मूल कोशिका विज्ञान एवं पुनर्योजी औषधि संस्थान (डीबीटी-इनस्टेम)
जैव प्रौद्योगिकी विभाग,भारत सरकार के अधीन स्वायत्त संस्थान
Institute for Stem Cell Science and Regenerative Medicine (DBT-inStem)
AI under Department of Biotechnology, Govt. of India

Prof. Maneesha S Inamdar
Director

Citation:

Vemula has adopted innovative conceptual approaches, bridging chemistry and biology to develop clinically translatable technologies. While his contributions to discovery-based research are evidenced in his publications, his laboratory has been motivated by the development of technologies to address unmet clinical needs. Vemula is representative of a nascent community of researchers, in the country, in academia, who fill the gap between chemistry and biology using creative and innovative approaches. His strength lies in taking established chemistry and bringing it to address a challenging and open question in the biological/clinical space.

Some of the outcomes of Vemula lab's endeavors in the area of fundamental and translational research are as follows: Vemula's team has seamlessly adopted the "biomimicry-based drug discovery" method and developed "first-in-class" new chemical entities (NCEs) as potential drugs for the treatment of Inflammatory Bowel Diseases (IBD) (*Nat. Commun.* 2019, *10*, 89). Thus far, approaches for the treatment of IBDs have been palliative and directed at inflammation management or immune suppression. Vemula's approach, which holds the promise of repair of gut barrier dysfunction, has been regarded as an innovative advance in the field.

Additionally, his lab has developed a novel blood bag (*Nat. Commun.* 2022, *13,* 7394), prophylactic topical gel to prevent pesticide exposure (*Sci. Adv.* 2018, *4*, eaau1780), and protective clothing as a medical textile (*unpublished*), and a germicidal fabric to create antiviral masks (*unpublished*, startup has been created and products were launched in the market). Additionally, his team have also developed self-assembled hydrogels-based biomaterials for clinical applications such as preventing the rejection of transplanted organs (*Sci. Transl. Med.* 2014, *6*, 249ra110).

Undoubtedly Vemula has creative thinking to blend basic science with translation goals to solve unmet clinical needs. Furthermore, Vemula's work has a unique translational value that leverages his fundamental research. The seamless transformation of his basic research into translational research to solve unmet clinical needs is impressive. Additionally, his contributions through entrepreneurship to translate the technologies developed in his lab into the clinic are commendable. Due to these efforts, Vemula belongs to a rare group of *science-entrepreneurs* across the globe.

In a nutshell, I am pleased nominate Vemula for this prestigious award based on the large body of translational work he has produced that can significantly impact society.

Yours Sincerely,

Prof. Maneesha Inamdar
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