

Shanti Swarup Bhatnagar Prize in Biological Sciences 2020

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In recent times, the inventiveness in the field of science and technology has made a tremendous change to mobilize India. India ranks third among the most attractive investment destination for technology transactions in the world. The Council of Scientific and Industrial research abbreviated as CSIR plays a prime role in the contribution of the countries economy and human development in the field of science and technology. These achievements are possible due to the backbreaking contributions of the whole scientist community.

Following this pandemic condition, apart from the health department, the scientific community of India has also been serving the cause of mitigation of COVID-19. To honour such path-breaking scientists, CSIR has awarded them with SHANTI SWARUP BHATNAGAR AWARD for their outstanding contribution in the field of science and technology for the betterment of our present as well as future, on account of the 79th foundation day of CSIR.

The Shanti Swarup Bhatnagar Prize, named after the founder-director of the Council of Scientific and Industrial Research (CSIR), late Dr. Shanti Swarup Bhatnagar, is awarded annually for pronounced and outstanding research, fundamental in 7 disciplines. The award was instituted in 1957 to recognize conspicuously important and outstanding contributions to human knowledge and progress.

In the area of biological sciences, the SSB prize 2020 was awarded to **Shubhadeep Chatterjee** from the **Centre for DNA Fingerprinting and Diagnostics, Hyderabad**, and to **Vatsala Tirumala** from the **National Centre for Biological Sciences**.

Dr. Chatterjee is currently working as a Scientist-Plant-Microbe Interaction at CDFD. Dr. Chatterjee has been selected for this award for his outstanding contribution in the identification of a reversible non-genetic heterogeneity in bacterial quorum sensing (QS)- (the ability to detect and to respond to cell population density by gene regulation. It enables bacteria to restrict the expression of a specific gene to the high cell densities at which the resulting phenotype will be most beneficial) and providing novel insights into the mechanism by which the Xanthomonas group of phytopathogens causing several economically chief plant diseases, coordinate virulence function, and lifestyle transactions by sensing cell density and Iron availability. The discovery has served as a landmark benefaction, inspiring further

interesting areas of work in the theoretical modelling of QS in bacteria. It had also help in a better understanding of the family Xanthomonas. This discovery has also thrown light on the fundamental system that bacteria uses for social communication, how it metabolizes iron and other kinds of regulations in bacteria.

On the other hand, Dr. Tirumala heads the Neural Circuits and Development Lab. Vatsala Tirumala's work focuses on understanding the hierarchy, mechanisms, and development of neural circuits that generate movement during development and adulthood in animals. They use an interesting model system to study how movement is generated in the zebrafish, a small fresh water tropical fish. The embryonic and larval stages of these fish are transparent, which enables the researchers to directly observe the developing internal organs, including the brain

The SSB prize is awarded to any citizen of India engaged in research in any field of science and technology up to age of 45 as reckoned on December 31 of the year preceding the year of the prize. An overseas citizen of India (OCI) and Persons of Indian Origin (PIO) working in India are also eligible for the prize.

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