SCOSTEP Distinguished Scientist Award – 2018 – Citation

Professor Jeffrey M. Forbes, Professor Emeritus and Research Professor at the Department of Aerospace Engineering Sciences, University of Colorado, Boulder, USA is the recipient of SCOSTEP's Distinguished Scientists Medal for 2018.

Professor Jeffrey M. Forbes' work has provided the foundation for understanding the role of atmospheric tides in the electrodynamics of the ionosphere; wave driven variability in the mesosphere-thermosphere-ionosphere system, and thermospheric wind and neutral density variations due to solar flares and geomagnetic storms. He has played a leading role in both satellite missions and model development. Prof. Forbes' work has had a profound influence in this area of Solar-Terrestrial Physics not only through his publications, which have been cited over 10,000 times, but also through his guidance of a large number of Ph.D. students. Prof. Forbes has also played a leadership role in several international programs, such as the Middle Atmosphere Program, World Ionosphere Thermosphere Study program and Solar-Terrestrial Energy Program of SCOSTEP.

Professor Forbes has been scientifically active for more than 45 years and in that time has published over 280 articles in refereed publications, an h index of 53 and over 10,000 citations. His graduate work was undertaken with Richard Lindzen, a colleague of Sidney Chapman, and the resulting papers (Forbes and Lindzen, JASTP, 1976a, b, 1977) and his 1981 review paper on the equatorial electrojet (Rev. Geophys. Space Phys.) laid the foundations for tidal/ionospheric coupling.

During his career Prof. Forbes has made important contributions to our understanding of the dynamics, electro-dynamics and chemistry involved in the coupling of solar activity and its variability to the terrestrial atmosphere and geospace environment. His work involves the analysis of satellite data, the validation and development of numerical models, which describe these coupling processes, and support of satellite missions involved in observing the geospace environment. He has been instrumental in identifying the role waves play (in particular atmospheric tides) in coupling the lower atmosphere to the upper atmosphere. He has contributed significantly to the development of this field through his participation in numerous national and international review panels, which defined the key scientific questions of the field.

Professor Forbes has played a leadership role in many of the SCOSTEP programs in the 1980's and 1990's. He has made (and is continuing to make) outstanding contributions to the field of solar-terrestrial relations. He has enriched the field scientifically, strategically given direction to international activities and provided service and support to SCOSTEP and his students and colleagues throughout his career.