilitation teaching, Sundaram Learning (A Division of Sundaram Finance) 12 Oct 2016.

Sri M S Sai Vinod

- o Delivered Master Classes on Human Resources Management and Big Data for the Health Care Sector, IIM-Bangalore, July 2016 and 11 Mar 2017.

Sri B Chandrasekhar

- o Attended a faulty orientation on Teaching to facilitation teaching, Sundaram Learning (A Division of Sundaram Finance) 12 Oct 2016.

Dr. Sanjay Mahalingam

- o Attended a faulty orientation on Teaching to facilitation teaching, Sundaram Learning (A Division of Sundaram Finance) 12 Oct 2016.

Sri V N Prakash Sharma

- o Attended a workshop on Train the Trainers in GST, The Institute of Chartered Accountants of India (ICAI), Chennai, 22-23 Sep 2016.
- o Attended the Institute of Company Secretaries of India (ICSI) 1st Global Congruence to Promulgate International Corporate Governance Day, Hyderabad International Convention Centre (HICC), Hyderabad, 8-9 Dec 2016.

ECONOMICS***Dr. R Prabhakar Rao***

- o External Observer, Internal Quality Improvement Program, Christ University, Bangalore, 28 Sep 2016.
- o Reviewer, American Mathematical Society (An association of professional mathematicians dedicated to the interests of mathematical research and scholarship, and serves the national and international community through its publications, meetings, advocacy and other programmes).
- o Reviewer, Journal of Indian Society for Probability and Statistics.

EDUCATION***Prof. (Miss) Madhu Kapani***

- o Invited as a Resource Person, National Seminar on Sarvepalli Radhakrishnan- A great philosopher, educationist and statesman, Govt. College Anantapur, Andhra Pradesh.
- o Invited as a Resource Person, National Seminar on Impact of Human Values and Professional Ethics on Quality of Higher Education, Government Degree College, Uravakonda, Andhra Pradesh.

SUB-DEPARTMENTS & LANGUAGES***Dr. (Miss) Kiron Bala Arora***

- o Delivered the keynote address for Hindi Divas Celebrations at Sri Krishnadevraya University, Anantapur, Sep 2016.
- o Invited as a Ph.D. examiner and conducted a Ph.D. defense (viva voce), Dept. of Hindi, Tanta University, Yamuna Nagar, Rajasthan, Mar 2017.

Prof. R Gangadhara Sastry

- o Invited Talks at Government Govt. College, Anantapur, Academic year 2016/17.

Dr. N Venkatesha Rao

- o Invited as a Resource Person to teach Haribhaktisara of Vadiraja (with special relation to grammar), Bhagavata tatparya and Vaikunta varnam of vadiraja, Poorna Prajna Samshodhana Samsthe, Bangalore, 28 Oct 2016 and 15-20 May 2017.

Dr. (Mrs.) M Prabhulla

- o Invited as a Resource Person, National Seminar on Vedangas - Vedic studies - New Possibilities, Kadavallur Anyonyaparishad, Kadavallur, Kerala, 12-13 Nov 2016.

NEW FACULTY

- o Dr. Praveen Kumar Lavudi, Asst. Professor, Dept. of Mathematics & Computer Science
- o Sri Shekhar Nilkandappa Todkar, Asst. Professor, Dept. of Mathematics & Computer Science

STUDENT PARTICIPATION & ACHIEVEMENTS

ORGANIZATIONAL VISITS

At the end of each academic year, final year graduating students from various departments go on official visits to reputed organizations to get a feel of how what they learn in the classroom is applied in the real world. Students are accompanied by a few faculty members on these trips.

During the academic year 2016/17, these included:

Physics

I M.Tech. in Optoelectronics & Communications students, Hyderabad and Bangalore, 16-22 Apr 2017. Organizations visited:

Hyderabad: Laboratories of Prof. Balaji Srinivasan and Prof. Krishna M Sivalingam, Heterogenous, Sundaram Clayton, KLA Tencor and ALERT (NGO specialised in training volunteers to address medical emergencies).

Bangalore: CISCO, Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Whitefield, Bangalore (IT operations and Maintenance), Tejas Networks Ltd. and ISRO Satellite Center.

Food & Nutritional Sciences

I M.Sc. Food & Nutritional Sciences, II M.Sc. Food Science and Nutrition and II M.Sc. Food Technology students, Bangalore, 14-17 2017. Organizations visited: SSSIHMS, Griffith Foods Private Ltd., Mysore Fruit Products, Bliss Chocolates, Krish Food Technologies Pvt. Ltd., Nilgiris Dairy, Srinidhi Roller Mills Pvt. Ltd., UNIBIC Industries and Vokain Foods.

Management & Commerce

Anantapur Campus: II M.B.A. students, Chennai, 16-20 Apr 2017. Organizations visited: Marigold Hotel, Medha Servo Drives, Mahindra & Mahindra, Green Park Hotel and Care Hospital.

Prasanthi Nilayam Campus: II M.B.A. students, Hyderabad, 17-20 Apr 2017. Organizations visited: Ashok Leyland, Sundaram Clayton LTD, Symrise AG, Butterfly, Renault Nissan and Roca Parryware.

93%

Exams-Pass-Rates

Undergraduate Programmes

95%

Exams-Pass-Rates

*Postgraduate &
Professional Programmes*

PROJECTS & DISSERTATIONS

Listed below are selected topics / areas of postgraduate and professional programme projects and dissertations.

Mathematics & Computer Science

M.Sc. in Mathematics and M.Tech. in Computer Science

Facial Emotion Recognition Using Dynamical System, Intelligent Video Surveillance for Monitoring Elderly in Home Environments, Sentiment Analysis on Twitter Data using Machine Learning Techniques, Image Interpolation, Blockchain-based Big data Solutions, Integrating Anomaly detection strategies into SNORT, Distributed Graph Algorithm on Giraph, Deep Learning using Tensor Flow, A study of Age Invariant Face Recognition

Physics

M.Sc. in Physics, M.Sc. in Materials Science and M.Tech. in Optoelectronics & Communications and Nuclear Medicine

Third order nonlinear Optical properties of doped bismuth titanate compounds, Paper Microfluidics, Interpolation Methods for SPECT Images, Supercapacitor Power Cells Based on Peanut Shell Derived Carbon, Synthesis and Characterization of Yttrium Ferrite Perovskite system towards microwave Absorber, Humidity sensor and photovoltaic applications, Development of Semi-Automatic tool for analysis of Scintigraphic images in Nuclear medicine, GMPLS network element simulator using docker containers, Development of Bluetooth Low energy (BLE) enables 5-lead ECG monitoring device

Chemistry

M.Sc. in Chemistry and M.Tech. in Analytical Methods and Chemical Instrumentation

Synthesis and Characterization of Celecoxib Loaded Mesoporous Silica Nanoparticles and Their Potential Antibacterial Applications A study of inclusion complex formation between cyclodextrin and a few selected drugs, Characterization and Antimalarial study of Diarylidene cyclopentanones, Studies on Lithium intercalated WS₂ and Silver Nanoparticle Decorated Composites with Cellphone-Based Surface Plasmon-Coupled Emission Platform, Cellphone Monitoring of Surface Plasmon-Coupled Emission Enhancements with Ag-Halloysite Architectures

Biosciences

M.Sc. in Biosciences

Phylogenetic analysis of Clinically Isolated MDR. *Acinetobacter baumannii* by Random Amplified Polymorphic DNA, In vitro culture of *Tecoma stans* L. and phytochemical Analysis, Wastewater Treatment using Microbial Fuel Cells, A study on effect of hypoxia on the expression DNA repair proteins, A study on factors affecting biofilm growth

*Food & Nutritional Sciences**M.Sc. in Food & Nutritional Sciences and M.Sc. in Food Technology*

Development of value-added passion fruit (*Passiflora edulis* Sims) product, Formulation and characterization of a frozen dairy dessert, Antioxidant effects of ajwain seeds and oil in the in vitro systems and in human erythrocytes and leukocytes, Development and popularization of millet based products, A study on consumer awareness and acceptability of foods with biocolours

*Management & Commerce**M.B.A.*

Effect of GST on Logistics Sector in India – Aspects and Prospects, A Study on Foreign Exchange Risk Management Practices of Indian MNCs, Impact of Critical Factors on Credit Rating of Select Indian Infrastructure Companies, A Study of Select Indian Startups by Developing VUCA Model, A Stock Return Prediction Model Using the Kernel nearest neighbour Algorithm, Challenges of Digital Payments in Rural India, Study of Consumer Behaviour in Mobile Web usage and Opportunities for Mobile Advertisements in Darjeeling Town Region, Green SMEs: A Critical Analysis of its' Opportunities and Challenges

*Economics**M.A. in Economics*

Determinants of Stock Prices in India: An ARDL Approach, Need and Prospects for Solar Power in India, Determinants of Poverty Reduction in India, Determinants of Indian Exports: An Empirical Investigation of the Agriculture and Services Sectors

NATIONAL EXAMINATIONS

A significant number of SSSIHL final year postgraduate students qualified in national exams such as the GATE/JEST or the CSIR-UGC NET in 2016/17. The list below includes the national rank for each exam.

Varshaneya V (Computer Science)

5834 (GATE)

A V R P Saichand (Computer Science)

8944 (GATE)

Karam Rai (Computer Science)

14012 (GATE)

Rahul Raja Pattar (Mathematics)

217 (GATE) | 154 (CSIR UGC-NET for JRF)

K Sai Manoj (Engineering Sciences)

421 (GATE)

Santosh C R (Physics)

432 (GATE)

Pankaj Kumar (Biosciences)

2 (GATE) | 10 (CSIR UGC-NET for JRF)

C Prasanth (Biosciences)

272 (GATE) | 27 (CSIR UGC-NET for JRF)

Sai Manoj Lingamallu (Biosciences)

95 (GATE) | 40 UGC-NET (LS)

Swaroop (Biosciences)

44 UGC-NET (LS)

V M Datta Darshan (Biosciences)

1311 (GATE)

Bhargava Sai M (Biosciences)

1519 (GATE)

Utkarsh Bele (Biosciences)

2521 (GATE)

Ashrita C Haldipur (Home Science)

UGC-NET (LS)

Suriseti Tejaswi Uma Bharathi (Home Science)

UGC-NET (LS)

Chandrahaas C S (Management)

UGC-NET (LS)

S Sai Krishnan (Management)

UGC-NET (JRF)

Shreyas Nayak (Management)

UGC-NET (LS)

Kamal Saurabh Yadav (Management)

UGC-NET (JRF)

Pogaku Varun Kumar (Management)

UGC-NET (LS)

Pogaku Tharun Kumar (Management)

UGC-NET (JRF)

Challa Lokesh (Management)

UGC-NET (JRF)

Rajiv Gurung (Economics)

UGC-NET (JRF)

Sayel Basel (Economics)

UGC-NET (LS)

GATE Graduate Aptitude Test in Engineering | CSIR (Council of Scientific & Industrial Research) | JRF (Junior Research Fellowship) | NET (National Eligibility Test) | LS (Lectureship)
All ranks are national (All India Rank)

17%

GATE

4%

CSIR UGC-NET for JRF

8%

UGC-NET (LS)

5%

UGC-NET (JRF)

National Examinations

This data pertains to final year postgraduate students who are eligible to write these exams

RESEARCH PROJECTS

SSSIHL CONTINUES TO PURSUE NEEDS-BASED RESEARCH THAT WILL HELP ALLEVIATE PROBLEMS AFFECTING THE POORER SECTIONS OF SOCIETY. DURING THE ACADEMIC YEAR 2016/17, THE TOTAL VALUE OF ONGOING PROJECTS AT THE UNIVERSITY WAS ₹5.82 CRORES.

MATHEMATICS & COMPUTER SCIENCE

Automatic Defense Against Zero Day Polymorphic Worms in Communication Networks using Machine Learning Algorithms
SSSIHL R&D

PHYSICS

Design and Development of Small Organ Imaging Gamma Camera System
SSSIHL R&D

Multi Model Microscope: Field Trails (Phase II)
DST-TSDB

FIST (Fund for Improvement of Science & Teaching Infrastructure)
DST

Research Based Reforms in Physics Instruction: Classroom and Laboratory
VGST, DST, Govt. Karnataka

CHEMISTRY

Synthesis of novel Andrographolide derivatives as potential anticancer and antibacterial agents
CSIR

Development and Validation of an indigenous high sensitivity low cost paper based assay for Lp-PLA2 and other cardiac markers to identify Indians at risk for early onset of coronary artery disease
4S Foundation (USA)

Regiospecific Functionalisation of Anisotropic Nanoparticles and Implications Towards Generation of Plasmonic Metal Nanoclusters
DST INSPIRE Faculty Award

BIOSCIENCES

Augmenting Postgraduate Teaching & Research Facilities in Dept. of Biosciences
DST FIST

OMIX research and diagnostic laboratories Pvt. Ltd.
OMIX Research

Bioinformatics Infrastructure Facility (BIF)
DBT

Mechanism of ATP secretion and the role of ATP-activated P2 receptors in the Microglial Inflammatory response: implications for Multiple sclerosis
DBTD



RESEARCH HIGHLIGHTS

TO VIEW THE CURRENT RESEARCH AREAS FOR EACH DEPARTMENT, VISIT SSSIHL.EDU.IN GIVEN BELOW ARE HIGHLIGHTS OF SELECTED RESEARCH WORK AT SSSIHL IN 2016/17.

SCIENCES

DISEASE BIOLOGY: UNDERSTANDING OF EARLY BIOMARKERS OF A VASCULAR NECROSIS OF FEMORAL HEAD (AVNFH)

Avascular necrosis of femoral head is a debilitating bone disorder which occurs as a result of the interruption of blood supply to the femoral head (the hip joint) region. The disease typically affects young and middle-aged male members of the general population. Genetic studies pinpoint the role of genetic alterations associated with the incidence of AVNFH. But there are indeed conflicting results in regard to the association of the disease with genetic alterations. Different omics approaches—namely the genomic, transcriptomic and proteomic approaches—have been used by researchers to elucidate the pathogenesis of AVNFH.

A metabolic approach is by far the most superior approach as it closely resembles the phenotype. Homocysteine is one such metabolite which is an inevitable evil in the one carbon metabolism in humans. Researchers at the Dept. of Biosciences, SSSIHL along with doctors from the Dept. of Orthopaedics, Sri Sathya Sai Institute of Higher Medical Sciences, Prasanthigram, have characterized for the first time, the levels of homocysteine, vitamin B12, vitamin B6 and other such metabolites in the diseased patients belonging to the Indian population. This study showed that metabolites such as homocysteine, adenosine, S adenosyl homocysteine and others were significantly increased in diseased patients. Vitamin B12, B6, betaine and other metabolites were significantly reduced in the diseased population.

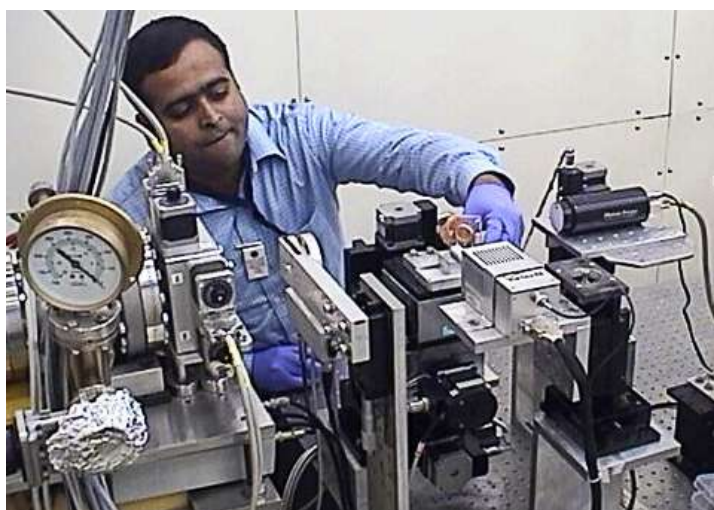
The metabolic alterations discovered in the blood of avascular necrotic patients were also shown to have structural alterations in the bone phenotype. Chemical composition and ultra-structural characterization of bone samples of AVNFH were significantly altered when compared to controls (normal, healthy samples). Bone remodelling was intensely exhibited by the intense osteocalcin staining noticed near the necrotic areas. This study is predicted to lead to possible therapeutic targets which reflect the prognosis of the disease.

TROPICAL MICROGREENS: A VIABLE ANSWER TO MALNUTRITION IN RURAL INDIA

Researchers at the Dept. of Food & Nutritional Sciences, SSSIHL conducted an independent study on ten varieties—including some that have never been explored—of tropical microgreens (which have higher nutritional value than mature vegetables) to address 'hidden hunger' - micronutrient malnutrition, a major nutritional concern in India caused by the deficiency of essential vitamins and minerals.

Tropical microgreens can significantly increase rural and household food and nutritional security. The cultivation of these under semi-arid climate conditions was standardized by the researchers. This can create sustainable initiatives to address the production of microgreens.

Interestingly, roselle microgreens (*Hibiscus sabdariffa* L.), an indigenous leafy vegetable, showed comparatively higher level of vitamin C, lutein and total polyphenols. French basil, radish and



sunflower microgreens also showed good amount of antioxidant phytochemicals. Further, the microgreens also proved to be a better source of vitamin C, total polyphenols and exhibited higher DPPH radical scavenging activity compared to their mature counterparts. ICP-OES based mineral profile indicated microgreens to be good sources of essential elements, particularly zinc and selenium. Preliminary studies indicate these tiny greens to be lower in sodium content and the anti-mineral oxalic acid compared to mature greens.

With its rapid growth cycle, limited space requirement and organic fertilizer input, ease of digestibility and rich flavours, microgreens represent a new format of greens with immense potential as a homestead vegetable production strategy. Women and small scale farmers in the rural-urban continuum could set up their own microgreens gardens/farms as a commercially viable enterprise. This in turn will ensure household food and nutritional security and improve their economic stability.

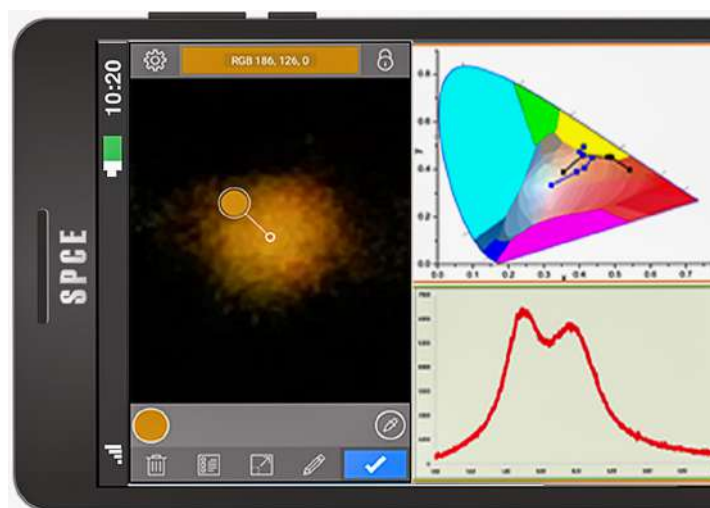
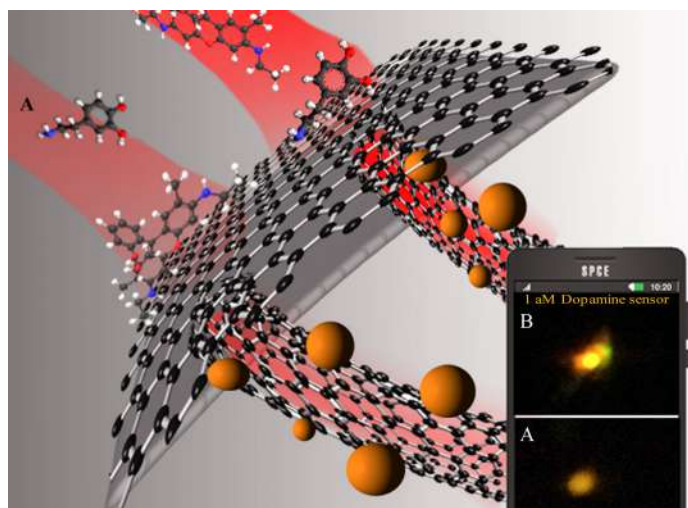
NEXT-GEN PLASMONICS TECHNOLOGY FOR POINT-OF-CARE DIAGNOSTICS

Mobile phones have become ubiquitous in this age of smart technologies. Taking one step forward, mobile phone based sensing technologies have started to gain attention. Much of medical and biological sensing is based on the fluorescence phenomenon. However, the limitations of this technique require modifications towards development of sensing platforms and point-of-care devices. In this regard, research undertaken at the

Plasmonics Laboratory, Dept. of Chemistry, SSSIHL in 2016/17 was focused on overcoming the drawbacks of fluorescence with the use of surface plasmon-coupled emission phenomenon and evolve it as a mobile phone based sensing. We have to an extent accomplished this journey of a home-built platform to a low-cost, mobile phone based next-gen plasmonics technology.

The images shown below present a snippet of the research outcome on development of mobile phone based surface plasmon-coupled emission technology. By trapping a quantum qubit emitter in a nanocavity, the fluorescence was enhanced by 180-fold. This was integrated into the proof-of-concept mobile phone based sensing platform and was tuned to sense of DNA and Dopamine at attomolar concentrations.

Further research in this regard is now being funded by Tata Trusts and the Department of Science and Technology, Govt. of India, towards application of this technology for the development of point-of-care, mobile health diagnostic devices at SSSIHL in collaboration with Sri Sathya Sai General Hospital (SSSGH), Prasanthi Nilayam, Sri Sathya Sai General Hospital (SSSGH), Whitefield, Bangalore and Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Whitefield, Bangalore.



MANAGEMENT & COMMERCE

DISPARITY IN INCOME DISTRIBUTION AND SCARCITY OF RESOURCES

Research in the area of income distribution included developing a stylized model for creating inclusive strategies for business organizations. Researchers developed an implementable model to enfranchise communities by means of inclusion in their firms' value-chains, either as producers, suppliers, partners, employees, or owners. This will result in higher and stable income for the poor. In addition, research on implementable strategies for Sustainable Development of Rural India focuses on augmenting the income of rural households through skill development (vocational skills or native skills) and implementing various livelihood strategies, which would enable them to be economically strong and sustainable in long run. Also, studies on Micro, Small & Medium Enterprises (MSME) financing have shown that empowering the small empowers the nation's economy.

In the area of scarcity of resources, one study—focusing on water scarcity—has developed a workable model on deciding on the scale of wastewater treatment plants and the mechanism of cost recovery by using the treated plant for farming purposes. Another study on education in the rural sector was conducted to improve the intervention mechanisms; to ensure that high impact is achieved in the education sector and how to leverage technology as an enabler in transforming rural education. Lastly, a study titled, Empowered Women – A Mast for Sustainable Development, Paradigm Shift from Homes to Firms, looked at how empowering first generation women entrepreneurs can create value for the home and the nation.

ECONOMICS & HUMANITIES

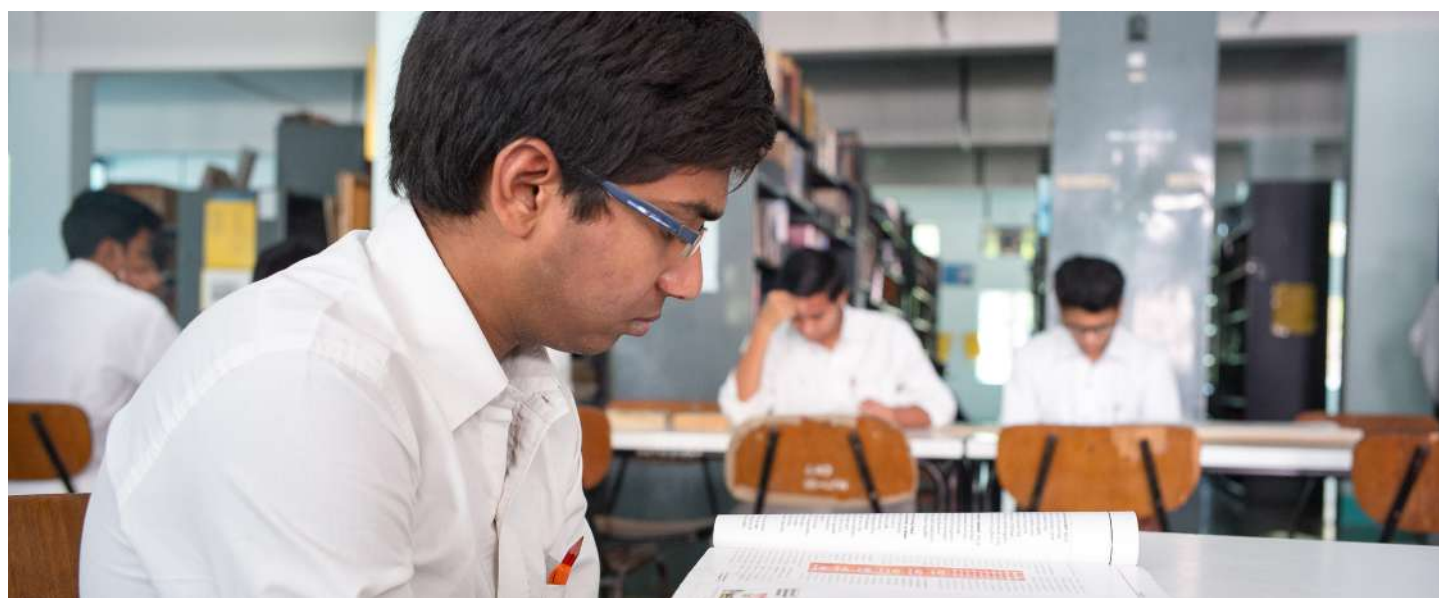
MACROECONOMETRIC MODELLING OF THE INDIAN ECONOMY

The major research focus in Economics is Macroeconometric Modelling of the Indian economy. This includes theoretical and empirical issues relevant to macro-modelling and the use of models in forecasting, policy analysis and planning, including validating these models for their relevance and policy implications.

This year, one of the research studies was on econometric modelling of current account balance of India's Balance of Payments. The earlier studies done in this area have either looked at trade flows or services independently. It is important to build a structural model of overall current account in order to derive relevant policy implications.

This study—utilising the available econometric techniques—attempts to analyse the trends, growth rates, composition and the direction of India's exports and imports of goods and services so as to be able to identify the determinants of these flows at aggregate and disaggregate levels. A substantive objective of this study is to work out a structural model for the current account of India's balance of payments. The estimated models are subjected to meaningful simulation exercises in order to bring forth the important policy implications (in areas such as the external sector, financial sector, fiscal and monetary policies).

Inter dynamics among the current account variables and macroeconomic variables is evaluated using the VAR model, Impulse Response Function and Variance Decomposition. Through Struc-



tural Break Analysis and Regime Switching Models the dynamics between Current Account Balance (CAB) and Gross Domestic Product (GDP) is highlighted. The resulting econometric results with their important policy implications turn out to be relevant to understand India's Current Account Balance. The importance of this analysis is clear in view of the highly, globalized system that has prevailed in the world for the last three decades or so and is likely to get stronger in the years ahead.

MEDIA, POPULAR CULTURE, FANTASY FICTION AND LITERARY STUDIES

Research in English Language & Literature this year focused on a range of issues. For example, in the area of media discourse. Everyone knows the influence the media has in a democracy, and the importance of media discourse in shaping public opinion. Papers in this area have been presented at international conferences outside India and received very encouraging feedback.

Another area of study has been culture studies. With popular culture taking an exceedingly important place in the life of the intelligentsia, culture is studied through the lens of historiography. Papers in this area, as also papers dealing with fantasy fiction that have become popular classics, have been presented and published. There are more research papers in this area that are under communication for publication.

Literary studies at the department are particularly different because of the perspective they bring in. Seeing European Drama or Modern Fiction through the lens of Bhagawan Baba's philosophy has received much appreciation.



RESEARCH SCHOLARS PARTICIPATION & ACHIEVEMENTS

PHYSICS

Sri Abhijit B K

- o Attended COMSOL Conference 2016 on Multiphysics simulation, Movenpick Hotel, Bangalore, 20-21 Oct 2016.

Sri Sumukh, Sri Nandan R

- o Attended COMSOL Conference 2016 on Multiphysics simulation, Movenpick Hotel, Bangalore, 20-21 Oct 2016.

II M.Tech. in Optoelectronics & Communications students

- o Attended the IEEE-ANTS (Advanced Networks and Telecommunications Systems) Conference, Indian Institute of Science, Bangalore, 6-9 Nov 2016. They presented three research papers at the conference.

BIOSCIENCES

Sri Kottapalli K Jayant, Sri Skanda S

- o Poster Presentation on Studies on biodiversity of microfungi from soils of Puttaparthi, Andhra Pradesh, 9th NABS National Conference on New Biological Approaches and Challenges for Sustainable Development, Madurai Kamaraj University, Madurai, Tamil Nadu, 11-12 Aug 2016.

Sri Kottapalli K Jayant

- o Training on Diabetes Research, Madras Diabetic Research Foundation (MDRF), Chennai, Tamil Nadu, 4-5 May 2017.
- o Training on Chromatography Techniques, Department of Biotechnology, Indian Institute of Technology (IIT) Madras, Chennai, Tamil Nadu, 7-14 May 2017.
- o Attended the 9th NABS National Conference on New Biological Approaches and Challenges for Sustainable Development, Madurai Kamaraj University, Madurai, Tamil Nadu, 11-12 Aug 2016.

Sri Aiyer Kartik Satyanarayan

- o Attended the 9th NABS National Conference on New Biological Approaches and Challenges for Sustainable Development, Madurai Kamaraj University, Madurai, Tamil Nadu, 11-12 Aug 2016.

MANAGEMENT & COMMERCE

Sri G Aditya

- o Third prize for the Poster presentation on Sentiment Analysis on Indian stock market using Tweets at the Max Planck-Tapmi Winter School on Bounded Rationality, TAMPI Campus, Manipal, 9-15 Jan 2017.

Sri K J Srinivas

- o Attended the International Conference on Sustainability, Learning, Living and Leading, Indian Institute of Management (IIM) Shillong Meghalaya, 2-4 Mar 2017.



RESEARCH PUBLICATIONS

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Srinivasu P D N, Vamsi D K K, Aditya, Biological Conservation of Living Systems by Providing Additional Food Supplements in the Presence of Inhibitory Effect: A Theoretical Study Using Predator-Prey Models, *Differential Equations and Dynamical Systems* (2017). DOI: 10.1007/s12591-016-0344-4

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using Deep Convolutional Networks, *IEEE 2017 International Conference on Innovations in Information Embedded and Communication Systems* (17-18 Mar 2017) ICIECS, Coimbatore, Tamil Nadu, India.

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Ch Bhaskar Vishnu Vardhan and Baruah P K, Improving the Performance of Heterogeneous Hadoop Cluster, *IEEE PDGC-Parallel, Distributed and Grid Computing (PDGC), 2016 Fourth International Conference* (22-24 Dec 2016) Jaypee University of Information Technology, Wagnaghat, Solan, Himachal Pradesh, India, pp.225-230.

V Suriya Narayan, Vijeth Bidare Vijayakumar, Sai Raam Venkatraman, and Baruah P K, Semantic Node Embeddings of Distributed Graphs Using Apache Spark, *IEEE PDGC-Parallel, Distributed and Grid Computing (PDGC), 2016 Fourth International Conference* (22-24 Dec 2016) Jaypee University of Information Technology, Wagnaghat, Solan, Himachal Pradesh, India.

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Communication System (ICIECS) (17-18 Mar 2016) Karpagam College of Engineering, Othakkalmandapam, Coimbatore, India.

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Sree Ranga Vani K and Prasada Rao D R V, MHD Convective flow of nano fluid with thermal radiation over a plate embedded in a porous medium, *International Conference on Mathematical Sciences & Engineering Applications* (23-25 Dec 2016) Visakhapatnam.

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L A Avinash Chunduri, Mohan Kumar Haleyurgirisetty, Sandeep Patnaik, Pradeep B E, Aditya Kurdekar, Jikun Liu, Indira K Hewlett and Venkataramaniah K, Development of carbon dot based microplate and microfluidic chip immunoassay for rapid and sensitive detection of HIV 1 p24 antigen, *Microfluidics and Nanofluidics*, 119, 207 (2016).

Venkataramaniah K and Tanu Rattan, Electrical Power from Nuclear Energy: An up-to-date overview, *ITAS Bulletin*, 8(1), 41-49 (2016).

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Sai Praneeth Thota, Pradeep Kumar Badiya, Sandeep Yerram, Praveen V Vadlani, Meera Pandey, Nageswara Rao G, B Siva Kumar, Rajesh Babu D, Sai Sathish R, Macro-micro fungal cultures synergy for innovative cellulase enzymes production and biomass structural analyses, *Renewable Energy*, 103 (April 2017), 766-773 (2016).

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SPECIAL ANNUAL EVENTS

THERE ARE FIVE SPECIAL ANNUAL EVENTS THAT RELATE TO THE DEVOTIONAL, CULTURAL, PHYSICAL AND SERVICE DIMENSIONS OF SRI SATHYA SAI VALUES-BASED INTEGRAL EDUCATION. THEY ARE ORCHESTRATED TO BRING OUT THE LATENT VALUES AND GOOD QUALITIES IN STUDENTS AND TEACHERS. A LOT OF PLANNING AND EFFORT GOES INTO EACH OF THESE EVENTS. ALL STUDENTS PARTICIPATE IN THESE EVENTS IN ACCORDANCE WITH THEIR INDIVIDUAL SKILLS AND TALENTS.

SUMMER COURSE IN INDIAN CULTURE & SPIRITUALITY

17-19 June 2016

Spiritual education is not a distinct and separate discipline. It is part and parcel of all types and levels of education. In fact, it is the very foundation on which a lasting edifice can be built. Secular and spiritual education are like the two halves in the seeds of pulses – the germ that sprouts in-between is fed by both.

Sri Sathya Sai Baba
Sanathana Sarathi, September 1975

Sri Sathya Sai Institute of Higher Learning held its annual Summer Course in Indian Culture & Spirituality at Prasanthi Nilayam, Andhra Pradesh between 17 and 19 June 2016. The event serves as an induction programme to all students and teachers of with an objective to expose students of the university to the rich cultural and spiritual heritage of Bharat. It orients students into Bhagawan Baba's educational philosophy and gives them deep, first hand insights into how they can directly benefit from this unique institution.

The central theme of this year's event was Bhaja Govindam—based on the composition of Adi Shankaracharya—and the programme focused on the lessons learnt from two particular discourses of Sri Sathya Sai Baba in 1973 - From Ignorance to Liberation and Seek the Company of Good People.

The morning sessions comprised of talks by external guests, a quiz on Bhagawan Baba's teachings, and Panel discussions on the divine love of Bhagawan Baba and the life lessons students learnt in His company.

The evening sessions, in the Sai Kulwant Hall, saw creative talks by students across the campuses of the university on topics such as Lessons from the Ramayana, SAI – See Always Inside, and lessons from other scriptures. Musical presentations, such as the one from students of the Sathya Sai Mirpuri College of Music on the last day of the event, and bhajans during the evening sessions were also a highlight of the event.

The post-dinner *paranayam* sessions consisted of invited speakers—typically alumni and senior teachers of the university—sharing their unique and divine experiences in the physical presence of the Revered Founder Chancellor the university, Bhagawan Sri Sathya Sai Baba.

The event concluded on Saturday, 19 June 2016 with a sumptuous lunch arranged for all attendees, after which students and faculty travelled back to their respective campuses.

PRASANTHI VIDWAN MAHASABHA

5-11 October 2016

Dasara or Navaratri is a ten-day festival, usually falling in the month of October, and is celebrated all over India in the worship



of the Divine as the Mother principle. Since the early sixties, the festival of Dasara in Prasanthi Nilayam has been closely associated with the *Veda Purusha Saptaha Jnana Yagna*. This *yagnam* is a week-long worship conducted in the Divine Presence in the Poornachandra Auditorium in Prasanthi Nilayam each year for the welfare of the whole world. The *yagnam* commences on the fourth day of Dasara and concludes with the *Poornahuti* – the final oblation that is offered on Vijayadasami, the tenth day.

The evening programmes during the seven days of the *yagnam* are held in Sai Kulwant Hall, under the auspices of the 'Prasanthi Vidwan Mahasabha', where many speakers—primarily students and functionaries of Bhagawan's educational institutions—address the gathering on topics concerning spirituality and philosophy, Bhagawan's teachings and experiences of devotees.

The topics for Prasanthi Vidwan Mahasabha 2016 were: The Resonance of Love, Experiences with Swami after Mahasamadhi, Bhagawan Baba - Avatar of the age, Veda Purusha Saptaha Jnana Yagna, Darshanam, Sparshanam and Sambhashanam, Transformation - The Role of the Divine.

SRI SATHYA SAI GRAMA SEVA

3-11 October 2016

Grama Seva took place from 3 to 11 October 2016. Students and teachers of the University served a population of almost 3,00,000 people in 153 villages over the nine day period. This included the distribution of 46,260 *sarees*, 42,305 *dhotis* and almost 3 lakh food packets and *ladoos*.

The service activity is part of the university curriculum for all students. The university students, research scholars and teachers largely managed the entire project—the planning, resourcing,

organizing and implementation—from start to finish. This included:

- Planning
- Food Preparation
- Packing
- Logistics
- Serving

Impact of Grama Seva

The Revered Founder Chancellor, when initiating this project in the year 2000, stressed that the greatest beneficiaries are not the villagers, but the students. What impact does Grama Seva have on students and villagers?

On Students

- It inspires students to live their lives along a higher ideal
- It sensitizes them to the problems of our society, to rural life and the needs of lesser privileged sections of the community
- It trains students to work in teams and groups under constraints of time and resources
- It enables them to appreciate the joy associated with service

On Village Folk

- It kindles hope in their hearts, reinforcing their faith in the truth that God will take care of them
- It inspires them. The *prasadam* distributed after *nagarsankirtan* and *bhajans* is symbolic of Bhagawan Baba's Divine love, compassion and grace, and of His assurance of protection
- It provides them with food and clothes at the physical level, hope and faith at the mental level and bliss at the spiritual level



ANNUAL CONVOCATION

22 November 2016

Sri Sathya Sai Institute of Higher Learning (Deemed to be University) held its 35th Annual Convocation at Sai Kulwant Hall, Prasanthi Nilayam in the Divine Presence at 10:30 a.m. As the University turned thirty-five, the event was a testimony of how the education model based on values-based education at the university level has stood the test of time and continues to thrive.

The chief guest of the 35th Annual Convocation was Dr. R Chidambaram, Principal Scientific Adviser to the Govt. of India and Homi Bhabha Professor - Department of Atomic Energy. Dr. Chidambaram is a highly decorated Physicist who has served in the best interests of the country for several decades. He is best known for playing an integral role in India's nuclear weapons program. He coordinated the test preparation for the Pokhran-I (1975) and Pokhran-II (1998).

The format, planning and execution of the SSSIHL convocation ceremony is second to none. The ceremonial procession was led by the university brass band, two students carrying the University Standards on either side of the Registrar (who carried the Ceremonial Mace). Other members of the procession included the Chancellor, Vice-Chancellor, Deans and the Heads of Departments along with the Chief Guest, members of the Sri Sathya Sai Central Trust and the Board of Management.

Following the invocatory *veda* chanting, the Vice-Chancellor, Prof. K B R Varma prayed to the Revered Founder Chancellor to declare the convocation open. The Convocation was then declared open in the Divine voice of Bhagawan Baba.

The programme included speeches by the Vice-Chancellor, the chief guest and the Revered Founder Chancellor (broadcast of a previous Convocation Discourse).

Following this, 498 candidates for the various programmes of study were admitted to their various degrees (undergraduate, postgraduate and professional programmes as well as 28 Gold Medallists, and ten Ph.D. awardees) by the Honourable Chancellor, Justice M N Venkatachaliah, former Chief Justice of India.

Annual Convocation Drama

The evening session consisted of the Annual Convocation Drama, performed by the students of the university.

The notion that faith comes first and only then experience, was beautifully highlighted in this year's convocation drama, *Rang-e-mohabbat* (The Colour of Love). The story focused on the journey of perseverance of Vijay, a smart, brilliant and ambitious child from a small town who dreams big. The story highlights the different colours of love that life throws at Vijay and how—eventually—all the dots connect. The drama unfolds the unique transformation of Vijay from an arrogant and ambitious graduate to a devoted and humble young man. A transformation that only the Love of Sai can bring about.

All-Round Gold Medallists

Ayushi Kapoor

Anantapur Campus - Bachelor of Business Management

Devjeet Auddy

Prasanthi Nilayam Campus - Master of Arts (Economics)

Manasali Sai Kumar

Brindavan Campus - III B.Sc. (Hons.) in Chemistry

Vinayak Narayanankumar

Muddenahalli Campus - Bachelor of Business Management



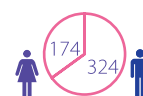
Gold Medallists

Krishnapriya M	Bachelor of Arts
Adithi R Upadhya	Bachelor of Science (Honours) in Physics
KV Seetarama Mani Chandrika	Bachelor of Science (Honours) in Chemistry
Kotha Hridhay Keerthana	Bachelor of Science (Home Science)
Sai Harini N	Bachelor of Commerce (Honours)
Sangrakhi Ghosh	Bachelor of Business Management
Krithika Lakshmi C	Master of Arts in English Language and Literature
Gayathri S	Master of Science in Food Science and Nutrition
Munthala Sainirupama	Master of Science in Food Technology
Sai Sudha N	Master of Business Administration
Yougal Chettri	Bachelor of Arts (Honours) in Economics
Turlapaty Sai Harish Kumar	Bachelor of Science (Honours) in Economics
Ayyagari Ranga Shaarad	Bachelor of Science (Honours) in Mathematics
R Sai Naveen	Bachelor of Science (Honours) in Biosciences
Parab Prashant Mehl	Master of Arts in Economics
Potti Krishna Prasanth	Master of Science in Mathematics Specialization in Computer Science
Adhitya Sekhar	Master of Science in Physics Specialization in Nuclear Physics
Balaram Khamari	Master of Science in Biosciences Specialization in Biotechnology
Karthik Ramakrishnan S	Master of Financial Management
Daksh Seth	Master of Business Administration in Finance
Bennabhaktula Guru Swaroop	Master of Technology in Computer Science
Shreesha Rao D S	Master of Technology in Optoelectronics and Communications
M Chaithanya Theja	Master of Technology in Nuclear Medicine
Nagaraju Dhulipalla	Integrated Master of Computer Applications

Ph.D. Awardees

Sai Hareesh A - Computer Science <i>Novel Local Descriptors for Texture Analysis, Motion Estimation and Image inpainting</i>
Mulpur Pradyumna - Physics <i>Engineered Nano Spacer Layer based Thin Film Architectures for Enhanced Surface Plasmon Coupled Emission Enabled Biochemical and Biomedical Sensing</i>
Sandeep Patnaik - Physics <i>Novel Nanoformulations for Enhanced Oral Bioavailability of Some Poorly Water Soluble Non-Steroidal Anti-Inflammatory Drugs</i>
Ch L Adinarayana Avinash – Physics <i>Development of Novel Fluorescent Nanoparticles based Diagnostic Assay for the Early, Rapid and Accurate Detection of HIV Infection</i>
R S Sai Siddhardha – Chemistry <i>Nanomaterials for Catalytic & Electrocatalytic Applications</i>
Sai Giridhar Sarma Kandanur – Chemistry <i>Discovery of New C-12-Substituted-14-deoxy-Andrographolide Derivatives as Potent Anti-Cancer Agents</i>
S Venkatesh – Chemistry <i>Neoteric Advancements in Surface Plasmon-Coupled Emission Platform</i>
Iyer Shobha Ramamurthy – Food Science & Nutrition <i>Phytochemical and Therapeutic Evaluation of Aniseeds (<i>Pimpinella anisum</i> L.)</i>
Chandrasekhar B – Management <i>A Study on Micro-savings and Saving Behavior of the Poor: Hurdles and Opportunities</i>
Amey Deshpande – Management <i>Enterprise Performance Measurement Systems in Small and Medium Sized Enterprises - Model Development</i>

498
Graduates



24
Gold Medallists



10
Ph.D
Ph.Ds awarded

ANNUAL SPORTS & CULTURAL MEET

11-15 January 2017

Why do all the Sai educational institutions at Prasanthi Nilayam have an elaborate Annual Sports & Cultural Meet every year? The singular focus of all Sai students for the Annual Sports & Cultural Meet has always been to please Swami and make Him proud. On the other hand, Swami—with His divine vision—made sure that these pure feelings of Love were translated into the pursuit of excellence in every facet of a student's evolution.

One of the foremost of these facets is developing Self Confidence. From concept to performance, each event brings home challenges that seem unsurpassable at first; but with dedication, teamwork and facing fears and doubts, they culminate into outstanding performances.

The other amazing aspect of Sports Meet is thriftiness. With meagre resources, students put together props that are beautiful, often with recycled materials. This brings to the fore not just creative energy and original ideas, but also a sense of unity as you must work with one another to achieve excellence in a limited amount of time under immense pressure.

The fact that the Sports Meet has 100% participation from teachers and students is an amazing feat, unparalleled in the field of education. This fact also encourages the cultivation of discipline. If one student is late for practice, the entire team is held up.

In this manner, slowly, over the years, Swami evolved the culture behind the scenes of the Annual Sports & Cultural Meet to put in effect all the underlying principles of Sri Sathya Sai Values-based Integral Education for students and teachers.

Perhaps as He always said, The End of Culture is Perfection.

Sports Meet

11 January

Anantapur, Brindavan, Prasanthi Nilayam and Muddenahalli Campuses presentations:

Rythmic Yoga, Pattern Striders, Sai Rangers, Yobics, Dexters, Skyrunners, Impavidos, Punjabi Gabrus, Light Fantasy, Martial Arts, High Flyers, Torch Drill and LED & Fire Poi.

Cultural Meet

12-15 January

- Video Presentation entitled '*Sai'ward: Through Sai's Words* by the students of Anantapur Campus
- Drama presentation entitled *Darshan – The true vision* by the students of Muddenahalli campus
- Drama presentation on *The life of Sant Surdas* by the students of Brindavan campus
- Drama presentation entitled *Bhakti Pravaham – A journey to the Divine* by the students of Prasanthi Nilayam campus

Prize Distribution Ceremony

15 January

The Prize Distribution Ceremony marked the end of the Annual Sports and Cultural Meet for the academic year 2016/17. It consisted of speeches and giving away the cups and prizes to the students of all Sai educational institutions that excelled in individual and team events for sports, cultural and fine arts at their respective establishments. It included brief speeches by a teacher of SSSIHL and several students highlighting the significance of the event.



Athletics Champions

Devika S
Postgraduate, Anantapur Campus

Priyanka Antil
Undergraduate, Anantapur Campus

Santhosh Basappa Nagouda
Postgraduate, Prasanthi Nilayam Campus

Thota Sujendra
Undergraduate, Prasanthi Nilayam Campus

Praveen Kumar Reddy G
Brindavan Campus

Krishnapuram Anil Kumar
Muddenahalli Campus

Cultural Champions

Aswathy Suresh Babu
Undergraduate, Anantapur Campus

Sourabh Kumar Pramanik
Postgraduate, Prasanthi Nilayam Campus

Sai Shravan N
Undergraduate, Prasanthi Nilayam Campus

Sashank S
Brindavan Campus

M Adithya Krishna
Muddenahalli Campus

Fine Arts Champions

Kotha Hridhay Keerthana
Postgraduate, Anantapur Campus

Sumani Rai
Undergraduate, Anantapur Campus



OTHER INTEGRAL EDUCATION ACTIVITIES

ALL STUDENTS AT SSSIHL SPEND 60% OF THEIR TIME AT UNIVERSITY ON INTELLECTUAL ACTIVITIES (PRIMARILY ON THEIR STUDIES). THE REST OF THE 40% OF TIME IS SPENT ALMOST EQUALLY ON ACTIVITIES RELATED TO THE INTEGRAL EDUCATION DIMENSIONS OF DEVOTIONAL, CULTURAL, PHYSICAL AND SERVICE. THESE ARE HIGHLIGHTED BELOW.

DEVOTIONAL DIMENSION

- o **Bhajans (Sankirtan)**
- o **Vedic** chants and **stotrams**
- o Meditation & Silent sitting
- o **Suprabhatam** (prayer at dawn)
- o Assembly (college prayer)
- o **Brahmarpanam** (food prayer)
- o **Kshama Prarthana** (night prayer)

The activities of the devotional dimension enable a student to connect to his/her Divine inner Self. This inner connection opens the heart and brings forth the feeling of love, compassion and empathy for fellow human beings.

CULTURAL DIMENSION

- o Celebration of festivals:
 - Eid-al-Fitr, Independence Day,
 - Sri Krishna Janamashtami (cow procession), Ganesh Chaturthi,
 - Ganesh Immersion, Christmas
 - Ugadi, Sri Ramanavami, etc.
- o Brass Band
- o Nadaswaram & Panchavadyam ensemble
- o Annual Sports & Cultural Meet
- o Performing Arts: Music programmes,
- o Drama & Dance
- o Fine Arts: Rangoli, Card making,
- o Photography, Altar making
- o Public Speaking
- o Debates and Elocution

From the performing arts to public speaking to the fine arts, the cultural dimension is designed to give students wide opportunities to find an avenue to their individual artistic expression.

The university makes every effort to provide the best possible resources—both material and human—so that students excel at their chosen activity.

Festivals of major world religions are celebrated, reinforcing the unity among all faiths. Every student is involved in one way or another in the celebration of these festivals.

PHYSICAL DIMENSION

- o Sports
- o Games
- o Jogging
- o Exercises and Yogasanas
- o Annual Sports & Cultural Meet

Sports and games are a part of the daily routine of all students. From yoga classes to fitness training, from team sports to individual sports, students are encouraged to overcome their limitations and excel in these activities.

The university has excellent sports facilities.

SERVICE DIMENSION

- o Self-Reliance departments:
 - Electricals, Plumbing (water supply),
 - Audiovisual, General store, Dispensary
 - Dietary services, Hostel mess, Arts & Crafts, costumes & props, etc.



- o Community living
- o Social Work
- o Voluntary work
- o Grama Seva (Annual Village Service)
- o Prasadam Distribution

The philosophy of service at SSSIHL is based on the concept that divinity pervades all of humanity, and hence when you serve others, you are serving the Divine. Students learn to serve without expecting anything in return, other than the deep inner satisfaction of serving others.

The compulsory residential system, where students live in dormitory-styled accommodation with other students from totally different backgrounds (for a minimum of two years and up to five or more years), provides an excellent foundation for the service dimension.

INTELLECTUAL DIMENSION

Apart from academics and research, the activities in this dimension include:

Awareness Courses

These mandatory courses are designed to cultivate a broad view of the human condition in students. The course content (e.g. the Unity of Religions and Faiths, Study of the Indian Epics, etc.) helps trigger self-reflection and enquiry and sensitises students to the concerns of society, and gets them to think about practical solutions to these problems.

Thursday Moral Class

At each campus, Thursday mornings begin with an hour of inspiring and ennobling talks by speakers focusing on their personal spiritual experiences, messages from sacred scriptures and other elevated and socially relevant themes. It is also used to highlight students' talents in music, dramatics, elocution, debates, quizzes, etc.

In 2016/17, topics included: Eternal Values and Sanskrit Language, *Yogaha Karmasu Kowshalam*, *Ramo Vighrahaan Dharmah*, Science & Technology for Especially abled persons, etc.

Prayer Talks

Every morning before classes commence at the college, all students and teachers gather for the morning assembly. Prayers/ *veda* chanting/*bhajans* and a few minutes of silent sitting are sometimes followed by a talk by students, faculty members or invited guests on topics related to morals and values.

In 2016/17, topics included: A Gift for Life, use it or Lose it, Faith, Clarity, Fear - Challenge it, Deserve before Desire, God's Delays are not His Denials, Adversity, Connection with Swami, Parents and Acceptance, *Bhagawata Saptaha*, Dreams, etc.



COMMUNITY SERVICE

ON THEIR OWN VOLITION, STUDENTS AND TEACHERS OF THE UNIVERSITY WORK WITH LOCAL COMMUNITIES AROUND THE CAMPUSES THROUGHOUT THE YEAR. MANY OF THESE SERVICE ACTIVITIES ARE INSPIRED BY STUDENTS THEMSELVES. THEY ARE A REFLECTION OF THE IMPACT OF THE UNIQUE EDUCATION THEY RECEIVE HERE. EXAMPLES OF THESE FROM 2016/17 INCLUDE:

NARAYANA SEVA

Anantapur Campus, every month

As per the tradition of the campus for the past several years, regular Narayana Seva was undertaken on a monthly basis during the academic year 2016/17.

The activity includes the preparation of 25 Kg. of Pulihora rice by the campus workers. Once cooked, students then pack the Pulihora into packets of around 250-300 grams each. An average of 270-300 packets are prepared each Narayana Seva. These are arranged in crates which are then loaded onto the hostel auto rickshaw.

Usually, four students accompanied by a faculty member or a doctoral research scholar distribute the rice in the slums around town. This allows students to experience first hand, the conditions of people with marginal resources and fills their hearts with an urge to continue to do such work to derive selfless joy, which seva alone can grant them.

LEPER COLONY ADOPTION

Anantapur Campus, 1986 to date

The campus warden, with the help of students and alumni, has adopted a leper colony since 1986 with a long-term objective of making the families as self-sufficient as possible.

Love Stream has helped transform the lives of twenty-five socially marginalized families through dedicated love and care. The families are financially self-sufficient through a series of interventions including raising capital for water pumps, growing trees, selling their fruits, etc.

This year, the talented and skilled children of the colony made various handicrafts like birthday and new years cards, bookmarks, *rakhis*, pouches and friendship bands during their free time. They are then sold

to other students who wait to buy them as they are cheaper, available at hand and prepared by their friends to benefit the poor lepers and are beautiful.

CELEBRATING CHRISTMAS WITH VILLAGE CHILDREN

Muddenahalli Campus, Christmas 2016

The students of the campus went as Good Samaritans on Christmas morning and handed over little gifts to the tiny tots at a nearby Muddenahalli village. This happened towards the end of the candle light *nagar sankeertan* that wound its way from the campus into the village. Seeing the joy of pure innocence with large on the faces of the children was a happy experience for all the students.

OLD AGE HOME VISIT

Muddenahalli Campus, April 2016

Like the past few years, the students of all classes along with staff, visited the Sai Dwarakamayee Vriddhashrama, an old age home housing about forty residents—old men and women—at Sultanpet, Nandi village, about four kilometres from Muddenahalli.

The visits were scheduled once a month. Students understood the importance of respecting elders and giving love and care to parents. They conducted bhajans and *vedam* chanting before commencing their interaction with the residents.



SAI BANDHAN, A BOND OF LOVE

Brindavan Campus, April-May 2017

The Sai Bandhan domiciliary outreach program is a collaboration between students of Brindavan Campus, SSSIHL and Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Whitefield, Bangalore.

During their summer vacation, students voluntarily set out to meet patients who had been previously treated at SSSIHMS, Whitefield. The objective was to assure the patients and their families of Sai's continued concern for their well-being and get feedback about their experience at SSSIHMS.

In 2017, the third year of the program, as many as 86 students from 64 districts volunteered to visit 200-odd patients across fifteen states and a union territory. The patients visited belonged to different sections of society. They were of diverse caste, creed, religion, age groups and economic strata.

All patient information was provided by SSSIHMS and the logistical support to meet them was extended by members of Sri Sathya Sai Seva organisation in the state concerned.

Students were able to experience, first hand, the love that the patients and their families have for Bhagawan Baba. From a bleak future, Bhaga-

wan had turned around their lives and made them look forward to a happy and healthy future.

The Sai Bandhan program reminded students that the world is one big family and instilled in them the feeling of brotherhood of man and the fatherhood of God. This message was brought home movingly to one student when the family of a patient he had visited during the holidays came all the way to Brindavan to meet him in the hostel in the month of June 2017. Truly, his holidays were holy days!

THOLUVABETTA VILLAGE SERVICE

Brindavan Campus, 16-17 April 2017

A group of thirty students of the I and II year undergraduate and I year postgraduate programmes took up this service activity.

Several activities were undertaken. For example, Sai Deep, a device using a soda bottle and chlorinated water sealed in it to refract sunlight into the dark rooms of the tiled houses of the villagers. These solar water bulbs can transmit enough light as a 40- to 60-watt incandescent bulb to the interior of village homes and can last up to five years.

Other seva activities included giving away health kits, daily essentials and stationery for the school children. In addition to this, students painted their roofs and the school building.



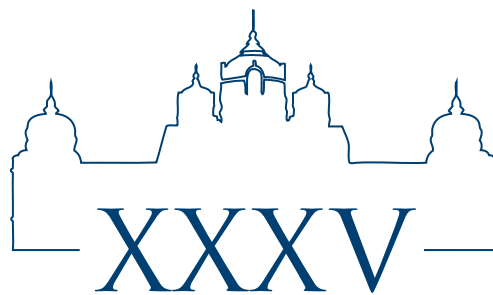
THE END OF EDUCATION IS CHARACTER
Sri Sathya Sai Baba



ssihl.edu.in



Annual Report 2016



Students! Spiritual education is not a distinct and separate discipline; it is part and parcel of all types and levels of education. In fact, it is the very foundation on which a lasting edifice can be built. Secular and spiritual educations are like the two halves in the seeds of pulses; the germ that sprouts is in between; it is fed by both.

Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL



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FOREWORD

As the Vice-Chancellor of this hallowed university, I have had the privilege of facilitating Sri Sathya Sai Institute of Higher Learning in working towards accomplishing the goals outlined in our yearly academic plan for 2015/16, in keeping with the university's vision.

As envisaged by Bhagawan Sri Sathya Sai Baba, Sri Sathya Sai Institute of Higher Learning continues to excel in its commitment to teaching, learning and research as well as moulding young and vibrant minds along the spiritual path. The prevailing student diversity at the university demonstrates our steadfast commitment to providing admissions to all sections of society.

Our low acceptance rates in the past few years—only one in five qualified applicants on an average are admitted—has led to a steady growth in the academic environment of the university. We have also recruited twelve bright faculty members last year, in line with the commitment to maintain the student-teacher ratio at 8:1, one of the best in our country. This fosters an ideal environment for a distinctive kind of student-teacher interaction that allows students to make the best of this unique system of integral education at the university.

Over a hundred visiting faculty and guest lecturers from top-notch universities and organizations, both from within our country and overseas, took pride in being associated with Sri Sathya Sai Institute of Higher Learning.

The university conducted several

national and international workshops and conferences during the academic year in order to provide an opportunity to our students to engage with leading minds and gain an exposure to front-line concepts in their respective academic and research areas.

The effect of this is strongly reflected in the overall academic performance of our students. Over a fifth of all final year postgraduate students qualified in national examinations such as the GATE/JEST and CSIR-UGC NET.

In continuation to the process of consolidation of academic programmes, the Department of Home Science has been rechristened as Department of Food & Nutritional Sciences. Subsequently, Bachelors and Masters programmes in Food & Nutritional Sciences have been introduced in June 2016.

Research at the university continues to touch greater milestones without sacrificing the focus on societal benefit. For instance, our faculty are involved in the development of sensors for water monitoring in and around Anantapur district. Successful performance of autologous chondrocyte implantation in a patient with osteochondral defect in collaboration with Sri Sathya Sai Institute of Higher Medical Sciences is a noteworthy achievement by our faculty. Besides meeting rural needs, our faculty are also involved in the design and fabrication of high end equipment such as a multimodal microscope and resonant optical gyroscope for a variety of applications.

In addition, 230 research papers were published during the last academic year, many of them in leading, peer-reviewed high impact journals. For a total faculty strength of 162, this number is indeed admirable.

Providing the best possible facilities for our students, scholars and faculty to further excel in their respective areas of interest has always been a priority for the university administration and Sri Sathya Sai Central Trust.

The ₹12 Crore investment on infrastructure and equipment during 2015/16 went towards establishing state-of-the-art research laboratories that house the latest equipment. The new and existing buildings were also equipped with fast computers and broadband connectivity to cater to the needs of all faculty and students.

I am delighted to acclaim the prodigious accomplishments of our university through the committed and passionate personnel who each day make SSSIHL's vision a reality.

With the active and full support of the Sri Sathya Sai Central Trust and the Love and Blessings of our Beloved Bhagawan, we pray that this modern *Gurukula* continues to grow in the direction that He intended.



Prof. K B R Varma
Vice-Chancellor

INTRODUCTION TO SSSIHL

Sri Sathya Sai Institute of Higher Learning (SSSIHL), Prasanthi Nilayam, Andhra Pradesh, India, is a visible manifestation of Bhagawan Sri Sathya Sai Baba's vision of education for human transformation.

The university hosts over 1300 undergraduate, postgraduate and professional programme students across four campuses:

For women students:

- Anantapur Campus at Anantapur, Andhra Pradesh

For men students:

- Prasanthi Nilayam Campus, at Puttaparthi, Andhra Pradesh
- Brindavan Campus, at Whitefield, Bangalore, Karnataka
- Muddenahalli Campus at Muddenahalli, near Chickaballapur, Karnataka

The university has a merit-based open admissions policy for all, irrespective of income, religion or region.

SSSIHL provides free education to students in all programmes of study. This includes waiver of all fees- tuition, examinations, laboratory, library, sports and medical.

Programmes offered include undergraduate, postgraduate, professional and research.

A Modern Gurukula

Sri Sathya Sai Institute of Higher Learning was founded to inculcate ethical and moral values in students. These ethics and morals form the undercurrent of every subject taught at the university. Here, the development of a student's character is just as important as imparting knowledge.

This holistic development of students can only be possible in an environment that encourages the development of the student's mind, body and spirit.

To facilitate this, the university has a compulsory residential policy for all students. The environment is similar to the ancient Indian *gurukula* system of education, in a modern context. Teachers and students live and grow together in an atmosphere of mutual trust and unity.

Most students typically spend between two to five years pursuing an education at SSSIHL. As a result, what differentiates them from graduates of other universities is the transformation of their hearts, not just the training of their minds.

Residential Character

The compulsory residential system is an essential ingredient for the university's Values-based Integral Education to achieve its objective of transformation. This is where the concept of the modern *gurukula* really comes to the fore. In fact, Bhagawan Baba Himself designed the entire system and its activities, right down to the daily routine of students!

Residential Teachers

Residential teachers voluntarily make sacrifices stay with students at the hostel. They choose this responsibility in addition to their academic and administrative workload. Like students, they also share rooms with other teachers (typically two teachers share a room).

They perform three fundamental tasks:

- Ensure the all-round welfare of students
- Discharge specific duties for the upkeep of the hostel daily routine and general discipline
- Facilitate the smooth functioning of the hostel Self Reliance departments

This institution is the Ganga of *seva*. The teachers and students of this institution have to live harmoniously and cordially, sharing and caring in loving co-operation. I am confident you will act thus and I bless you for success in this endeavour.

**Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL**

Values-based Integral Education

In the words of Bhagawan Sri Sathya Sai Baba, Revered Founder Chancellor, SSSIHL:

I have established these institutions to impart spiritual education as a main component and worldly education as a secondary one. Education should enable one to cultivate good qualities, character and devotion. The teaching of the university curricula is only the means employed for the end, namely, spiritual uplift, self-discovery and social service through love and detachment.

Bhagawan Baba has designed the system of Sri Sathya Sai Values-based Integral Education in such a manner that between the time an 18-year old student joins the university and when she or he graduates (at the age of 21 or 23) there is a deep *inner* transformation that takes place. This concept is very unique at the university level.

The Process

The diagram on the right forms the basis of the system of Values-based Integral Education at SSSIHL.

The base is the concept of a modern *gurukula* that sustains all relationships and activities at SSSIHL. It is responsible for creating and sustaining the congenial environment necessary for the teacher-student interaction to grow and develop.

Adherence to discipline and appropriate behaviour are the two important aspects that encompass all interactions.

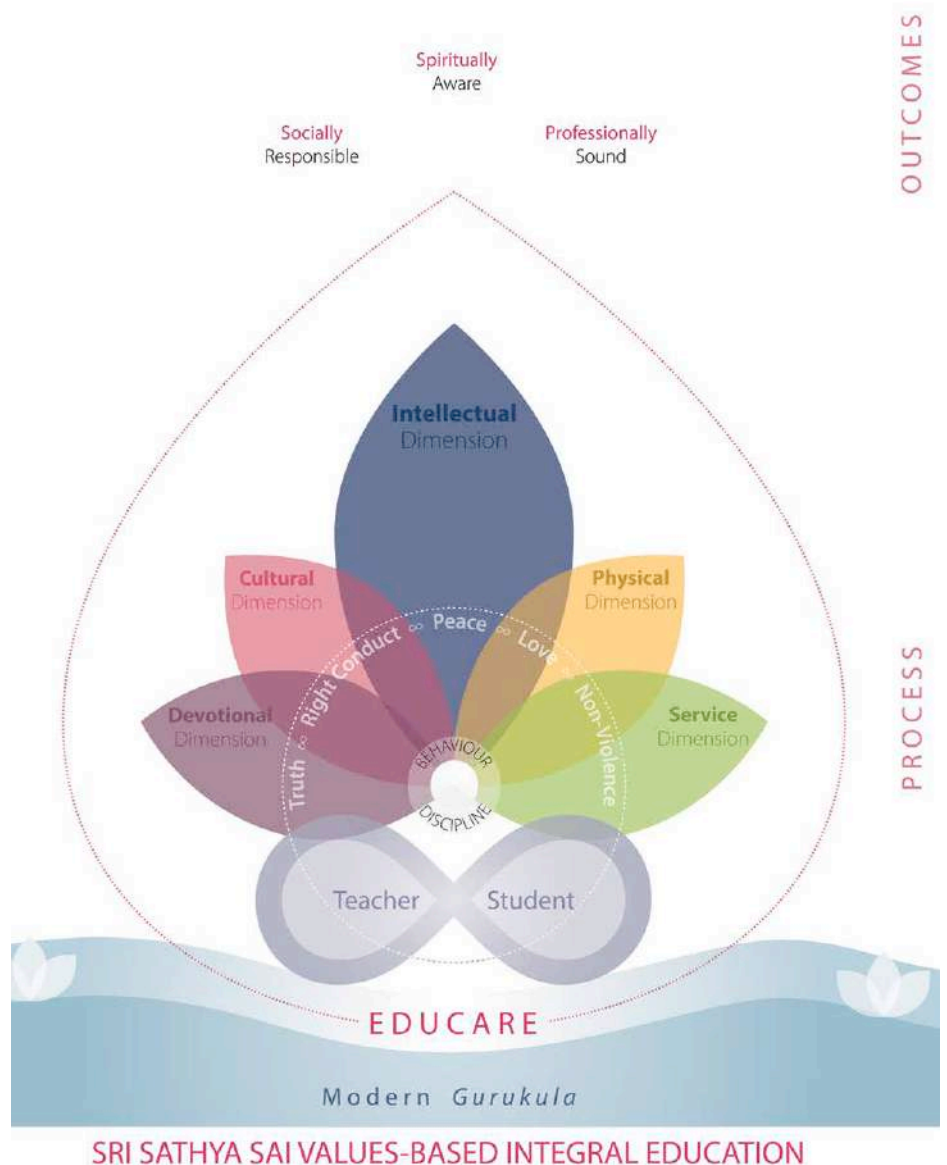
The five human values of Truth, Right Conduct, Peace, Love and Non-violence

form the undercurrent of all the dimensions of integral education. These dimensions are: Intellectual, Physical, Cultural, Devotional and Service. The key activities for each of these dimensions form the basis of most of the time that students spend at SSSIHL.

The outcome of the system of Values-based Integral Education at SSSIHL is threefold. It prepares all graduates to be:

- Spiritually aware
- Socially responsible and
- Professionally sound

For further information, visit sssihl.edu.in



UNIVERSITY GOVERNANCE

Sri Sathya Sai Institute of Higher Learning (Deemed to be University) is an independent and self-governing institution. It was established by the Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by the Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts.

The Trust

The Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust) was founded to foster the culture of India and promote in the students and teachers an awareness and understanding of the social needs of the country; with special focus to the needs of the rural population. It is aimed to inculcate in students a world perspective- an international outlook imbuing human values along with a spiritual and secular education.

Its members for 2015/16 were:

- Sri V Srinivasan, All India President, SSS Seva Organisation
- Justice A P Misra, Former Judge, Supreme Court of India
- Prof. S P Thyagarajan, Former Vice-Chancellor, University of Madras
- Sri S S Naganand, Member, Sri Sathya Sai Central Trust
- Sri R J Rathnakar, Member, Sri Sathya Sai Central Trust
- Sri T K K Bhagwath, Member, Sri Sathya Sai Central Trust
- Sri K Chakravarthi, Member-Secretary, Sri Sathya Sai Central Trust

The Principal Bodies

The administrative and academic functioning of the university is carried out by the following two principal bodies:

1. The Board of Management
2. The Academic Council

The Board of Management

The Board of Management is the principal authority of the university, responsible for its general management and administration.

Its members for 2015/16 were:

- Prof. K B R Varma, Vice-Chancellor, SSSIHL (Chairman)
- Sri S S Naganand, Member, Sri Sathya Sai Central Trust Nominee, SSSIHL (Public Charitable Trust)
- Prof. K S Rangappa, Vice-Chancellor, University of Mysore, Karnataka
- Prof. Sujata Ramadorai, Professor of Mathematics, Tata Institute of Fundamental Research, Mumbai
- Prof. D Swaminadhan, Chairman, Dr. D Swaminadhan Research Foundation (DSRF)
- Dr. Mohan Kanda, Former Chief Secretary, Govt. of Andhra Pradesh (Nominee, MHRD, Govt. of India)
- Prof. Radhakrishnan Nair, Dean, Faculty of Management & Commerce, SSSIHL
- Prof. (Miss) Madhu Kapani, Dean, Faculty of Economics & Humanities, SSSIHL
- Prof. (Miss) Rajeshwari C Patel, Professor, Dept. of English Language & Literature, SSSIHL
- Prof. (Miss) Ch Radhakumari, Professor, Dept. of Management & Commerce, SSSIHL
- Dr. Naren Ramji, Registrar, SSSIHL (Secretary)

In 2015/16, The Board of Management met on 18 July 2015, 17 September 2015, 21 November 2015 and 20 February 2016.

The Academic Council

The Academic Council is the principal academic body of the university. It has general control over and is responsible for the maintenance of standards of teaching, research and training, approval of syllabus, coordination of research activities, and examinations and tests within the university.

Its external members for 2015/16 were:

- Prof. Ajay K Sood, Dept. of Physics, Indian Institute of Science, Bangalore
- Prof. Ajaib Singh Brar, Vice-Chancellor, Guru Nanak Dev University, Amritsar, Punjab
- Prof. M H Bala Subrahmanya, Chairman & Professor, Management Studies, Indian Institute of Science, Bangalore
- Dr. K R Suresh Nair, Former Director, Chief Technology Officer, NeST Group, Kochi
- Dr. V Bhujanga Rao, Former Distinguished Scientist & Director General, Naval Systems and Materials (NS & M), Defence Research and Development Organisation (DRDO), New Delhi
- Sri Brij Mohan, Scientist 'G', Member Secretary, National Research Board (NRB), New Delhi

In 2015/16, The Academic Council met on 23 October 2015.

Important Committees

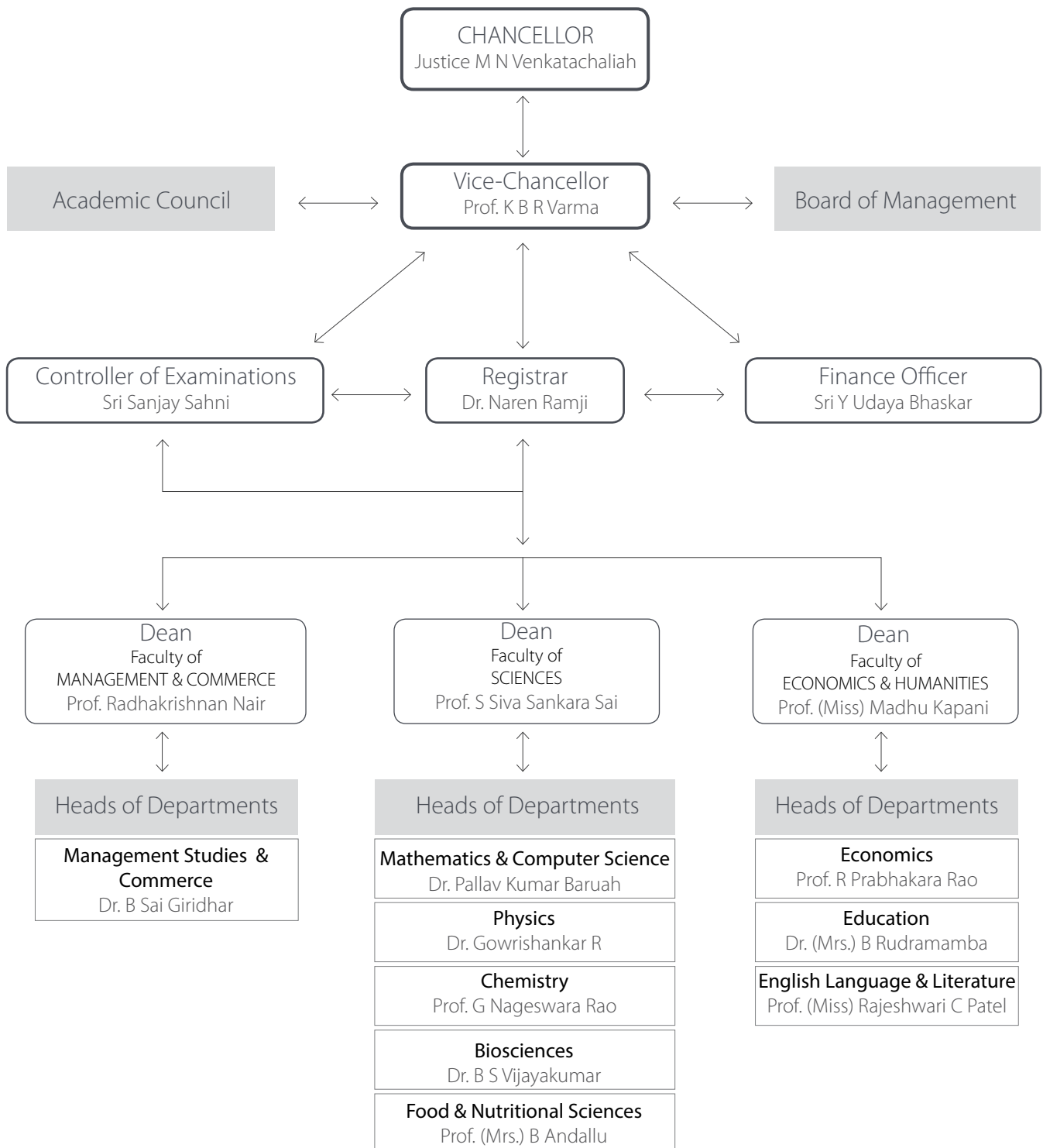
In addition to the principal bodies that govern the university, there are various committees that have been set up to ensure that academics and administration are in accordance with the high standards that SSSIHL has striven to consistently maintain. Some of these committees include:

- Boards of Studies
- Research Conferment Cell
- Finance Committee
- Campus-Hostel Management Committee
- Internal Quality Assurance Cell
- Planning and Monitoring Board
- Research Advisory Board
- Institutional Ethics Committee
- Institutional Biosafety Committee
- Building and Works Committee

For further information, visit sssihl.edu.in

UNIVERSITY STRUCTURE

REVERED FOUNDER CHANCELLOR
BHAGAWAN SRI SATHYA SAI BABA



Sri Sathya Sai Institute of Higher Learning (Deemed to be University) has been established by Sri Sathya Sai Institute of Higher Learning (Public Charitable Trust), which in turn has been established by Sri Sathya Sai Central Trust. Bhagawan Sri Sathya Sai Baba is the founder of these Trusts.

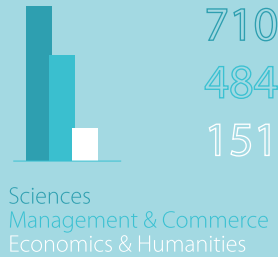


Student Profile 2015/16

1345



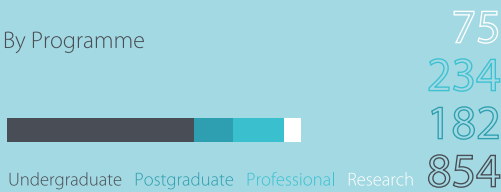
ATP	465
PSN	432
BRN	305
MDH	143



By Campus

By Faculty

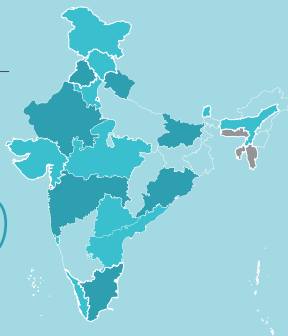
By Programme



Student Diversity

26/29

states of India



Exams-Pass-Rates 2015/16

93%

Undergraduate Programmes

95%

Postgraduate & Professional Programmes

External Exams 2015/16

29%

GATE/JEST 2014/15

8%

CSIR-UGC/NET 2014/15

This data pertains to final year postgraduate students who are eligible to write these exams

GATE: Graduate Aptitude Test in Engineering
JEST: Joint Entrance Screening Test

CSIR: Council of Scientific & Industrial Research
UGC: University Grants Commission
NET: National Eligibility Test

Graduates 2015/16

469



24

Gold Medallists



7

PhD

In 2015/16, academic performance at the university continued to set the bar higher. A record number of final year postgraduate students passed National Examinations such as the GATE/JEST and CSIR-UGC NET. Overall examinations pass rates at the university continue to be upwards of 94% across all programmes and departments.

This reaffirms the fact that the model of Sri Sathya Sai Values-based Integral Education—where students spend 60% of their time on academics and 40% on other areas—successfully moulds students in a wholesome manner, in line with the vision of our Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba.

Expenditure on Equipment & Infrastructure 2015/16

₹ 11.99 CR.



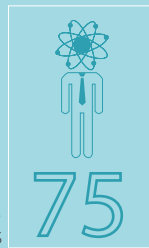
Admissions 2015/16

517



Research and Teaching Grants 2015/16

₹ 5.47 CR.



Research Scholars

Undergraduate Acceptance Rates 2015/16

18%



Student Computer Ratio 2015/16

2.4 : 1



Postgraduate & Professional Acceptance Rates 2015/16

23%



The university continues to invest in equipment and infrastructure across the campuses. A new hostel building at the Muddenahalli Campus was inaugurated on 2 April 2016. The hostel's thirty-seven rooms will accommodate 300-plus students, over twice the current strength.

The new building for the Sri Sathya Sai Advanced Centre for Research and Development is also nearing completion. It will house the latest equipment to facilitate need-based research in the areas of Materials Science, Physics, Chemistry, Biosciences, Food Sciences, Mathematics, Management and Humanities. It will be operational in early 2017.

Our merit-based open admissions policy and low acceptance rates are a reflection of how the carefully chosen students excel in both academics and co-curricular areas and make the most of the atmosphere and facilities here.



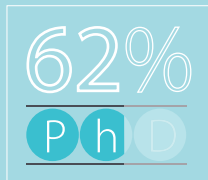
Staff Profile 2015/16

2.4 : 1
academic : administrative



162 Teacher Designations

- 22 Professor
- 34 Associate Professor
- 90 Asst. Professor
- 16 Others



106

Visiting Faculty & Guest Lecturers

Residential Teachers 2015/16

1 in 4

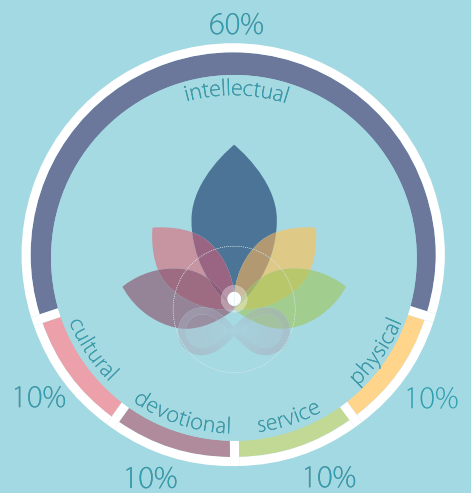


Student Teacher Ratio 2015/16

8 : 1



Annual Time spent by Students on Integral Education Dimensions



The model of integral education at SSSIHL necessitates a favourable student-teacher ratio and a host of residential teachers who are willing to make sacrifices by living with the students full-time in the hostel. This fosters the ideal environment for the kind of student-teacher interaction that is the basis of a modern *Gurukula*.

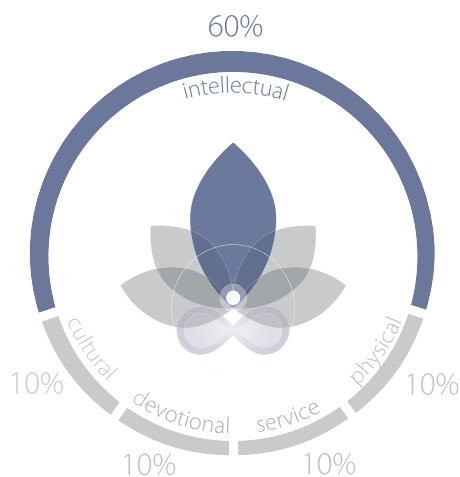
Students have access to brilliant teachers who are both highly qualified (over 60% of all teachers have a Ph.D.) and are willing to go the extra mile to solve students' problems, academically and otherwise. The exposure to scores of visiting faculty and guest lecturers (and their wide experiences), along with an excellent student-teacher ratio that allows for greater individual input, facilitates a high quality of education at SSSIHL for all students.

In addition, students were exposed to over a hundred visiting faculty and guest lecturers from top institutions and organizations in India and abroad.



ACADEMICS 2015/16

SSSIHL is committed to a unique system of education that combines human values with academic excellence.



DIMENSIONS OF SRI SATHYA SAI
VALUES-BASED INTEGRAL EDUCATION

ACADEMIC WORKSHOPS & CONFERENCES

To facilitate wider exposure to the developments in academia and industry and enable the exchange of ideas, the university conducted **thirteen national and international workshops and conferences** during the academic year 2015/16.

International Workshop on Differential Geometry - Foundations & Developments

Dept. of Mathematics & Computer Science, 10-11 Jul 2015

The workshop shed light on the foundations, current developments and future prospects in various branches of differential geometry and its applications in other branches of mathematics and physics through a series of expository and explanatory lectures delivered by renowned academicians.

External experts and guests from: Ramanujan Math Society, Karnatak University, University of New Haven, IIT Kanpur, TIFR-CAM.

Recent Trends in Networking Technologies

Dept. of Physics, 11 Jul 2015

This one-day workshop highlighted the modern trends in networking technologies by experts from well-known optical networking companies. These included the augmentation of the capacity of fiber optic networks, next

generation data center Interconnects, developments in various layers optimization and multi-layer restoration, etc.

External experts and guests from: IIT Madras, Infinera, Tejas Networks, CISCO.

Indian Economy: Emerging Trends & Challenges

Dept. of Economics, 10 Aug 2015

The workshop focused on four important sectors of the Indian economy: agriculture, manufacturing, external sector and the fiscal policy. Talks included Managing India's External Sector, Productivity Growth of Indian Manufacturing Sector in the Post Liberalization Era, Fiscal challenges in India and Indian Economic Growth: Inclusiveness and Food Security.

External experts and guests from: GITAM University, Jadavapur University, Institute for Social and Economic Change, National Institute of Rural Development.

Symposium on Financial Inclusion

Dept. of Management & Commerce, 22 Aug 2015

The symposium gave students an opportunity to interact and learn from professionals from industry and regulatory bodies in Finance. It was divided into three round table sessions that discussed business models through which

financial products and services could be provided to the disadvantaged and needy, as well as issues involving the design and delivery of appropriate products for financial inclusion and its appropriate regulation and literacy.

External experts and guests from: Centre for Investment Education and Learning, Birla Sun Life Insurance, Kotak Mahindra Bank, Samunnati, Asirvad Microfinance, Atyati Technologies, Reserve Bank of India, Spark Capital Advisors (India) Private Ltd.

Light Matters

Dept. of Physics, 26-27 Oct 2015

Celebrating the International Year of Light' (IYL2015) recognized by the UN, the workshop focused on the recent advances in the field of photonic applications with scientists, researchers and engineers from across the country working in photonics and materials for photonic applications disseminate their latest results, allowing a cross-disciplinary exchange of knowledge and a showcase of recent inventions and innovations.

External experts and guests from: LEOS (ISRO), Univ. of Hyderabad, IIT Madras, NITMS, Research Centre Imarat, RRI, Instapower Ltd., Laser Spectra Services and others



Parabolic Partial Differential Equations and Applications to Image Processing

Dept. of Mathematics & Computer Science, 26-29 Oct 2015

The workshop focused on very fundamental issues of theoretical interest regarding parabolic equations and discussed its utility to develop models in different fields of applications. The focus of the workshop was: Classical theory of Parabolic Equations, Sobolev spaces: To the extent required to support error analysis and Applications to Image processing: Modeling, simulation and analysis.

External experts and guests from:
TIFR CAM, IITK, IIT Kanpur.

Functional Materials and their Applications in Devices

Dept. of Chemistry, 26-28 Nov 2015

This elaborate conference helped students understand integrated approaches to solving scientific problems with practical insights, helping them develop higher qualities toward research. Topics discussed included Quantum Dots for electronic applications, Organic materials for electronic devices, multi electron system, Solar Energy Harvesting, Second harmonic generation, etc.

External experts and guests from:
Several professionals from the Indian Institute of Science, Bangalore.

The 60th DAE-BRNS Symposium on Nuclear Physics

Dept. of Physics, 7-11 Dec 2015

This annual event has been instrumental in setting up a tradition for research in nuclear physics (in particular) and basic sciences in general in our country. The aim of this series of symposia has been to provide a scientific platform to the nuclear physics community to present their research work and to interact with the researchers in this area.

This year, there was a very enthusiastic response in terms of the number of papers (over 500 papers and 20 theses) submitted for presentation at the symposium. In addition there were 26 invited talks delivered by distinguished speakers from India and abroad. An orientation program on Error Analysis of Experimental Data in Nuclear Physics was also arranged.

External experts and guests from:
BARC, VECC Kolkata, SINP, IUAC, TIFR, and several guest from over 100 institutions.

International Symposium on Computational Science

Dept. of Mathematics & Computer Science, 12-15 Dec 2015

The symposium brought together interested individuals, active researchers, patrons and practitioners together on one platform to deliberate on the recent happenings in Computational Science

and to dwell on some of the topics and practices. It also included a few tutorials to impart knowledge, experience and exposure to the participants on some of the important areas that influence computational science.

External experts and guests from:
Universities of Melbourne, Iowa and Ohio State, IIT Kanpur, IISc, IIT Bombay and others.

Integrated Chemie CONFERENCE (ICCON 2016) on Frontiers in Applied Chemistry – From Molecules to Materials

Dept. of Chemistry, 12-13 Feb 2015

Sponsored by Tata Chemicals Limited, the conference included several sessions in areas including Lanthanide complexes, Halotolerant organisms, Biopolymeric Materials for a Sustainable and Greener Future, Hydrogenation of Inorganic Carbonates, Intellectual Property, Science behind a Siddha herbometallic drug, Contribution of post-harvest agricultural paddy residue fires in the NW Indo-Gangetic Plain to ambient carcinogenic benzenoids, toxic isocyanic acid and carbon monoxide, Porous Carbon materials for Energy Storage Applications, and several more.

External experts and guests from:
Tata Chemicals IISc, SABIC, ARCI, CSIR National Chemical Laboratory.



Leading with Values - Values and Financial Decisions & Strategies

Dept. of Management & Commerce,
13 Feb 2016

An innovative workshop that brought professionals from various walks of life discussing the impact of ethics (and lack thereof) in the world of business and society at large. Through macro-level references such as the Volkswagens emission manipulation scandal and core malpractices at the biggest financial institutions that led to the global economic crisis of 2008 to inspiring examples of the opposite end of the spectrum, the workshop threw light on the fact that through values and ethics, true leadership and positive change can occur.

External experts and guests from:
UBS AG, Cognizant Technologies, Sundaram Finance Pvt. Ltd., Copenhagen Business School

Emerging Trends in Multidisciplinary Approaches to Oncology

Dept. of Chemistry, 27 Feb 2016

The workshop discussed the status of cancer in India and the world, and supplemented the facts with data obtained from scientific literature in the field of Oncology. Topics such as Drug resistance mechanisms in Cancer, Immuno-oncology, Design of small

molecules as inhibitors of mPGES-1 for treating inflammation and cancer and Role of Kinase inhibitors in Cancer Treatment were discussed.

External experts and guests from:
IIT-Madras, NIPER, Aurigene Discovery Technologies, Biocon BMS R&D Center, Bristol-Myers Squibb, COPER.

Challenges in Human Resource Management

Dept. of Management & Commerce,
27 Feb 2016

The workshop was structured into two panel discussions each involving participation of industry experts: Engagement Levels in Organisations – How Leadership based on Ethos and Beliefs can promote the Engagement in this age of Globalization, and People Issue to be focused on in the Make in India era with emphasis on the Generation Y workforce.

External experts and guests from:
Cognizant Technologies, Tata Chemicals, Broward College, Florida, USA, FSSC Scope International.

NEW PROGRAMMES

A consolidation of academic programmes led to the rechristening of the Department of Home Science to Food & Nutritional Sciences in Nov

2015. The department subsequently introduced the B.Sc. and M.Sc. in Food & Nutritional Sciences programmes in June 2016.

NEW FACULTY

Twelve new faculty joined the SSSIHL family in 2015/16, bringing the total number of teaching faculty to 162.

- Sri P Sunil Kumar, Asst. Professor, Dept. of Mathematics & Computer Science
- Dr. (Ms.) P Jyothikumari, Asst. Professor, Dept. of Biosciences
- Dr. (Mrs.) Pallavi C, Asst. Professor, Dept. of Biosciences
- Dr. (Mrs.) Ambati Padmaja, Asst. Professor, Dept. of Food & Nutritional Sciences
- Mrs. M Pushpa, Asst. Professor, Dept. of Management & Commerce
- Sri Dinesh Kumar Choudhury, Asst. Professor, Dept. of Economics
- Dr. Gopakumar K U, Asst. Professor, Dept. of Economics
- Dr. Rajendra Narayan Paramanik, Asst. Professor, Dept. of Economics
- Mrs. B Saisoujanya Kumari, Asst. Professor, Dept. of Education
- Ms. P Padmambika, Asst. Professor, Dept. of Education
- Dr. B Venkata Ramana, Asst. Professor, Dept. of English Language & Literature
- Dr. Srinivas S, Asst. Professor, Dept. of English Language & Literature



STUDENT ACTIVITIES & ACHIEVEMENTS

Projects & Dissertations

Listed below are the key topics/areas of postgraduate and professional programme projects and dissertations chosen by students during the academic year 2015/16.

Mathematics & Computer Science

M.Sc. in Mathematics and M.Tech. in Computer Science

Data Clustering, Object Classification, Facial Expression Recognition using Encoded 3D Kinect Data, Mobile Rx, Video Editor, Diabetic Retinopathy Screening Application, Implementing Web Browser, Study on Compression Algorithms, Lambda Architecture for Big Data, Improving the performance of Heterogeneous Hadoop Cluster, Machine Learning Techniques, Real time Face Detection on Embedded Supercomputer (JetsonK1), Optimization of MPI Communication using Compression on Intel Xeon Phi, Photo Sequencing, Automatic Emotion Recognition from Twitter Data, Image Enhancement using Diffusion Model.

Physics

III B.Sc. (Hons.) in Physics, M.Sc. in Physics, M.Sc. in Materials Science, M.Sc. in Nanoscience and Nanotechnology and M.Tech. in Optoelectronics & Communications and Nuclear Medicine

Interfacing of Safety and Security Sensors to GSM Module, Paper Microfluidics, Study of Chaos in Different Systems, Develop-

ment of CZTS-based Thin Film Solar Cells, Virtual Lab, Great Experiments in Physics, New Light Weight Transport Method for Secured Transmission of Data for Internet of Things (IoT), Agriculture IoT: A step towards Smart Farming, Segmentation Techniques on Scintigraphic Images, Analysis of the Gamma Spectrum of ^{160}Dy from the beta decay of ^{160}Tb , FTIR Spectra: A powerful characterization technique in water treatment, Studies on Heat Transfer in Materials Using COMSOL, Solar Powered Automatic Systems, Interferometry.

Chemistry

M.Sc. in Chemistry and M.Tech. in Analytical Methods & Chemical Instrumentation

Synthesis of high performance biomaterials for prospective pharmaceutical applications, Use of MoS_2 as A Catalyst In Hydrogen Evolution Reaction and Identification of the Catalytic Surface Morphologies, Analytical Studies using Surface Plasmon Coupled Emission.

Biosciences

M.Sc. in Biosciences

Primer screening and optimization for RAPD analysis of clinically isolated extended spectrum β -lactamase producing E.coli, Optimization and application of DREAM assay, Expression of Dense Granule protein GRA8 in Escherichia coli.

Food & Nutritional Sciences

M.Sc. in Food and Nutritional Sciences and M.Sc. in Food Technology

Study on the Antioxidant Properties of Hexane Extract and Meal of Kapok Buds, Nutritional, Phytochemical and Shelf Life

Quality of Roselle (*Hibiscus sabdariffa* L.) Microgreens, Impact of Nutrition Education in the Management of Health on Adolescent Girls, Consumer Education and Shelf Life Evaluation of Selected Millet Based Functional Foods.

Management & Commerce

M.B.A.

Consumer Behaviour in the Use of Streaming Music Services in India, Impact of FDI on Indian Non-life Insurance sector, A Study on Volatility in the Indian Equity Market, A Study of Perception Analysis of SUV Buyers in India, Cost minimisation strategy for an Ice cream unit- Application of Operation Research, Role of Collaboration in Automobile Supply Chain.

Economics

M.A. in Economics

Modelling Value at Risk for Emerging Markets, Analysis of India's Energy Sector, Investment Behaviour of the Private Corporate Sector in India, Forecasting India's Exchange Rates Using Econometric Models and Neural Networks, Energy and Economic Growth: India's Experience, Nexus Between Financial Development and Economic Growth.

English Language & Literature

M.A. in English Language & Literature

19 Jan 1990: The Silent Night of Wails, Quest for Clarity: A Thematic Study of Select Short Stories of Alice Munro, Language and the Media.



Organizational Visits

At the end of each academic year, final year graduating students from various departments go on official visits to reputed organizations to get a feel of how theoretical learning in the classroom translates in the real world. Students are accompanied by a few teachers on these trips.

Physics

I M.Tech. in Optoelectronics & Communications students, Hyderabad and Bangalore, 16-22 Apr 2016. Organizations visited: Labs at University of Hyderabad, Nuclear Fuel Complex, L&T Metro Rail Project, Medha Servo Drives, ARCI - Centre for Laser Processing of Materials, CISCO, SSSIHMS, Tejas Networks Ltd. and LEOS - ISRO.

Management & Commerce

Anantapur Campus: **II M.B.A.** students, Chennai, 16-20 Apr 2016. Organizations visited: Ford India, Symrise, ShriRam City Union Finance, TI Cycles and Sundaram Clayton.

Prasanthi Nilayam Campus: **II M.B.A.** students, Hyderabad, 15-19 Apr 2016. Organizations visited: Pranav Foods, SMS Pharmaceuticals, KSK Mahanandi Power Ventures Ltd., Nuclear Fuel Complex, AGI Glasplac, Medha Servo Drives, CII Green Business Centre and Signode India.

Brindavan Campus: **II M.F.M.** students, Bangalore, 17 Aug and 27 Oct 2015. Organizations visited: TAFE Doddaballapur and Akshaya Patra.

Muddenahalli Campus: **III B.B.M.** students, Prasanthi Nilayam, 16-17 Nov 2016. Organizations visited: SSSIHMS, SSS General Stores, Prasanthi Nilayam.

Food & Nutritional Sciences

II M.Sc. Food Science and Nutrition and II M.Sc. Food Technology students, Bangalore, 26-29 Sep 2015. Organizations visited: SSSIHMS, Bureau Veritas Consumer Products Services, Karnataka Milk Food Complex, Modern Food Industries, UNIBIC Biscuits, Sreenidhi Roller Mills, Bliss Chocolates, Krish

Food Technologies, Vokian Foods, Mysore Fruit Products, Olive Life Sciences.

Other Activities

National Examinations

A high percentage of SSSIHL postgraduate students qualified in national exams such as the GATE/JEST or the CSIR-UGC NET in 2015/16. The list below includes the national rank for each exam.

Ankit Digarsey (Mathematics)
133 (GATE)

P Krishna Prasanth (Computer Science)
302 (GATE)

R Sai Varun (Computer Science)
3812 (GATE)

B Abhinay (Computer Science)
7990 (GATE)

Dittakavi Sainandan (Computer Science)
10160 (GATE)

S Sai Krishna (Computer Science)
10775 (GATE)

B Sai Krishna (Computer Science)
13835 (GATE)

Manuj Subhankar Sahoo (Computer Science) 8436 (GATE)

Nagaraju Dhulipalla (Computer Science) 7990 (GATE)

P Murali Krishna (Computer Science) 8436 (GATE)

Basanta Sharma (Computer Science) 10613 (GATE)

Aditya Sekhar (Physics)
400 (GATE) | 66 (CSIR-UGC - LS)

Jayesh Sadasivan (Physics)
924 (GATE)

Shreesha Rao D S (Physics)
2001 (GATE)

Angu Sewa (Physics)
2247 (GATE)

Amruthavakkula Shiva (Electronics & Communication Engineering)
15343 (GATE)

Tejikiran (Chemistry)
2232 (GATE)

Sai Siva Kumar (Chemistry)
1689 (GATE)

Ashwin Ashok Naik (Biosciences)
2136 (GATE) | 107 (CSIR-JRF)

Balaram Khamari (Biosciences)
303 (GATE)

Divya R (Biosciences)
264 (GATE)

Mangalagouri N Hegde (Biosciences) 1260 (GATE)

Nikhitha Srinivas (Biosciences)
1270 (GATE)

Ananta Rai (Biosciences)
1765 (GATE)

Daksh Seth (Management)
(NET-LS) (CSIR-JRF)

Vijay Sai V (Management)
(NET-LS) (CSIR-JRF)

Kantemneni Suhash (Management)
(NET-LS) (CSIR-JRF)

Sai Satyanarayana V (Management)
(NET-LS)

Karan S Khera (Management)
(NET-LS)

S Anand (Management) (NET-LS)

Krupakar Reddy (Management)
(NET-LS)

M Mallikarjuna (Economics) (JRF)

M P Prashant (Economics) (NET-LS)



FACULTY ACTIVITIES & ACHIEVEMENTS

Mathematics & Computer Science

Prof. V Chandrasekaran

- Invited Talk on Risk Management in Software Development Life Cycle at the Summer Winter School Scheme (SWSS) sponsored by AICTE, Guru Nanak Institutions Technical Campus, Hyderabad, 26 Jun 2015.

Sri Ajith Padyana

- Keynote Speaker at the Workshop on Parallel Computing, National Institute of Technology, Warangal, 11-20 Feb 2016.

Dr. Pallav Kumar Baruah

- Principal Investigator for GPU Research Center, NVIDIA. Awarded to the Dept. of Mathematics & Computer Science, SSSIHL, Jan 2016.
- Participant at the Intel HPC India Round Table, Hilton, Bangalore, 9 Dec 2015.
- Keynote Talk on Accelerated Computing with GPUs, National Workshop on Parallel Computing, The National Institute of Technology (NIT), Warangal, Telangana, 19 Feb 2016.
- Invited Talk on Performance Optimization on Intel® Many Integrated Core (MIC) Architecture and IBM POWER 8, National Workshop on Parallel Computing, The National Institute of Technology (NIT), Warangal, Telangana, 19 Feb 2016.
- Invited Talk on Big Data Computing Platform Hadoop: Performance Improvement, National Workshop on Parallel Computing, The National Institute of Technology (NIT), Warangal, Telangana, 19 Feb 2016.
- General Chair & Program Co-Chair, International Symposium on Computational Science, SSSIHL, 12-15 Dec 2015.
- Reviewer for Journal Applied Mathematics and Computing and Journal of Supercomputing, Springer Publications.
- Member, Technical Programme Committee for several conferences (in 2015/16), including:
 - SAI'16 – International Symposium on Advances in Applied Informatics, ICACCI 2016 – IEEE Fourth International Conference on Advances in Computing, Communications and Informatics, LN-MIIT, Jaipur (21-24 Sep 2016), ICSN-2016, International Conference on Software Networking 2016 (ICSN2016), Jeju Island, South Korea (23-26 May 2016), ICC'2016 – International Conference on Internet of Things and Cloud Computing, University

of Cambridge, UK (22-23 Mar 2016, IC-CMME'15 – International Conference on Computing in Mechanical Engineering, SCMS, Kochi (10-13 Aug 2016).

Dr. N Uday Kiran

- Invited Talk on Symplectic Geometry and its Applications, 81st Annual Conference of Indian Mathematical Society, Visvesvaraya National Institute of Technology (VNIT), Nagpur, 28 Dec 2015.
- Invited talk on Hyperbolic Operators with Non-Lipschitz Coefficients, TIFR Centre for Applicable Mathematics, Bangalore, 5 Apr 2016.
- Talk on Symplectic Geometry and its Applications, International Workshop on Differential Geometry, SSSIHL, 10-11 Jul 2015.

Dr. Krishna Kiran Vamsi Dasu

- Research paper titled Rich Dynamics Exhibited by Predator-Prey Systems with Mutual Interference in The Presence of Inhibitory Effect: A Detailed Theoretical Investigation was selected for ISCA Young Scientists Award Programme, Stream of Mathematical Sciences (Including Statistics), 103rd Indian Science Congress, 3-7 Jan 2016, Mysore.

Physics

Dr. Krishna Chaitanya V

- Invited Lecture at SERC School on Lasers and Nonlinear Optics, Pondicherry University, Puducherry, 22 Mar-11 Apr 2016.

Prof. K Venkataramaniah

- Invited for Collaborative research at Helmholtz zentrum - Gessellschaft fur Schwerionenforschung, Darmstadt, Germany and University of Giessen, Germany on Alexander von Humboldt Stiftung Fellowship, Apr-June 2015.
- Member of the Editorial Board for Journal of Medical Science and Clinical Research.

Sri Muralikrishna Molli

- Chaired a technical session on Applications of Ab-initio simulations, International Conference on Materials for Advanced Technologies (ICMAT) 2015, Singapore, 28 Jun-3 Jul 2015.

Chemistry

Prof. Chelli Janardhana

- Two Invited Lectures on The Applications of Group Theory in Chemistry to post-

graduate Chemistry students, Tellakula Jalayya Polisetty Somasundaram College (TJPS), Guntur, 5 Feb 2016.

- Best Poster award at National Conference on Frontiers in Chemical Sciences and Technologies, National Institute of Technology, Warangal, Telangana, 28-29 Jan 2016.

Dr. A Sunil

- Received the Bharath Vibhuti Award for Excellence in Teaching and Research by the Glorious Organisation for Accelerated to Literacy (GOAL), New Delhi, 15 May 2016.

Biosciences

Dr. B S Vijayakumar

- Invited as a Resource Person and Chair Person to conduct oral/poster presentations, Conference on The Frontiers In Bioprocess Technology, Periyar University, Salem, Tamil Nadu, 28-29 Jan 2016.

Dr. (Ms.) Pratima Tripathi

- Invited Reviewer for the following journals:
 - British Journal of Medicine and Medical Research, International Cardiovascular Forum Journal and Biochemistry and Analytical Biochemistry, OMICS Publications.

Dr. B E Pradeep

- Invited for an oral presentation on Concept to reality – Clinical trial on The role of Autologous Chondrocyte Implantation in Chondral Defects of the Knee Joint, National Seminar on Advances in Polymeric Materials (NSAPM) 2016, Sri Krishnadevaraya University, Anantapur, Andhra Pradesh, 5-6 Feb 2016.
- Reviewer for the Plos One journal

Food & Nutritional Sciences

Prof. (Mrs.) B Andallu

- Guest lecture on Natural remedies for Stress-Induced Diseases (Diabetes, Cancer and Inflammatory Diseases), National Symposium on Prospects and Potentials in Medicinal and Aromatic Plants (in collaboration with Science Tech Foundation, Bangalore), Department of Botany, Government College, Anantapur, Andhra Pradesh, 19 Dec 2015.
- Invited lecture on Phytoceuticals: A New

Era in Ethnopharmacology, 2nd International Conference on Pharmacology and Ethnopharmacology, Chicago, USA, 2-4 May 2016.

Dr. (Miss) N Sridvidya

- o Poster Award for the poster on Nutraceu-tical Potential of Fenugreek Microgreens: Phytochemicals and Antioxidant Activity, National Symposium on Prospects and Potentials in Medicinal and Aromatic Plants, National Symposium on Pros-pects and Potentials in Medicinal and Aromatic Plants (in collaboration with Science Tech Foundation, Bangalore), Department of Botany, Government College, Anantapur, Andhra Pradesh, 19 Dec 2015.
- o External Examiner for practical exami-nation and valuation of Nutrition paper on Bachelor of Naturopathy and Yogic Sciences, Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA), Bangalore, Dec 2015.

Mrs. A Sumana

- o Delivered a series of radio talks on Measures to Overcome Protein Deficien-cy, Overcoming Vitamin 'C' Deficiency, Ways of Preserving Vegetables to Meet the Sudden Requirements During Price Rise and Minimize Loss, All India Radio, Anantapur, Andhra Pradesh, May and Dec 2015.

Management & Commerce

Prof. (Miss) N Niranjana

- o GRABS Lifetime Achievement Award in recognition and appreciation for outstanding Leadership and Dedic-ation to Student Development, GRABS Educational Charitable Trust, Chennai, 1 Nov 2015.

Prof. (Miss) Ch Radhakumari

- o Excellent Paper Award for the Research Paper, A Cost-Effective ERP Formu-lation – An epitome for Small Enterprises, International Conference on Computer Science, Software, Networking and Information Technology (ICCSSNIT-15), Singapore, 7-8 Nov 2015.

Economics

Dr. R Prabhakar Rao

- o Invited talk on Statistical Inference for Social Sciences, ICSSR Course on Research Methodology and Quantitative Techniques in Social Sciences, Christ University, Bangalore, 9 Oct 2015.

Sri G Raghavender Raju

- o Resource Person and Invited Lectures (in Technical Sessions) on Two Variable and Multivariate Regression Models and Qualitative Response Regression Model, national-level workshop on Research Methodology and Data Analysis Using Various Statistical Techniques, Southfield College, Darjeeling, University of North Bengal, 16-22 May 2016.

Education

Prof. (Miss) Madhu Kapani

- o Resource Person, UGC-sponsored National Workshop on Strategies to Enhance Relevance of Higher Education, Innovative Teaching and Learning Meth-ods, IQAC & JKC, Government Degree College, Uravakonda, Andhra Pradesh, 14 Dec 2015.
- o Invited Talk on Research methodology, Research methodology Programme, IASE& Department of Education, Andhra University, Visakhapatnam ICSSR spon-sored), 2-11 May 2016.

Dr. (Mrs.) P Lavanya

- o Invited Talk on Brain Storming: Strategies To Enhance Relevance of Higher Education, UGC-sponsored National Workshop on Strategies to Enhance Relevance of Higher Education, Innovative Teaching and Learning Methods, IQAC & JKC, Government Degree College, Uravakonda, Andhra Pradesh, 14 Dec 2015.

Sub-Departments & Languages

Dr. (Mrs.) M Praphulla

- o Session Chair, International Seminar on Sam-skruthe Bharatheeya Kalayaha Soundaryam Cha Tattvam, Dept. of Sanskrit, Banaras Hindu University, Varanasi, 28 Sep 2015.

Prof. R Gangadhara Sastry

- o Invited Talks at Government Polytechnic, Ve-mpalli, Andhra Pradesh and Sri Ramakrishna Junior College, Cuddapah, Andhra Pradesh, academic year 2015/16.

Dr. (Miss) Kiron Bala Arora

- o Nominated as the Examiner of a thesis pre-sented for Doctorate degree entitled Mukti-bodh Ke Sahitya Ka Vivechnatmak Adhyayan, Fakir Mohan University, Odisha, 16 Oct 2015.
- o Nominated as the Examiner of a thesis pre-sented for Doctorate degree entitled Dalit Ka-haniyon Mein Dalit Vimarsh, Dakshin Bharat Hindi Prachar Sabha, Chennai, Jul 2016.

Dr. N Venkatesha Rao

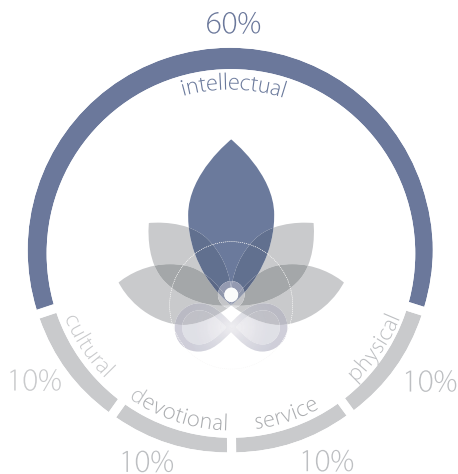
- o Resource Person for the work of Kanakadasa's Haribhakti Sara, Poorna Prajna Samshodha Samsthan, Bangalore, 25-29 Apr 2016.
- o Resource Person for the deliberations of the work, Geetha Bhashya of Madhvacharya (9th Chapter), Poorna Prajna Samshodha Samst-han, Bangalore.





RESEARCH 2015/16

Research at SSSIHL is focused on societal benefit



DIMENSIONS OF SRI SATHYA SAI
VALUES-BASED INTEGRAL EDUCATION

RESEARCH PROJECTS

In the field of science today, there is great emphasis on research and discovery. But unless the results of research are applied in practice, it will be an expensive futility. If all the time is spent on research, when is it to find useful application in practice? Nor is there any sense of discrimination in the promotion of research.

Sri Sathya Sai Baba
Revered Founder Chancellor, SSSIHL

Research Projects

The total value of all research grants during the academic year 2015/16 was ₹5.47 crores. Listed below are the research projects during the year.

Physics

Multi Model Microscope: Field Trails (Phase II)
DST-TSDB

Design and development of optofluidic resonator geometries for biomedical sensing applications
UGC-DAE-CSR

Research Based Reforms in Physics Instruction: Classroom and Laboratory
VGST, DST, Govt. of Karnataka

FIST (Fund for Improvement of Science & Teaching Infrastructure)
DST

Mathematics & Computer Science

Automatic Defense Against Zero Day Polymorphic Worms in Communication Networks using Machine Learning Algorithms
SSSIHL R&D

Near-Real-Time Super Resolution of Aerial Video (Visual and IR) Sequences for Defense Applications
DRDO ER & IP, Delhi, India

Diabetic Retinopathy Screening Tool
Zentron Labs Bangalore

Chemistry

Aerial Regiospecific Functionalisation of Anisotropic Nanoparticles & Implications Towards Generation of Plasmonic Metal Nanoclusters
DST INSPIRE Faculty Award

Develop Interfacial Chemistry Based Structure-Property Relationship in Nanodielectric Composites for Enhanced Energy Storage Applications
DST-SERB

Biosciences

Mechanism of ATP secretion and the role of ATP-activated P2 receptors in the Microglial Inflammatory response: implications for Multiple sclerosis
DBTD

Modulation of TNF Alpha and homocysteine induced inflammation by HDAC and Hsp90 inhibitors
UGC-Start up grant

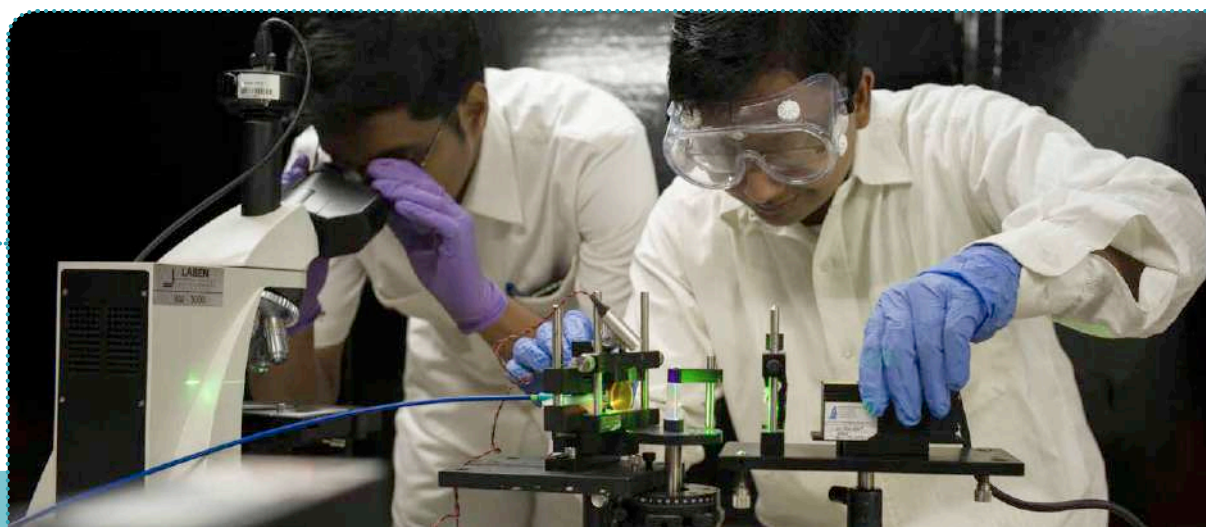
Interdisciplinary Science Colloquium

The colloquium provides an opportunity for doctoral research scholars, teaching faculty and visiting experts to share their research experiences with one another. It breaks down barriers of communication and helps merge traditionally distinct scientific disciplines, thereby creating new opportunities for research.

All the science departments (across campuses) of the university participate, using the videoconference facility.

The topics for 2015/16 were:

- From Ayurveda to predictive analytics in systems biology
- An overview of WEBSFEM in modelling and simulation
- Air pollution control vis a vis sustainable development
- Clinical implications of breathing
- Research work carried out at Japan Institute of Science and Technology (JAIST)
- Applications of modelling in the human circulatory system



RESEARCH HIGHLIGHTS

Given below are highlights of selected research work at SSSIHL in 2015/16.

Sensors for water monitoring

Three of four million inhabitants of the drought-prone area of Rayalaseema, in Anantapur district, Andhra Pradesh depend on ground water as a major source of drinking water. However, this water contains high levels of fluoride and other contaminants.

An independent study was conducted by the Dept. of Chemistry in 2015/16, with an aim to identify villages in need of safe drinking water, with a specific focus on its three mandals- Puttaparthi, Bukkapatnam and Kothacheruvu. It was observed that a significant number of people were affected by bone fluorosis in places where the average concentration of fluoride in drinking water exceeded 5.0 mg/l against the World Health Organization (WHO) standards of 1.0-1.5 mg/l.

As shown below, Geographical Information System (GIS) maps of water hardness, alkalinity, fluoride and nitrate in the three mandals clearly indicates the high levels of these contaminants in these areas.

The department is in the process of designing **sensors for monitoring water quality parameters** in the groundwater of shallow and deep aquifers in and around the three mandals and the identification of appropriate aquifer zones for safe drinking water in addition to development of novel water treatment and water shed management technologies.

Resonant Optical Gyroscope

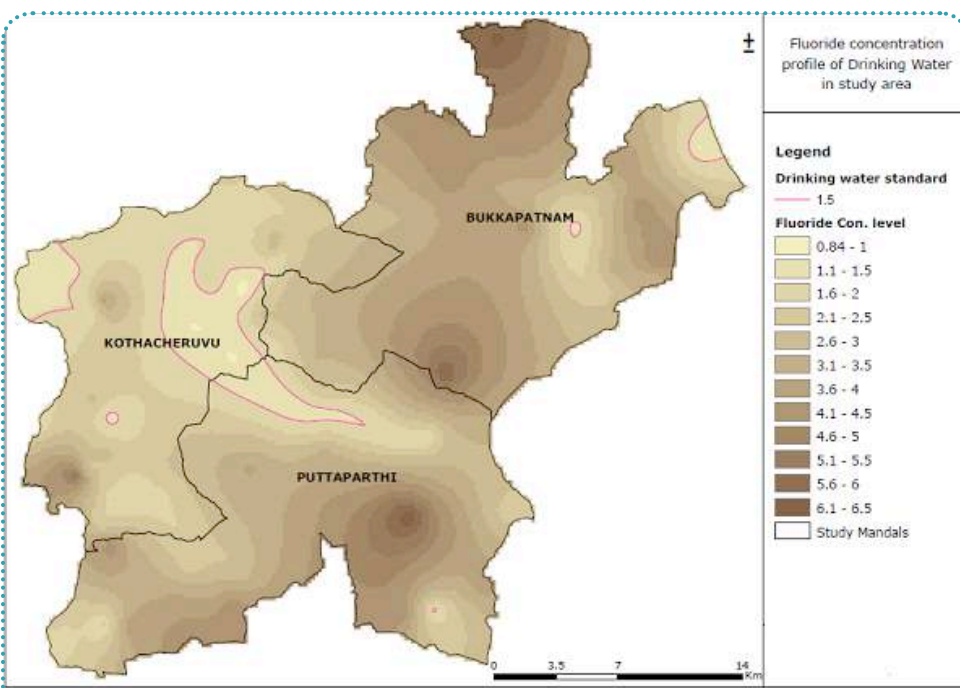
Fiber Optical Gyroscopes (FOG) have been typically useful in medium and low performance applications such as automotive and robotics, and also space applications, which require very high performance under relatively quiet environments. Fiber optical

gyroscopes have not yet been used for aircraft navigation due to the need of high resolution and performance under noisy environments. It is clear that there is a need to investigate and study novel configurations while maintaining the simplicity of the basic configurations.

The Dept. of Physics proposed using theoretical analysis and simulations, a gyroscope that uses a ring resonator with a reflecting element. The proposed structure utilizes the rotation induced Sagnac shift along with the inherent coupling between the clockwise and counter clockwise waves to produce changes in the reflected intensity that vary linearly with rotation. Shot noise limited sensitivities of 0.01 deg/h are shown possible for rings of radius 10 cm.

This makes the Resonant Optical Gyroscope really light weight, highly sensitive and accurate. Therefore, they can be used in satellite navigation, for example, where such sensitivities are of particular importance.

GIS map of fluoride concentration



Autologous chondrocyte implantation

Knee replacement surgeries are both painful and very expensive.

In collaboration with Dept. of Orthopaedics, Sri Sathya Sai Institute of Higher Medical Sciences, Prasanthigram, as part of the research focus on Regenerative Medicine and Tissue engineering, the Dept. of Biosciences, SSSIHL has established a cell culture facility for the development of cutting-edge technologies for restoration of chondral defects of the human knee.

The team successfully performed the first indigenous **Autologous Chondrocyte implantation** in August 2015.

The first-year follow-up of the patient has revealed excellent progress in the repair of the cartilage tissue with concomitant increase in the range of the movement of the knee post operation and significant reduction in pain.

Multimodal Microscope

Optical microscopic investigations have become an essential tool in routine clinical pathology and developmental biology research work. The primary necessity for developing such a device arises from the growing need for affordable diagnostic tools in India.

The Dept. of Physics have adopted the Fourier optical image processing techniques to incorporate the multi-modalities.

With the support of DST-Technology Systems Development Board, the department developed a multimodal optical microscope keeping in mind the worldwide development in achieving cost effective disease diagnosis tools as well as an essential research and teaching tool.

The prototype design of a low cost **Multimodal microscope** was successfully completed during 2015/16.

This optical microscope encompasses multiple functionalities like Bright Field imaging, Phase Contrasting, Edge enhancement and Fluorescence imaging, all provided in a single platform. These additions further enhance the image quality in the module, making it highly suitable for developmental biology studies and clinical pathology.

Apart from being relatively cost effective in its design, it offers a functional advantage of easier live cell imaging with simplicity in operation.

Seeing the sample under various modalities is achieved by just changing the filters without disturbing the sample.

Chondrocyte implantation in progress



Multimodal microscope



RESEARCH SCHOLARS ACTIVITIES & ACHIEVEMENTS

Mathematics & Computer Science

Sri Sai Hareesh A

- Reviewer for Journal of Visual Communication and Image Representation, Elsevier, 2015/16.
- Reviewer for International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, World Scientific, 2015/16.

Physics

Sri Pradyumna Mulpur

- Best Paper Award for the work, Studies on Carbon Nanotubes and Carbon Dots based Spacer Layers on Silver Thin Film Substrates towards Boosted Surface Plasmon Coupled Emission. Presented at the International Conference on Recent Advances in Nano Science and Technology, RAINSAT-2015, (in collaboration with Central Leather Research Institute, CLRI), Sathyabama University, Chennai, 8 Jul 2015.
- Research work (A Novel Surface Plasmon Coupled Emission Enabled Forensic Detection Platform) featured on Cover Page of the International Newsletter, Nanotech Insights, Jan 2016.

Sri Murali Ravi

- Best Poster Award for the paper, A System on Chip Solution for Processing of Gamma Camera Images for Thyroid Uptake Studies, 60th DAE-BRNS Symposium on Nuclear Physics, Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam, 7-11 Dec 2015.

Chemistry

R Sri Sai Giridhar Sarma Kandanur

- Filed complete specification India patent for Andrographolide and analogues as multi-therapeutic agents, PATENT-IN6104/CHE/2014-Pending, 3 Dec 2014. Inventors: Sai Giridhar Sarma K, Nageswara Rao G, Srinivas Kanduri.

Sri K Naga Sai Visweswar

- Best Poster award at the National Conference on Frontiers in Chemical Sciences and Technologies, National Institute of Technology, Warangal, Telangana, 28-29 Jan 2016.

Sri S Venkatesh

- Runner Up, Young Scientist Award (Physics) for research work on 1-Minute Cavity Engineering for >1000-fold Enhancements in Surface Plasmon-Coupled Emission: A Mobile Phone Based Next-Gen Plasmonics Approach, Dr. KV Rao Scientific Society Annual Research Awards 2015/16.

Dr. A Sunil, Dr. Sasidhar Siddabattuni, Sri K M Ganesh, Sri Sai Giridhar S, Sri K Naga Sai Visweswar, Sri Pradeep Kumar Badiya, Sri S Venkatesh, Sri Abilash Gangula, Sri Thota Sai Praneeth, Sri Sai Siddhartha

- Three-week internship at Japan Advanced Institute of Science and Technology (JAIST), part of the Sakurazaki Science Exchange Program under the auspices of Japan Science and Technology (JST). The ten Doctoral / Post-Doc Research Scholars from SSSIHL participated in this intense Research Exposure Program in the areas

of Advanced Scientific Methods and Frontier Research Areas in Materials Science at JAIST, Nomi-shi, Ishikawa, Japan, 10-30 July 2015.

Biosciences

Sri Aswath Narayanan S

- Poster Presentation on Probing Molecular Changes in Avascular Necrosis of Femoral Head: Raman Microscopy. Optics Within Life Sciences (OWLS) Conference, Tata Institute of Fundamental Research (TIFR), Mumbai, 16-19 Mar 2016.

Food & Nutritional Sciences

Miss Manjula Devi Ghoora

- Poster award for Nutraceutical Potentials of Fenugreek Microgreens: Phytochemicals and antioxidant activity presented at the National Symposium on Prospects and Potentials in Medicinal and Aromatic Plants (in collaboration with Science Tech Foundation, Bangalore), Department of Botany, Government College, Anantapur, Andhra Pradesh, 19 Dec 2015.



RESEARCH PUBLICATIONS

Mathematics & Computer Science

JOURNAL PAPERS

Sai Hareesh A and Chandrasekaran V, Color Child: A Novel Color Image Local Descriptor for Texture Classification and Segmentation, *Pattern Analysis and Applications*, 19(3), 821-837, (2016).

Bharadwaj B V K and Baruah P K, Existence of a Non-Oscillating Solution for a Second Order Nonlinear ODE, *Communications in Mathematics and Applications*, 6(2), 41-47, (2015).

Ajith Padyana and Baruah P K, Performance of DNA Sequences Compression on Multicores and GPUs, *RGN Publications*, 7(3), 131-147, (2015).

Sree Ranga Vani K and Prasada Rao D R V, Effect of Thermal Radiation on Unsteady Convective Heat Transfer Flow of a Rotating Nano-Fluid Past a Vertical Plate, *Pelagia Research Library, Advances in Applied Science Research*, 7(3), 83-94, (2016).

Sree Ranga Vani K and Prasada Rao D R V, Effect of Non-Linear Density Variation on Convective Heat and Mass Transfer with Third Order Boundary Conditions, *Mathematical Theory and Modelling*, 5(12), 112-123, (2015).

Sree Ranga Vani K and Prasada Rao D R V, Combined Influence of Chemical Reaction, Dissipation and Radiation Absorption on Convective Heat and Mass Transfer Flow in a Non-Uniformly Heated Vertical Channel, *Advances in Physics Theories and Applications*, 47, 32-44, (2015).

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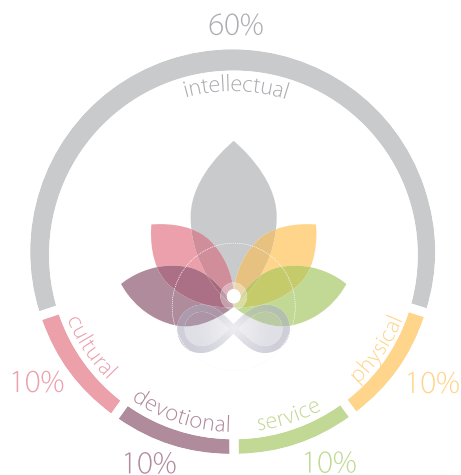
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OTHER ACTIVITIES & EVENTS

These dimensions of Integral Education at SSSIHL help students develop a wholesome & balanced personality



DIMENSIONS OF SRI SATHYA SAI
VALUES-BASED INTEGRAL EDUCATION

SPECIAL ANNUAL EVENTS

There are five special annual events that relate to the devotional, cultural, physical and service dimensions of Sri Sathya Sai Values-based Integral Education.

They are orchestrated to bring out the latent values and good qualities in students and teachers. A lot of planning and effort goes into each of these events.

All students participate in these events in accordance with their individual skills and talents. Teamwork, cooperation, putting others first, honing of extracurricular skills, building self-confidence and stretching one's self to perform to a higher degree are some of the many positive benefits of these events.

Summer Course in Indian Culture & Spirituality

12-14 June 2015

The Summer Course in Indian Culture & Spirituality serves as an introduction programme to all students and teachers of Sri Sathya Sai Institute of Higher Learning with an objective to expose students of the university to the rich cultural and spiritual heritage of *Bharat*. It orients students into Bhagawan Baba's educational philosophy and gives them deep, first hand insights into how they can directly benefit from this unique institution.

In 2015/16, the event took place from 12 to 14 June 2015 in Prasanthi Nilayam. All university students, teachers and research scholars attended.

The morning sessions consisted of talks by teachers and research scholars of the university and interactive sessions, such as faculty and Alumni Panel Discussions. Typically, they provided insights, concepts and lessons from the ancient Indian scriptures (such as The Ramayana and The Mahabharata) and spiritual personalities and concepts. They also featured short video shows on Bhagawan Sri Sathya Sai Baba, panel discussions, a Chinna Katha Analysis

Exercise, a Quiz and a scintillating Bhajan Workshop.

In the afternoons, students and teachers from all four campuses had breakout sessions where the students participated in study circle sessions and discussed the divine discourses delivered by Bhagawan in the Summer Course in Indian Culture and Spirituality on 26 May and 29 May 1992 entitled- *Mysteries of Creation and Message of the Vedas*. Key moral messages from the discourses were creatively presented by students of each campus on the final day before the valediction.

The evening sessions consisted of music programmes by students of the individual campuses, talks and *veda* chanting along with *bhajans* at the Sai Kulwant Hall.

Perhaps the highlight of the day for students were the post-dinner *parayanam* sessions. They consisted of two to three talks by alumni or teachers who shared their personal experiences with Bhagawan Sri Sathya Sai Baba and the profound impact this had in shaping their lives. The valuable and profound life lessons and the sheer love that Baba had for His students and devotees was vividly communicated through these informal sessions.



Prasanthi Vidwan Mahasabha

16-22 October 2015

Dasara or Navaratri is a ten-day festival, usually falling in the month of October, and is celebrated all over India in the worship of the Divine as the Mother principle. Since the early sixties, the festival of Dasara in Prasanthi Nilayam has been closely associated with the *Veda Purusha Saptaha Jnana Yagna*. This *yagnam* is a week-long worship conducted in the Divine Presence in the Poornachandra Auditorium in Prasanthi Nilayam each year for the welfare of the whole world. The *yagnam* commences on the fourth day of Dasara and concludes with the *Poornahuti* – the final oblation that is offered on Vijayadasami, the tenth day.

The evening programmes during the seven days of the *yagnam* are held in Sai Kulwant Hall, under the auspices of the 'Prasanthi Vidwan Mahasabha', where many speakers—primarily students and functionaries of Bhagawan's educational institutions—address the gathering on topics concerning spirituality and philosophy, Bhagawan's teachings and experiences of devotees.

The topics for Prasanthi Vidwan Mahasabha 2015 were: Faith & Prayer, Live in God, God is All Pervasive, The Love of the Timeless Mother, Saraswati Vaibhavam, God is Tremendous, Mysterious and Fascinating.

Sri Sathya Sai Grama Seva

13-22 October 2015

For over 1300 young university students (and their teachers), nine days of their academic year is spent in the service of almost 300,000 village folk in over 150 villages. This includes distribution of food, clothes and other items, along with *bhajans*, thus converting the food into *prasadam*. The service activity is part of the university curriculum for all students.

In 2015, Sri Sathya Sai Grama Seva took place from 13 to 22 October.

The university students, research scholars and teachers largely managed the entire project—the planning, resourcing, organizing and implementation—from start to finish. This included:

- Planning
- Food Preparation
- Packing
- Logistics
- Serving

Impact of Grama Seva

The Revered Founder Chancellor, when initiating this project in the year 2000, stressed that the greatest beneficiaries are not the villagers, but the students. What impact does Grama Seva have on students and villagers?

ON STUDENTS

- It inspires students to live their lives along a higher ideal
- It sensitizes them to the problems of our society, to rural life and the needs of lesser privileged sections of the community
- It trains students to work in teams and groups under constraints of time and resources
- It enables them to appreciate the joy associated with service

ON VILLAGE FOLK

- It kindles hope in their hearts, reinforcing their faith in the truth that God will take care of them
- It inspires them. The *prasadam* distributed after *nagarsankirtan* and *bhajans* is symbolic of Bhagawan Baba's Divine love, compassion and grace, and of His assurance of protection





- It provides them with food and clothes at the physical level, hope and faith at the mental level and bliss at the spiritual level

Annual Convocation

22 November 2015

The 34th Annual Convocation of the university was held at Sai Kulwant Hall, Prasanthi Nilayam in the Divine Presence on 22 November 2015. The convocation ceremony is a testimony to the values-based education philosophy of the university's Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba.

The annual convocation at Sri Sathya Sai Institute of Higher Learning (SSSIHL) coincided with the 90th birthday of Bhagawan Sri Sathya Sai Baba. The chief guest of the 34th Annual Convocation was Prof. Kenji Uchino, Director, International Centre for Actuators and Transducers, Professor, Electrical Engineering, Pennsylvania State University, USA. Prof. Uchino is a highly reputed and decorated material scientist.

The programme included speeches by the Vice-Chancellor, the chief guest and the Revered Founder Chancellor (broadcast of a previous Convocation Discourse).

For the academic year 2015/16, a total of 469 graduands received their degrees, 7 students were awarded Ph.D.s and 24 students received Gold Medals for distinction in their respective subject areas.

The evening session consisted of the Annual Convocation Drama, performed by the students of the university. The Drama: Jagannatakam – Jagatiki Sandesham (This Cosmic Drama – A message to the World) was based on the purpose of the 'drama' of life. The theme was portrayed through the trials and tribulations of the central character in the drama, Chaitanya, a talented young actor under the tutelage of Sri Jagannath - a famous playwright.

All-Round Gold Medallists

Sree Kumari S Raju
Anantapur Campus - III B.Sc. (Hons.)

Sai Satya Narayana V
Prasanthi Nilayam Campus - M.B.A. in Finance

Seemesh Bhaskar
Brindavan Campus - III B.Sc. (Hons.) in Chemistry

Ashish Bisunke
Muddenahalli Campus - III B.B.M.

Gold Medallists

Siva Sundar A - M.Tech. in Computer Science

Kopparthi Harshatheja - M.Tech. in Optoelectronics and Communications

Sai Shiv Narayan - M.Tech. in Nuclear Medicine

Ivaturi Aditya - M.Phil. in Mathematics

Prakrit Kamra - M.B.A.

Menon Parikshit Ravindran - M.B.A. in Finance

Satyaprakash Mohanty - M.F.M.

Adarsh Saraf - M.Sc. in Mathematics

J Aditya - M.Sc. in Physics

Sai Gourang Patnaik - M.Sc. in Chemistry

Akarsh Bajpai - M.Sc. in Biosciences

Yogeshbaba K - M.A. in Economics

Pankaj Kumar - B.Sc. (Hons.) in Biosciences

B M S Sai Pragnan - B.Sc. (Hons.) in Economics

Devjeet Auddy - B.A. (Hons.) in Economics

Sanjana Marwah - M.Sc. in Food Technology

Mohana Lakshmi R - B.Ed.

Annapurna R - B.B.M.

Dikcha Gupta - B.Sc. (Hons.) in Mathematics

Anjana Biswas - B.Sc. (Hons.) in Physics

Sai Kiran M - B.Sc. (Hons.) in Chemistry

Ashrita C Haldipur - B.Sc. in Home Science

Athira Ajith - B.Com. (Hons.)

Bhavyasree Nair - Bachelor of Arts

Ph.D. Awardees

Uday Kiran N - Mathematics

Microlocal Analysis of Operators with Characteristics of Higher Multiplicities

K N Naresh - Biosciences

Studies on Structure, Spectroscopic Properties and Phenoloxidase Activity of Hemocyanin from Pila globosa

Gopakumar K U - Economics

Food Inflation in India-1980 to 2012: A Structuralist Policy Perspective

Pushkala Ramachandran - Food Science & Nutrition

Edible Coating, Functional Food and Nutraceutical Applications of Aloe Gel and Chitosan Biopolymers

Rajeshwari C U - Food Science & Nutrition

Evaluation of Coriander (Coriandrum sativum L.) Seeds for Phytoconstituents and Therapeutic Potential

Dibba Bhargavi - English Language & Literature

From Purposelessness to Purpose: A Study of Shift in Perspective in Select Novels of Iris Murdoch

Maitali Verma - English Language & Literature

Inter- and Intra- Personal Unities in 'Poetry as a Process': A Study of Select Modern / Post-Modern Poets in an Applied Critique



Annual Sports & Cultural Meet 2015

11-15 January 2016

We, the children of Sai, swear that, we shall take part in the Annual Sports & Games of Sri Sathya Sai Institutions, in fair competition; respecting and abiding by the rules which govern them and with a desire to participate in the true spirit of sportsmanship, for the honour of our country, the glory of sport and our beloved Mother Sai.

Sports Meet Oath, Sri Sathya Sai Educational Institutions

Perseverance and tenacity are often the foundational traits of success. When combined with dedication and teamwork, the result is outstanding. Over two thousand students—age five to twenty-five—of Sri Sathya Sai educational institutions wore these very traits on their sleeve on the 11th of January. Together, they put on a spectacular display of courage, hard work, skill and brilliance during the Annual Sports and Cultural Meet, a stand-out event of their annual academic calendars.

The event is a major part of the values-based integral education system practiced at these institutions for over thirty-five years. The prime motivation for this offering is to please the Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba. Preparations for the event began a month in advance.

The creative ideas, set-ups, props, practice and final performances were a combined effort of the teachers and students of the institutions with limited budgets and very little assistance from the outside.

Truly, as they say, seeing it is believing it. The list of events and performances during the five-day meet include:

Sports Meet

11 January

Prasanthi Nilayam, Anantapur, Brindavan and Muddenahalli Campuses presentations:

Bike Stunts, Thunder Birds, Dragons and Drums, Rugged & Tough, Boomers, Roller blades, Ladder Maniacs, League of Legends, Hip-tronic, Wizards of Wonder, *Kalaripayatt*, The Lords of Gravity and The Blazing Warriors.

Cultural Meet

12-15 January

- o Drama presentation on *Bhakta Ramadasa* by students of Brindavan campus
- o Musical offering entitled Know Thyself by the students of Anantapur Campus
- o Drama presentation entitled *Tere Pyar Ke Liye* by students of Muddenahalli campus
- o Drama presentation on the qualities of *Hanuman* by students of Prasanthi Nilayam campus

Prize Distribution Ceremony

15 January

The Prize Distribution Ceremony honours all students who excelled in both sports and cultural activities, not just during the Annual Sports and Cultural Meet, but throughout the academic year.

The event began with a grand procession comprising the university brass band, *veda* chanting students and a flag-bearing squad. A series of brief talks by five students of different institutions then highlighted the significance of the event for the students and teachers involved. They narrated by various examples and

incidences how the event highlights the bond of love between students and Bhagawan Sri Sathya Sai Baba.

Next, the Founder Chancellor's trophies were awarded to all the Sai educational institutions.

Following this, the list of winners was presented to Bhagawan Baba; and finally, the championship trophies were awarded. Given below are the champions for the academic year 2015/16.

Athletics Champions

Kunti Tandi

Postgraduate, Anantapur Campus

Maddireddy Meghana

Undergraduate, Anantapur Campus

Gaurav D Verma

Postgraduate, Prasanthi Nilayam Campus

Amarendra Pratap Biswal

Undergraduate, Prasanthi Nilayam Campus

Praveen Kumar Reddy G

Brindavan Campus

Tallupullu Naresh

Muddenahalli Campus

Cultural Champions

Krithika Lakshmi C

Postgraduate, Anantapur Campus

Ridhi Bhalla

Undergraduate, Anantapur Campus

Balaram Khamari

Postgraduate, Prasanthi Nilayam Campus

Zuben Mukhia

Undergraduate, Prasanthi Nilayam Campus

Karan Kumar

Brindavan Campus

Mayank Gandhi

Muddenahalli Campus

Fine Arts Champions

Bhawana Rai

Postgraduate, Anantapur Campus

Kotha Hridhay Keerthana

Undergraduate, Anantapur Campus

OTHER INTEGRAL EDUCATION ACTIVITIES

All students at SSSIHL spend 60% of their time at university on intellectual activities (primarily on their studies). The rest of the 40% of time is spent almost equally on activities related to the Integral Education dimensions of Devotional, Cultural, Physical and Service. These are highlighted below.

Devotional Dimension

- **Bhajans (Sankirtan)**
- **Vedic** chants and **stotrams**
- Meditation & Silent sitting
- **Suprabhatam** (prayer at dawn)
- Assembly (college prayer)
- **Brahmarpanam** (food prayer)
- Daily **Kshama Prarthana** (night prayer)

The activities of the devotional dimension enable a student to connect to his/her Divine inner Self. This inner connection opens the heart and brings forth the feeling of love, compassion and empathy for fellow human beings.

Cultural Dimension

- Celebration of festivals:
 - Eid-al-Fitr, Independence Day, Sri Krishna Janamashtami (cow procession), Ganesh Chaturthi, Ganesh Immersion, Christmas Ugadi, Sri Ramanavami, etc.
- Brass Band
- Nadaswaram & Panchavadyam ensemble
- Annual Sports & Cultural Meet
- Performing Arts: Music programmes,
- Drama & Dance
- Fine Arts: Rangoli, Card making,
- Photography, Altar making
- Public Speaking
- Debates and Elocution

From the performing arts to public speaking to the fine arts, the cultural dimension is designed to give students wide opportunities to find an avenue to their individual artistic expression.

The university makes every effort to provide the best possible resources—both material and human—so that students excel at their chosen activity. Festivals of major world religions are

celebrated, reinforcing the unity among all faiths. Every student is involved in one way or another in the celebration of these festivals.

Physical Dimension

- Sports
- Games
- Jogging
- Exercises and Yogasanas
- Annual Sports & Cultural Meet

Sports and games are a part of the daily routine of all students. From yoga classes to fitness training, from team sports to individual sports, students are encouraged to overcome their limitations and excel in these activities.

The university has excellent sports facilities.

Service Dimension

- Self-Reliance departments:
 - Electricals, Plumbing (water supply), Audiovisual, General store, Dispensary
 - Dietary services, Hostel mess, Arts & Crafts, costumes & props, etc.
- Community living
- Social Work
- Voluntary work
- Grama Seva (Annual Village Service)
- Prasadam Distribution

The philosophy of service at SSSIHL is based on the concept that divinity pervades all of humanity, and hence when you serve others, you are serving the Divine. Students learn to serve without expecting anything in return, other than the deep inner satisfaction of serving others.

The compulsory residential system, where students live in dormitory-styled accommodation with other students from totally different backgrounds (for a minimum of two years and up to five or more years), provides an excellent foundation for the service dimension.

Intellectual Dimension

Apart from academics and research, the activities in this dimension include:

Awareness Courses

These mandatory courses are designed to cultivate a broad view of the human condition in students. The course content (e.g. the Unity of Religions and Faiths, Study of the Indian Epics, etc.) helps trigger self-reflection and enquiry and sensitises students to the concerns of society, and gets them to think about practical solutions to these problems.

Thursday Moral Class

At each campus, Thursday mornings begin with an hour of inspiring and ennobling talks by speakers focusing on their personal spiritual experiences, messages from sacred scriptures and other elevated and socially relevant themes. It is also used to highlight students' talents in music, dramatics, elocution, debates, quizzes, etc. In 2015/16, topics included: Social Network and Spirituality, Mindfulness, Practical Aspects of Selfless Service, Ramayana, etc.

Prayer Talks

Every morning before classes commence at the college, all students and teachers gather for the morning assembly. Prayers/*veda* chanting/*bhajans* and a few minutes of silent sitting are sometimes followed by a talk by students, faculty members or invited guests on topics related to morals and values.

In 2015/16, topics included: Free will & Destiny, Who am I?, Gratitude, Experiments on Ideals of Life, Sai - The Indweller, If You are Happy, You Will Succeed, Optimism, Change, Internet vs. Inner Net, Humanity, The Power of Speech, My Beloved Lord, etc.



COMMUNITY SERVICE

On their own volition, students and teachers of the university work with local communities around the campuses throughout the year. Many of these service activities are conceived and inspired by students themselves. They are a reflection of the impact of the unique education they receive here.

Examples of these from 2015/16 include:

Leper Colony Adoption

Anantapur Campus, 1986 to date

The campus warden, with the help of students and alumni, has adopted a leper colony since 1986 with a long-term objective of making the families as self-sufficient as possible.

Aptly named **Love Stream**, the project has helped transform the lives of twenty-five socially marginalized families through dedicated love and care.

The colony that consisted of 10-12 huts in 1986 now has twenty neat little houses. The creatively raised capital has funded water pumps, stationery items, food supplies and even fifty trees so that they can sell their own fruits and earn an income. As a result, almost every family now has its own bank account.

This year, the warden had regular monthly visits with four different students each time. In this manner, the students got exposed to them, their pathetic condition and developed empathy and a spirit of sharing

and caring towards the less fortunate ones in the society.

The lepers were facing security issues with passersby walking into the society (the colony is located on the highway) as it did not have a gate. They had been requesting for one for a long time and this year, sufficient funds were raised to get a strong gate built for them.

Old Age Home Visit

Muddenahalli Campus, 14 April 2015

Students of all classes along with teachers, visited the Sai Dwarakamayee Vriddhashrama, an old age home housing about 40 residents—old men and women—at Sultanpet, Nandi village, a few kilometres away from the campus.

The visit was scheduled for the first Sunday of every month, whenever the students were in campus. The students were sensitized to the need for respecting elders and giving love and care to parents. Games and interactive sessions imbued with light fun and personal touch provided the forum for better understanding of the magnanimity of god's gift called human life.

Students conducted *bhajans* and *veda* chanting before commencing their every visit and interaction at the old age home.

Sai Bandhan

Brindavan Campus, April-May 2016

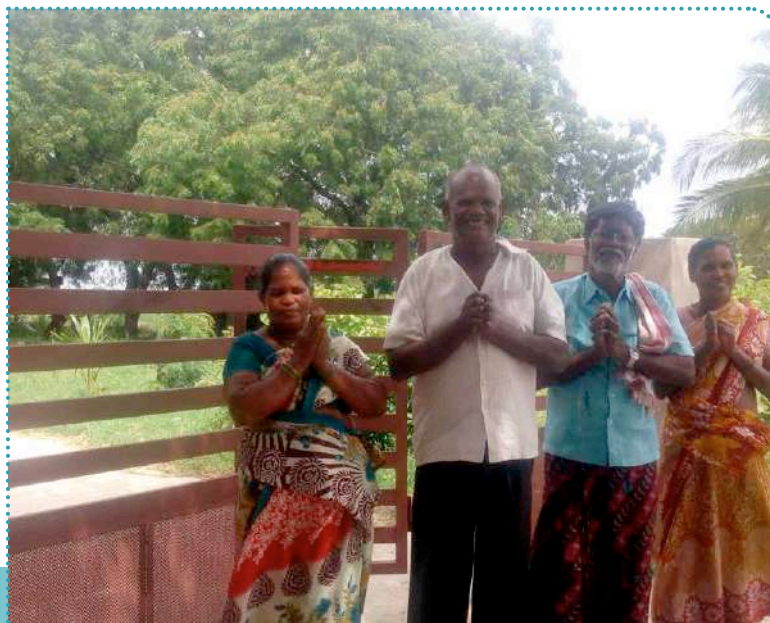
The Sai Bandhan domiciliary outreach program is a collaboration between students of Brindavan Campus, SSSIHL and Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS), Whitefield, Bangalore.

During their summer vacation, students voluntarily set out to meet patients who had been previously treated at SSSIHMS, Whitefield. The objective was to assure the patients and their families of Sai's continued concern for their well-being and get feedback about their experience at SSSIHMS.

In 2016, the second year of the program, as many as eighty students volunteered to visit 200-odd patients across fifteen states and a union territory. The patients visited belonged to different sections of society. They were of diverse caste, creed, religion, age groups and economic strata.

All patient information was provided by SSSIHMS and the logistical support to meet them was extended by members of Sri Sathya Sai Seva organisation in the state concerned.

Students were able to experience first hand, the love the patients and their families have for Bhagawan Baba. From a bleak future, Bhagawan had turned around their lives and made them look forward to a happy and healthy future.



From being rejected by society because of their inability to contribute to it, these patients have turned into productive members of society.

Impact on Students

The students were also able to experience the 'infectious' nature of good work which draws others too.

Many Sai youth accompanied them in the villages, eager to show them the dwellings tucked away in the labyrinthine by-lanes of the villages.

In some cases, members of the family of students also enthusiastically participated. Some auto-rickshaw drivers refused to charge the fare, considering the noble cause and with a desire to be part of this sacred mission.

In all, these students returned from the holidays with renewed vigour, a sense of responsibility and with a deep desire to sanctify their lives by serving society.

T Sulakunta Village Grama Seva

Brindavan Campus, 15-16 April 2016

T Sulakunta (population 200), a village in Krishnagiri district, Tamil Nadu was chosen for the Grama Seva work by students in 2016. Fifty-three students and seven teachers enrolled themselves for this year's service in the village. The logistic support for the work was provided by the Sri Sathya Sai Seva Organisation, Hosur District, Karnataka.

Planning and preparation began a month in advance and included making *chulhas*, preparing lectures and logistical planning.

On the morning of 15 April, the group arrived at the village and commenced the service with *nagar sankeertan* and *veda* chanting.

The students and teachers then divided themselves into various groups and commenced their work. One group of students painted the school building. Another took a *balvikas* class for the children.

A third group went round the village installing solar bottle bulbs - an ecologically sustainable and free-of-cost source of interior light to rooms using plastic bottles filled with water plus a little bleach (to inhibit algal growth), fitted through the roof of the dwelling. During daytime, the water inside the bottle refracts sunlight, delivering as much light as a 40- to 60-watt incandescent bulb to the interior. The 'bulb' can last up to five years.

Another group set up a solar panel fed electric light in the community hall where the children assembled for study every night. The smokeless *chulha* group went around installing the *chulhas* in previously selected dwellings.

In the evening, a student and teacher spoke in Kannada about the ideals Sri Rama placed before mankind. After *bhajan* and *mangala aarti*, the group retired at the Hosur samithi.

The next day entailed sports and drawing competitions with prizes awarded to the victorious ones. There was a lot of excitement and enthusiasm. Another group of students taught the children valuable lessons in keeping the surroundings clean.

When the group was ready to depart, one of the village teachers, Smt. Hamsavalli was in tears. She said she had never seen these children receive so much love.

One of the students in the IX Standard, Sumitra, who had no parents and whose illiterate grandmother was the only guardian, too was in tears. She expressed how much she had been motivated to study well. She confided that her ambition in life was to become a District Collector.

The bleak surrounding and the stifling poverty had not snuffed out the dream of this little girl.

Impact on Students

The take-away lessons for the students were many. They understood how much the country needs their service, and that there are fellow human beings without any hope in the villages and who are somehow carrying on with their humdrum lives.

Students experienced that even in such surroundings, there are bright children who could be made to shine if opportunities were provided.

The seva project also reminded them to count their blessings. They understood the import of Bhagawan Baba's saying: Serve society and you will be rewarded with unconditional love in return.



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