

# **Response to the 2010 Review Committee's Report**

## **Department of Atmospheric Sciences**

### **University of Washington**



## **Introduction**

We greatly appreciate the substantial effort the Review Committee devoted to this endeavor and the care with which they conducted the review and formulated their suggestions. We have found their input very valuable.

The text below will follow the structure of the 10-year Review Committee's report by focusing first on imminent threats to the department's excellence and stability. We will then address the less urgent topics listed in Appendices A and B of their report.

## **A Looming Crisis**

The report begins: "The review committee is very concerned that cumulative cuts in the state-supported budget, resulting in chronic understaffing and decay of essential infrastructure, have put the Department at imminent risk of decline from its long-held position as one of the very best Atmospheric Sciences departments in the world." We agree with this assessment and would like to add a few more details that were not appropriate for inclusion in our self-study (and were not available to the review committee).

Probably every UW department could make a reasonable case that they are underfunded. Nevertheless, we *are* different because we are among the very best departments at UW, yet we are perhaps the most poorly supported academic unit in the entire university! What is the evidence for this claim? The case for the

excellence of Atmospheric Sciences has been laid out in the Review Committee report and will not be repeated here.

To understanding the level of our state support relative to other UW units, consider first the ratio of external support to total support for the fiscal year ending June 30, 2009. Atmospheric Sciences is one of only *eight* UW academic departments or schools outside of the health sciences whose external support makes up more than 60% of its total support.<sup>1</sup> This alone of course does not imply we have inadequate state support, but it does reinforce the idea that we are doing a lot with minimal state funding. Our distinctive lack of state support for staff and TAs is revealed by our unusually small ratio  $R_{nf}$ , which we define as the ratio of our total state funds not devoted to faculty salary to our total state funds. Put differently,  $R_{nf}$  is the ratio of staff salaries, TA salaries, and miscellaneous operating funds to our total state budget. For Atmospheric Sciences  $R_{nf}$  is 13.8%; the other 86.2% of our state funding is in faculty salaries. At the time we left the College of Arts and Sciences, this was the smallest  $R_{nf}$  in the Division of Natural Sciences, and it was much smaller than the  $R_{nf}$  for most of the other Natural Science units. As of December 2010, every Academic unit in the College of the Environment has an  $R_{nf}$  of greater than 27%, except the very small School of Marine Affairs, which has an  $R_{nf}$  of 20.9% despite the fact that it offers only a Master's degree and needs no TAs for large non-major classes.

Clearly this is not an easy time to augment the state funding to any unit. Nevertheless, as highlighted by the Review Committee, delay and inaction risk doing real damage to our program. One possible way forward is to develop a three-year plan to bring our staff and TA support up to levels commensurate with the other units in our college, and to immediately shift those budget items least appropriate for funding ICR monies by allocating 50% of the three-year increase this year.

The second focus of the Review Committee's concern is the research infrastructure in our department. If we wish to continue to be a world leading atmospheric science department, we need to have good laboratory space available for our relatively young group of atmospheric chemists, as well as possible new hires over the next decade. The current situation handicaps our experimental research; it discourages prospective graduate students who see more modern facilities in other departments, and in some cases, it compromises safety. We urge the university to develop a concrete strategy for addressing this issue, either by planning for a new building in which we might be co-located with other College of the Environment offices and facilities, or through a major remodel of our current building.

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<sup>1</sup> UW Annual Report of Awards and Expenditures Related to Research, Training, Fellowships and Other Sponsored Programs: FY 2009, Schedule 7.

The third focus of the Review Committee's report notes that our faculty salaries are considerably lower than those at peer institutions. This is particularly destabilizing since most members of our faculty are very highly regarded within the discipline and could easily obtain higher-paying positions at other universities.

## Appendix A: Graduate Program

The Review Committee states our "graduate program is excellent," and suggested some minor issues for consideration.

- Both the faculty and the students would like to have the option of Department-sponsored student support for the first 1-2 years. This is expensive and would be difficult given the other demands on our funds. As a start, we will work with Advancement to see if funding such positions might be attractive to donors. (We will consider employing Skype in our graduate recruitment, although it is crucial that we continue to attract the very top students and it may prove worth the investment to bring them out to Seattle for recruitment visits.)
- We have a committee looking at our required core courses at the present time, and it is likely this core will be reduced by at least one class. It is not accurate to suggest the required core curriculum consists of two years of classes. The core is either 7 or 8 classes (there are two tracks) totaling either 25 or 28 credits. Additional elective courses are required for graduation with a Ph.D., but they only add an additional 14 to 17 credits (for a total of 42, exclusive of seminars and research credits).
- A committee consisting of faculty and graduate students is looking at the COGS procedure we use to determine candidacy for the Ph.D. It is likely that the *deadline* by which a student must be advanced to Ph.D. candidacy will be reduced by about six months (from 3 ¼ to 2 ¾ years). It is important to realize that the current format does *not* mandate a three-year process. Most of the best students are advanced to candidacy before three years. Since 1998, two exceptional students *graduated* with their Ph.D.'s in three years and one quarter.
- Students entering the department with a Master's degree in Atmospheric Sciences can submit their M.S. thesis to the COGS committee after taking roughly one year of course work. This already represents a significant streamlining of the process relative to the majority of students who enter our program with only a B.S.
- We will ensure that each student meets at least once each year with his or her entire supervisory committee.

## Appendix B: Undergraduate Program

The Review Committee's assessment of our undergraduate program was quite positive. Here we respond to minor issues they noted.

- We certainly agree that the participation of a significant fraction of our undergraduates in research is very important. Such participation affords roughly the best 1/3 of our students a chance to genuinely enrich their educational experience by working closely with our faculty on important research problems *where they can make a genuine contribution*. We think it is very important that good students are able to connect with such opportunities, but do not believe the proportion of our undergrads involved in research should necessarily be higher than 1/3. We currently have a reasonable match between the number of well-qualified students applying for these positions and the number available (they are mostly paid). The best way to increase the percentage of our undergraduates involved in research would be to raise the average quality of our undergraduates by recruiting more highly qualified students from out of state (see next bullet).
- We are very interested in offering scholarships to top out-of-state students. We have taken some steps in this direction recently, and are also focusing our fund raising in this area.
- We are currently organizing and developing a new seminar course for our freshman and sophomore atmospheric science majors. This will hopefully be offered for the first time, in winter 2012.
- We will look into this and see if an alternate OCEAN class can be identified.
- This would be nice, but we view this as the lowest priority item identified by the Review Committee.