SRI VENKATESWARA INTERNSHIP PROGRAM FOR RESEARCH IN ACADEMICS (SRI-VIPRA) 2023: An Overview

"The true wealth of a nation consists not in the stored-up gold but in the intellectual strength of its people." – C V Raman

Undergraduate research projects nurture the innate curiosity of students, encouraging them to ask questions, seek answers, and push the boundaries of what is known. It's a forum which has been successful in kindling the spirit of inquisitiveness and exploration in young undergraduate minds. These projects provide students with hands-on experience in their field of study and serve as a valuable addition to their academic and professional development. The journey with the SRI-VIPRA Internship Program in 2023 began with tremendous enthusiasm, involving 63 diverse projects and a cohort of 369 undergraduate student interns. This remarkable achievement is a testament to the hard work, dedication, and collaborative spirit of the entire community—both mentors and students alike.

The role of a faculty member or mentor in this process is pivotal. Their guidance provides a roadmap for navigating the complexities of research. Through mentorship, students not only gain valuable insights into their chosen field but also develop essential skills in critical thinking and problem-solving. Amidst the demanding commitments of teaching, research, and administrative tasks, SVC teachers have come together to make this academic collaboration a resounding success.

In 2023, SRIVIPRA embarked on a diverse range of research projects, exemplifying the institution's commitment to exploring cutting-edge themes across multiple disciplines. Interdisciplinary projects in science often lead to groundbreaking discoveries and innovations by capitalizing on the diverse perspectives and expertise of researchers from different fields. They are crucial for addressing complex, multifaceted challenges in today's scientific landscape. These projects spanned a wide spectrum of topics, addressing both contemporary concerns and frontier technologies. Green chemistry is a rapidly growing field within chemistry that focuses on the design and development of chemical processes and products that are environmentally friendly, economically viable and socially responsible. In this context, some projects on Green nano-biopolymers, deep eutectic solvents, natural polysaccharide based nanomaterials for sensing and nanostructure based drug delivery have displayed novel work

which may have further applications in developing environment friendly solutions. Projects range included the study of millet biotechnology highlighting the tenets of UN International Year of Millets 2023, cancer biology including study of eyelid tumors, protein structure, study of anti-tubercular approaches, study of food adulterants, phytoremediation of contaminated soil, carbon literacy, amelioration of biotic stress, effect of drain chemicals on garden soil and plants, srudy on quinoxaline Molecules, applications of maleate and fumarate ions, *in silico* Screening of Zika Virus protein,green solvents and microRNA-137 targets in diseases. These research areas collectively contribute to advancements in science, healthcare, agriculture, and sustainability.

Young mathematicians explored the changing world of modeling with partial differential equations and chaotic dynamics, yet another group explored using tools of machine learning and AI towards understanding power signal disturbances. Keeping with the frontier research in electronics, some projects on Semiconductor device modelling and characterization, Piezoelectric Material, Dye-sensitized solar cells, IoT technology and performance analysis of mobile network operators kept the students engaged. While stress management in traditional system of medicine was explored by a group, a comparative study of work-life balance of men and women in the corporate sector, links between diet and disease and shifts in mental attitude in pre-and post COVID times kept others occupied.

International political economy concerns like the changing role of India under G-20 and multilateralism, debt crisis in developing countries, skill sets of Indians and Chinese and the situation in Myanmarese borderlands kept a few teams engaged. Some other projects explored themes like the stability of the Indian banking system, comparative analysis of state government finances, structural modeling of women empowerment and evaluation of government programmes like *Housing for All.*

The intersection of consumer behavior and deceptive marketing was explored, shedding light on evolving dynamics in the business world. Psychological behavior relating to sustainable fashion. Financial projects delved into risk tolerance in decision-making, the Insolvency and Bankruptcy Code 2016 and its impact on the corporate sector. A great set of projects explored literary texts attempting a critical appreciation of Dr. Ambedkar's writings, virtual ethnography, trauma and memory in literature and the changes in climate change as reflected in literary texts as well the language questions in higher education in India.

Through these projects, SRIVIPRA continued to emphasize the development of research skills and a commitment to exploring and addressing pressing issues across various fields.

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As we reflect on the diverse and fascinating themes pursued as part of the SRIVIPRA projects in 2023, it's clear that this program has provided a platform for exploration, discovery, and academic growth. Thank you all for your invaluable participation in this exceptional academic exercise.

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