



# THE GRADUATE SCHOOL

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## UNIVERSITY of WASHINGTON

August 10, 2011

To: Lisa J. Graumlich, Dean  
College of the Environment

From: Gerald J. Baldasty, Vice Provost and Dean  
James S. Antony, Associate Vice Provost and Associate Dean for Academic Affairs

RE: Department of Atmospheric Sciences 2010-2011 Review

This memorandum outlines the recommendations from the Department of Atmospheric Sciences academic program review. Detailed comments can be found in the documents that were a part of the following formal review proceedings:

- Charge meeting between review committee, department, and administrators (March 2, 2010)
- Department self-study (September 15, 2010)
- Site visit (November 15-16, 2010)
- Review committee report (December 2, 2010)
- GPSS report (December 6, 2010 )
- Department response to the review committee report (January 21, 2011)
- Graduate School Council consideration of review (February 3, 2011)

The review committee consisted of:

James Riley, Professor, UW Department of Mechanical Engineering (Committee Chair)  
Toby Bradshaw, Professor, UW Department of Biology  
Kou-Nan Liou, Professor and Director, JIFREESE, Department of Atmospheric and  
Oceanic Sciences, University of California at Los Angeles  
Gerald North, Professor, Department of Atmospheric Sciences, Texas A&M University

A subcommittee of the Graduate School Council presented findings and recommendations to the full Council at its meeting on February 3, 2011. Following are the specific comments and recommendations regarding the department and its degree programs. The Department offers the Bachelor of Sciences (BS), Master of Science, and Doctor of Philosophy in Atmospheric Sciences. It also offers the Graduate Certificate in Climate Science through the Program on Climate Change and which will be reviewed in 2013-2014.

### Program Strengths

- The Department of Atmospheric Sciences is currently ranked among the top three in the nation.
- Five faculty have received prestigious awards for their scientific accomplishments. Nineteen faculty have been elected as Fellows by major scientific societies such as the National Academy of Sciences, American Academy of Sciences, American Association for the Advancement of Science, American Meteorological Society, and the American Geophysical Union.
- Junior faculty are appointed a peer review committee and are actively mentored. In recent years, assistant professors have been awarded 3 NSF CAREER awards and 1 prestigious Houghton Award from the AMS.
- The Department's graduate program is excellent. Most of the graduate students admitted are seeking a PhD. Applicants are recruited from top undergraduate institutions, the program is competitive with

other high-profile graduate programs nationally, and graduate placements are in universities, agencies as the National Weather Service, and research centers as the National Center for Atmospheric Research.

- The undergraduate program is also excellent. Undergraduate majors are pleased with their classroom experiences and quality of training. Students praised the advising of Samantha Scherer and Cliff Mass. The department finds meaningful internships appropriate to students' career plans. Approximately a quarter of undergraduate students move on to graduate school and about a third are involved in undergraduate research.

### Challenges & Risks

The Review Committee identified several threats to the quality and stability of the Atmospheric Sciences program. Retention of departmental faculty was highlighted as a significant challenge to maintaining the national status of the program. More specifically, the Review Committee identified the following challenges as requiring immediate attention.

- Staff and TA support for the Department's missions. Only 2.5 FTE staff are state-funded. Due to the increase in non-major service courses, as recommended in the previous program review, each TA is responsible for 120 undergraduate students. With such little support available, faculty spends more time on administrative tasks which consequently results in less time for grant writing.
- Research infrastructure. The Department has been in the same building for over 40 years without a major renovation. The electrical power and HVAC demands of computing cannot be met in the facility. Laboratory facilities for atmospheric chemistry are inadequate or unavailable. In addition, lab and office space is cramped. Notably, there is no safe storage for hazardous chemicals used in experiments. These facilities cannot compete with those of leading universities like MIT and Yale which have brand new state-of-the art infrastructure to support their research endeavor.
- Faculty salaries. Faculty salaries are considerably lower than those at their peer institutions.

### Graduate Program Review

The Graduate and Professional Student Senate (GPSS) administered a survey to graduate students that resulted in a 36% response rate (24 students). The main findings are the following:

- Students indicated confusion about procedures for completing the General Exam (COGS). They reported a lack of transparency in preparing for the exam and problems with the timing of the exam.
- Workload for TAs was reported as excessive. TAs work with 120 students per class. The students estimate working 40 hours per week on their teaching assignments.
- Student advising is problematic. No formal graduate student mentoring policy exists and there is a discrepancy between how faculty and the program coordinator advise students.

Despite the challenges, students reported being satisfied with the program and the research opportunities available.

### Areas of Concurrence and/or Disagreement

The Department agreed with the review committee's findings and recommendations. It elaborated on the financial challenges and subsequent risks regarding quality and stability.

- Staff and TA support for the Department's mission. The department offered a possible option to address this issue which would involve developing a three-year plan that would increase staff and TA support to levels commensurate with other academic units in the College of the Environment.

Graduate Program:

- Regarding the option of Department-sponsored student support for the first 1-2 years, the Department will work with Advancement to determine whether donors might fund such positions.
- A committee is reviewing required core courses. The core may be reduced by at least one class.
- A faculty and student committee is reviewing the COGS procedure to determine PhD candidacy. The timeline for advancement to candidacy may be reduced by six months.
- After approximately one year of course work, students admitted with a master's degree in Atmospheric Sciences can submit their M.S. thesis to the COGS committee. It streamlines the process relative to the majority of students who enter with only a B.S.

- Each student will meet at least once each year with his or her supervisory committee.

Undergraduate Program:

- The Department agrees that the participation of a significant number of undergraduates in research is important to their educational experience. To increase undergraduate student participation in research would be to recruit more highly qualified students from out-of-state.
- In its interest to offer scholarships to top out-of-state students, the Department is focusing fund raising in this area.
- A new seminar course for freshman and sophomore atmospheric science majors is being developed, which the Department hopes to offer in winter quarter 2012.
- Regarding students' complaints that some required OCEAN courses are taught at too low a level for climate track students, the Department will determine whether an alternate course can be identified.

Graduate School Council Recommendations

The Graduate School Council recommended continuing status for the Department's degree programs, with a review in 10 years (2020-2021 academic year). The Council also made the following recommendations.

- The Dean and Department develop a strategic five-year plan to address the issues raised in the Review Committee report.
- The administration should address the financial issues raised in the review that would assist the Department in maintaining its international and national status.

We concur with the Council's comments and recommendations.

c:      Phyllis M. Wise, Provost and Executive Vice President, Office of the Provost  
         Douglas J. Wadden, Executive Vice Provost for Academic Affairs and Planning,  
                 Office of the Provost  
         Dale R. Duran, Professor and Chair, Department of Atmospheric Sciences  
         John D. Sahr, Associate Dean, Undergraduate Academic Affairs  
         Members of the Atmospheric Sciences Review Committee  
         Members of the Graduate School Council  
         Augustine McCaffery, Senior Academic Program Specialist, The Graduate School  
         GPSS President