

National Award in the field of Atmospheric Science & Technology

Prof. Bhupendra Nath Goswami



Prof. Bhupendra Nath Goswami is the Director of the prestigious Indian Institute of Tropical Meteorology (IITM), Pune of the Ministry of Earth Sciences. He joined IITM in June 2006 and since then, through his vision implemented on mission mode, he has steered the Institute to the pinnacles of success. In the field of scientific research, IITM has now become one of the World Centre of Excellence in Basic Research on the

Ocean-Atmosphere Climate System required for improvement of Weather and Climate Forecasts.

Earlier, Prof. Goswami after completing his Ph.D. from the Physical Research Laboratory (the Gujarat University), Ahmedabad, spent two years the Massachusetts Institute of Technology, U.S.A with Prof. Jule Charney as a Post Doctoral Research Associate. Thereafter, he worked in NASA, GSFC Modelling and Simulation Branch, Greenbelt, MD-USA as Resident Research Associate of National Research Council, USA, MD-USA. After returning from NASA, Prof. Goswami joined the Indian Institute of Technology, Delhi as Senior Scientist. He then joined the prestigious Indian Institute of Science, Centre for Atmospheric Science, Bangalore in 1985 as Assistant Professor where he worked till 2006 and grew to become Professor and Chairman of the Centre. He has also been invited as Visiting Professor to several prestigious institutions, such as the Princeton University, USA, University of Maryland, USA, Centre for Ocean Land Atmosphere Interactions (COLA), USA etc. A few important contributions of Prof. Goswami can be stated as:

1. Identifying the two time scales associated with the growth of errors in the tropical climate system, Prof. Goswami established, for the first time, limit on predictability of the tropical climate and showed directions for improving the skill of model predictions.
2. Discovery of the 'Indian Ocean Dipole Mode' with his student Saji (Nature 1999) has opened up a floodgate of research in the role of air-sea interactions over the Indian Ocean on climate of the region leading to citation of the paper by more than 1400 times.
3. His discovery of increasing trend of extreme rainfall events (Science 2006) has brought to the fore role of climate change on Indian monsoon and

encouraged the policy makes to take action on adaptation and hazard prevention. Paper is cited more than 300 times.

4. Prof. Goswami's extensive work on monsoon intraseasonal oscillations (MISOs) has provided deep insight to understanding various aspects of MISOs and led to establishment of a successful extended range prediction system of active and break spells at IITM. He not only provided scale selection mechanisms for the 30-60 day mode and the 10-20 day mode but also made quantitative estimate of limit on predictability of the MISOs. Further, he quantified how the MISOs influence the seasonal mean monsoon through linear and nonlinear processes and makes seasonal mean south Asian monsoon difficult to predict.
5. Heading the Monsoon Mission Project of the Ministry of Earth Sciences, Prof. Goswami has led a group of young scientists to develop an Indian Climate Model for long range prediction of monsoon rainfall and climate change projections, a land mark achievement in the history of Indian Climate Research.

Prof. Goswami has more than 150 research publications in referred journals. More than his own publications, however, increasing the impact factor publications of IITM by a factor of 4 (from 42 to 170) during the past seven years without any substantial increase in the total number of scientists, Prof. Goswami has been able to take the country from 25 years behind the best in the world to a comparable position to the global leaders in the field. Through his sustained efforts, IITM proudly boasts off having the fastest Computer in India with total capacity of 790 TF and 5 PByte of storage and also ranks 43rd in the globe. Further, he has built a World Class Climate System Science Modelling group at IITM. Also, a strong group on Tropical Cloud Physics and Dynamics has been developed to become a National and an International leader.

Prof. Goswami has been conferred upon many awards and honours. To name a few :

Shanti Swarup Bhatnagar Award, in Earth, Atmosphere, Ocean and Planetary Sciences, 1995 by Council of Scientific and Industrial Research, India. Hari Om Ashram Prerit Vikram Sarabhai Award in Space Science including Atmospheric Science, 1994, Physical Research Laboratory, Ahmedabad

Kamal Kumari National Award in Science and Technology, 2008 by Kamal Kumari Foundation, Calcutta. K.R. Ramanathan Prize by INSA, 2008.

Fellow, Third World Academy of Sciences (FTWAS). Fellow, Indian Academy of Sciences, (FASc)

Fellow, Indian National Science Academy, (FNA). Fellow, National Academy of Sciences, India ,(FNASc). Fellow, Indian Meteorological Society (IMS)

In recognition of his outstanding contributions to monsoon and climate research, the Ministry of Earth Sciences honors Prof. Bhupendra Nath Goswami with “National Award in Atmospheric Science & Technology for the year 2014”.