UCAR Membership Committee Review of the
University of Toronto

The University of Toronto has been a member of UCAR since 1970 and is one of only three Canadian member institutions. The UCAR related programs are located in the Department of Physics and Department of Chemistry and consists of a total of eight faculty members. A review of the application material indicates that The University of Toronto (UT) has participated significantly in the areas of Research and Studies, Progress in Atmospheric and Related Science and Participation in UCAR activities. Some details are highlighted below.

Program of Research and Studies

Both of the affiliated departments maintain active degree programs at the undergraduate and graduate levels as well as supporting a number of postdoctoral fellows and research associates. The Department of Physics awards an annual average of 50 B.S. degrees and Chemistry about 30. During the last 5 years faculty in the affiliated programs have awarded 29 M.Sc. and 26 Ph.D. degrees. Students been recognized for their achievements by the AGU, American Chemical Society, Canadian Society of Chemistry and Canadian Association of Physicists.

Graduates and postdoctoral fellows have been successful in securing employment, taking positions at NASA/JPL, LDEO/Columbia, Environment Canada, MIT, Princeton and elsewhere. Students have also had the opportunity to participate in summer programs at NCAR, WHOI, Cambridge, EU Mountain Meteorology Program as well as a number of international field programs.

There are plans for increasing emphasis on new technology and online learning/blended learning approaches, project based learning and postgraduate and career planning. There is currently a search for faculty in physical oceanography and climate physics, so it seems that the program is stable and will likely be sustained in the future.

Progress in Atmospheric and Related Sciences

Research within the affiliated departments includes geophysical fluid dynamics, numerical modeling of climate and paleoclimate, atmospheric chemistry, remote sensing of chemical evolution and transport. The departments are funded at an annual level of $2.8M CAD. Given that faculty members are paid 12-month salaries and that indirect costs and graduate student support are subsidized from other sources, this represents a proportionately larger amount by U.S. standards. Research activities have resulted in about 190 peer reviewed articles during the period 2009-2014.

Participation in UCAR Activities

The UT has participated significantly in UCAR activities through attendance at the annual members meetings, participation in NCAR CESM Workshops, membership on the NCAR CESM Scientific Steering Committee and the ASP Visiting Scientist Program. UT has led an initiative to convene a workshop in Montreal in August 2014 to explore enhanced connections between UCAR and Canadian researchers. The goal is to provide an international collaborative research in UCAR related sciences.

Summary and Recommendation

In conclusion, it is the committee opinion that UT has fulfilled criteria in the three key areas and recommends renewal of membership in UCAR.