

The First Review Report

on

GRAND CHALLENGE SCHOLARS PROGRAMME

1st August, 2019

The American based National Academy of Engineering's 14 Grand Challenges for engineering calls for a new *Engineering Education Paradigm*. In this regard, The Duke's Pratt School of Engineering, The Franklin W. Olin College of Engineering, and The University of Southern California's Viterbi School of Engineering proposed a new education model to prepare engineers to be world changers. The programme was endorsed by the National Academy of Engineering (NAE) in February 2009 also known as Grand Challenges Scholars Programme (GCSP). The GCSP is a combination of curricular, co-curricular, and extra-curricular activities aim at four cross-cutting themes such as *Sustainability, Health, Security, and Joy of Living* with 14 challenges.

Across the globe, around 122 institutions are the members of this group. Sree Vidyanikethan Engineering College is the first representative from India, which submitted the complete proposal, got approval, figured in GCSP's website and focusing on *five* core GCSP's components.

The activities undertaken so far are:

- Conducted an awareness programme and screening tests for the students of III-B.Tech.
- Selection of the students for the GCSP of 2018-2019 was finalized.
- Research problems of the III B.Tech, 2018-19 were identified.
- SVEC representatives attended *International Conference on Transformations in Engineering Education* as an ambassador for GCSP at MLREC, Hyderabad.
- SVEC was recognized as a promoter of GCSP in India, and conducted an awareness programme at Hyderabad Institute of Technology and Management, Hyderabad, Telangana.
- Conducted an awareness programme and screening tests for students of II B.Tech 2018-19.

GCSP committee conducted its inaugural review on 1 August 19 for the student teams who are working under the GCSP themes of *Making Solar Energy Affordable, Restoring and Improving Urban Infrastructure, Securing Cyber Space and Providing Access to Clean Water*.

Dr. D.V.S. Bhagavanulu, SVEC-GCSP Director, Dr. B. Narendra Kumar Rao, SVEC-GCSP Coordinator, Mentors of different GCSP themes and the students attended the first review presentation.



The mentors reviewing work and progress

The students of SVEC under the mentorship of Dr. Hemadri Prasad Raju, gave a presentation on *Access to Clean Water Using Herbs*. Their presentation aims at reliable real time detection of microorganisms in treated water by using advance biosensors device.

A few students of SVEC under the mentorship of Dr. K. Khaja Basheer, gave a presentation on *Designing and Monitoring Automatic Plantation System for Eco-friendly Environment in Smart Roads Using ICT and IoT Technology*. The students focus on *Monitoring of Plants* which affects environmental conditions and urban road-side plantation.



The mentors and the students with different GCSP themes

A group of students of SVEC under the guidance of Dr. B. Narendra Kumar Rao, gave a talk on *Intelligent Threat Monitoring Framework for IoT*. Its aim is to provide a unified intelligent framework based architecture which in turn provides threat monitoring for different IoT based networks.

The students under the mentorship of Dr. S. Farook, gave a presentation on *Making Solar Energy Economical*. The team of students focuses on how to reduce the space utilization in solar power batteries by replacing Li-ion batteries with paper batteries and increasing the solar power storage efficiency.

Finally, D.V.S. Bhagavanulu, SVEC-GCSP Director and the Members of Committee gave their remarks on the presentations and the suggestions to be incorporated. Thus, the students' presentations ended on a positive note.