



## UNITED STATES-INDIA EDUCATIONAL FOUNDATION

### 2020-2021 Indian Fellows

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#### Manmeet Singh

<b>Grant Category:</b>	Fulbright-Kalam Climate Fellowship for Doctoral Research
<b>Project Title:</b>	Study of Aerosol-induced Land–Atmosphere Interactions on the Ocean–Atmosphere–Land Coupled System using the IITM-Earth System Model
<b>Field of Study:</b>	Climate
<b>Home Institution:</b>	Indian Institute of Technology Bombay, Mumbai, Maharashtra
<b>Host Institution:</b>	University of Texas at Austin, Austin, TX
<b>Grant Start Month:</b>	February, 2021
<b>Duration of Grant:</b>	Nine months



#### Brief Bio:

Mr. Manmeet Singh is a scientist at the Indian Institute of Tropical Meteorology (IITM), Pune, and an external PhD candidate at the Indian Institute of Technology Bombay, Maharashtra. He completed his bachelor's in civil engineering from Thapar University, Patiala. For his doctoral program, he is researching the role of volcanic and anthropogenic aerosols in the tropical ocean–atmosphere–land coupled system and in the South Asian monsoon. In this context, he is quantifying the role of aerosols in the climate system of South Asia.

Mr. Singh has contributed to the development and simulations of the IITM Earth System Model (IITM-ESM) to participate in the Intergovernmental Panel for Climate Change (IPCC) sixth assessment report (AR6); he has also contributed to the ongoing Indian National Climate Change Report and to the development of an in-house Direct Numerical Simulation (DNS) model at IITM. He has also mentored and taught students at IITM. He takes great interest in non-linear methodologies and state-of-the-art technologies such as artificial intelligence (deep learning and deep reinforcement learning) and complex networks.

As part of the Fulbright-Kalam fellowship, Mr. Singh is examining the role of aerosol-induced land–atmosphere interactions in modulating the distribution of rainfall over South Asia. This quantification of the role of aerosols in modulating the climate can help in answering important scientific questions involving their role in changing precipitation patterns.

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