The State University of New York at Stony Brook has been a UCAR member since 2006. The State University of New York at Stony Brook (SUNY-SB) is applying for its continued membership as a member of UCAR.

**Program of Studies and Research**

The State University of New York at Stony Brook’s UCAR membership is housed in the Institute for Terrestrial and Planetary Atmospheres (ITPA). ITPA has 8 tenured faculty, 1 untenured, tenure track faculty, 1 research faculty and 3 postdoctoral fellows. ITPA offers curricula in the atmospheric and associated sciences at the undergraduate and graduate levels and conducts research in the fields of climate dynamics, synoptic meteorology, coastal meteorology, climate modeling, cloud microphysics and atmospheric chemistry. Presently ITPA is in the process of hiring two junior faculty members in the areas of extreme weather analysis and regional climate. The increase in faculty is expected to augment external research funding and also enable ITPA to strengthen the curriculum by offering more elective classes.

Presently there are 24 graduate students and 44 undergraduate students enrolled in the programs. In the past 5 years, ITRA has granted 31 B.S. degrees (6.2/year), 12 M.S. degrees (2.4/year), and 14 Ph.D. degrees (2.8/year). ITRA faculty and graduate students have participated in national conferences and meetings hosted by the American Meteorological Society, the American Geophysical Union and Gordon Research Conferences.

**Progress in Atmospheric Sciences**

Research in ITPA is in atmospheric sciences and climate with focus on climate dynamics, synoptic meteorology, coastal meteorology, climate modeling, cloud microphysics and atmospheric chemistry. The current level of annual external research funding expenditures is approximately $7 Million with diverse funding sources including the National Oceanic & Atmospheric Administration, the National Aeronautics & Space Administration, the Department of Energy, the Army Corp of Engineers, the US Department of Agriculture Forest Service and the New York State Governor’s Office. Peer reviewed publications in a variety of journals include 175 articles over the past 5 years (35/year). Most are co-authored by students.

ITPA faculty and students utilize the University’s IBM 38,000 processor Blue Gene supercomputer and a large network of PC/Unix/Linux workstations for general educational use and research projects. The ITPA classrooms possess internet links and the ability to project high resolution graphical information and the Meteorology Teaching Laboratory has Linux based PCs, a Sun workstation and TVs that display weather products in the lab. The computers are linked to each other over a high-bandwidth Internet connection; excellent facilities for students to conduct research in weather and climate modeling, analysis and prognostic forecasting.

The Institute maintains a comprehensive system (developed by UNIDATA) for ingesting and displaying real-time data in the form of worldwide surface and upper air observations, numerical...
weather prediction model output, facsimile maps, satellite imagery, US and local Doppler radars, and lightning data. Software used to access this data include McIdas, for processing satellite information, GEMPAK, an interactive system for displaying all meteorological data, and WXP for meteorological calculations and display. Real-time data is also available from the SUNY-SB weather station. The Institute maintains a vertically pointing Micro-rain radar, a precipitation gauge, and a snow/rain imager on the rooftop. The Trace Gas Laboratory is fully equipped with requisite instrumentation for research and instruction. A small research airplane (not operated by ITPA) is also available for conducting field research. The Aerosol Research Laboratory (ARL) facilitates study of the role of aerosol particles in cloud formation, the interaction of aerosol particles with trace gases, the generation of marine biogenic particles, and the determination of biogenic precursor gases for the formation of secondary organic aerosol particles.

**Participation in UCAR Activities**

In the past 4 years the Director of ITPA has attended the annual UCAR meeting every year. ITPA research has included collaborations with NCAR scientists and use of NCAR facilities. Faculty member activity with UCAR and NCAR has been considerable and has included: Dr. Brian Colle, who served as a member of the Unidata Policy Committee 09/2008 – 12/2011 and as an Instructor for the COMET program in 03/2006, 12/2006, 12/2007, 10/2009, 10/20010 and 10/2011; Dr. John Mak who is a member of the NCAR Atmospheric Chemistry Observing Facilities Workshop; Dr. Marvin Geller who participated in The Lower Atmospheric Observing Facilities Workshop (2012); and Dr. Minghua Zhang who is Co-Chairman of the Atmospheric Model Working Group (AMWG) of the NCAR Community Climate System Model (CCSM).

**Summary and Recommendation**

We recommend that the SUNY-SB membership to UCAR be renewed without reservation.