

Research at SVIMS enabled by Sri Balaji Arogyavaraprasadini Scheme

Research Programme:

Research funding through SBAVP scheme is instrumental in bringing together clinician scientists from diverse fields of healthcare in SVIMS to frame seminal hypotheses relevant to Indian scenario (present and future) and generate new knowledge for the betterment of the patients and the population. These 'patient oriented discoveries' will remain the driver as we journey through our roadmap. Most of the research projects of our faculty, postgraduates and research scholars build on a confluence of basic, translational and clinical areas. They span the spectrum of bench to bedside, health services and outcomes research. Below is the summary of some of the disease specific research conducted through funds allocated for over 100 research projects during the last five years:

Our cardiology group investigates biomarkers, echocardiography parameters and clinical profiles for prognostication of coronary artery disease (CAD) patients with myocardial infarction (heart attacks). They also study genetic polymorphisms in CAD to identify population and patient cohorts, and detect specific genotype-phenotype correlations. Novel polymorphisms have been reported to 'Genbank'. This will lead to designing personalized medicine strategies to predict disease acceleration, medicine dosing and create novel treatment paradigms. Ongoing and future research questions include: strain imaging to assess valve repairs and cardiopulmonary function; community based screening for congenital heart disease, rheumatic heart disease and occult coronary artery disease; and continue extension and validation of findings described above from past research.

Apart from cardiology, our research in other noncommunicable diseases (NCD) include diabetes and other endocrine disorders, chronic kidney disease (CKD), cancer etc.

The endocrinology group studies autoimmunity in Type I & II diabetes, as well as thyroid disorders. Working with our biotechnology group, research in stem cells is in early stages to enable in vitro differentiation of cultured human bone marrow derived peripheral stem cells for therapy of diabetes (islet cells) spine injury, heart failure etc. The role of vitamin D deficiency and the effects of vitamin D supplementation is investigated by an interactive group of researchers, in a variety of disorders such as diabetes, heart disease and kidney disease; and the mechanistic research of such effects, including oxidative stress and inflammation.

Ongoing research in CKD and acute kidney injury include contrast induced nephropathy, gut derived uremic toxins, cardiovascular risk factors and endothelial dysfunction, to mention a few. In the area of cancer, the research focus areas are: molecular characterization of leukemia, breast and cervix cancers; micro RNAs and cytokines; human papilloma virus genotyping and point of care testing (eg. Loop mediated amplification) for cervix cancer screening and prevention.

Several other research projects relate to infectious diseases such as swineflu and dengue, in order to characterize subtypes during epidemics; and identification of inhibitors at molecular level. SVIMS is also noted for TB research, to study multidrug resistance and inflammatory mediators (Cytokines). In healthcare associated infectious research, Biofilm forming proteins are characterized in order to understand antimicrobial resistance.

Our Biotechnology and Bioinformatics projects are also geared towards the understanding of genetic mutations in various human diseases: polycystic kidney disease, wilms tumor, breast cancer genes (BRCA), Leukemia (BCR-ABL), neurofibromatosis etc. The sequences have been deposited in public realm: www.ncbi.nlm.nih/Genbank (so far 200 gene sequences have been deposited in Genbank).

Research Publications: Over 1543 publications in peer reviewed journals during 1993-2016. In 2016 alone, 177 publications.

New Library: Library cum research centre building is constructed at the cost of Rs. 6.75 crores.

Biomedical & research journals for library: Annually, about Rs. 1 crore is allocated for the purchase of print and e-journals. Since 2006, a total of Rs. 10.57 crores of SBAVP funds are utilized.

Stipend and travel expenses for research: Funds are provided for postgraduate trainees and research scholars for stipend / salary support and presentation of work in national/international meetings.

