UCAR Membership Committee Review of the New Application of Hampton University

On behalf of the UCAR Membership Committee, Rich Dixon and Michael Thompson submit for your consideration Hampton University’s application for membership to the University Corporation for Atmospheric Research (UCAR). We visited Hampton University (HU) in Hampton, VA on June 15, 2016. The visit was enjoyable and informative. We met with the Assistant Provost for Research and Grantsmanship and Dean of the Graduate College (Dr. Michelle Penn-Marshall), Department of Atmospheric and Planetary Sciences (APS) Chairman (Dr. Robert Loughman), and numerous faculty, graduate students, and visiting undergraduate students. We toured the atmospheric sciences facilities.

Program of Studies and Research

The atmospheric sciences program at HU is focused on graduate education. It is located in the Department of Atmospheric and Planetary Sciences, which is in the School of Science. The program offers M.S. and Ph.D. degrees in Atmospheric Science (AS) and Planetary Science (PS). The program also offers an undergraduate minor. The APS program evolved from an initial start as the Center for Atmospheric Sciences, a research center which remains active and integrated into the APS department. Teaching programs started in the Department of Physics and a stand-alone department (APS) was established in 2008.

The 11 core teaching faculty in AS include a mix of research and tenure faculty with strengths in such diverse topics as radiative transfer, fluid dynamics, remote sensing, mesoscale modeling and atmospheric coupling. In addition, an atmospheric chemist from Old Dominion University serves as affiliated faculty.

The M.S. degree in AS is 30 credit hours including 6 hours of thesis research. The Ph.D. in AS requires 74 credit hours with 37 of those hours devoted to the dissertation. The undergraduate minor requires 18 credit hours.

In recent years graduating doctoral students have been employed in industry or government. Some have chosen to continue at HU in a post-doc position. Recent masters’ graduates not choosing private employment have gone on to doctoral programs at UCAR member universities. The AS graduate program currently has 3 M.S. and 4 Ph.D. enrollees. All are supported with assistantships from research grants.

Teaching facilities include wired classrooms with full internet access and a computer lab with relevant data and software systems. Staff resources include a full time IT professional to manage hardware and software resources.

In addition to the minor, APS offers an undergraduate summer experience program for students outside the department to come to HU and work with APS faculty and graduate students on focused research projects (Figure 1). Participants include HU students from other departments such as physics and mathematics along with meteorology majors from UCAR member schools.

Visit Report FINAL
27 June 16
Progress in the Atmospheric and Related Sciences

All of the APS faculty members have active research programs, along with their teaching loads. Research activities fall broadly into the areas of mesoscale meteorology, remote sensing, atmospheric aerosols, stratospheric ozone, LIDAR and noctilucent clouds (Figure 2). Through the APS Center for Atmospheric Sciences, faculty conduct funded research and serve as PIs for satellite missions such as AIM and SAGE. Annual funding for these efforts is approximately $7M from such agencies as NASA, NOAA, NSF, DoD, and DoE. Results have been published in such outlets as the Journal of Geophysical Research, Atmospheric Chemistry and Physics, the AMS Bulletin, and appropriate IEEE and SPIE journals. Other research and/or teaching collaborations are undertaken through the National Institute for Aerospace, the Virginia Space Grant Consortium, and the Virginia Tidewater Consortium. It is particularly noteworthy that AS faculty coordinate their grant activity to maximize the fiduciary and research benefit to both faculty and students.
Participation in the Activities of UCAR

In addition to the previously mentioned undergraduate summer experience program, many of the research collaborations of AS faculty are with UCAR member schools. Faculty expressed an interest in greater collaboration with UCAR member schools and a willingness to be actively involved in UCAR activities. Graduate students expressed excitement at the potential for expanded opportunities offered by UCAR.

The initial impetus for the HU application came from the hiring of Dr. Jia Yue following his service as a Visiting Professor at HU during the Fall 2011 semester. At the time, Dr. Yue was an ASP Post-Doctoral Fellow at UCAR.

Recommendation and Assessment of the Evaluation Committee

In summary, we find that HU meets the UCAR membership criteria. They have an active program of study and research in the atmospheric sciences. They are contributing to progress in the atmospheric sciences through their research and scholarship. They have participated in UCAR activities in the past and plan to expand that participation in the future.