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September 26, 2011

To: Ana Mari Cauce, Dean, College of Arts & Sciences
Werner Stuetzle, Divisional Dean for Natural Sciences, College of Arts & Sciences

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

RE: Review of the Department of Astronomy (2010-2011)

This memo outlines the recommendations from the review of the Department of Astronomy. Detailed comments on the program can be found in the documents that were part of the following formal review proceedings:

- Charge meeting between review committee, department, and administrators (April 7, 2010)
- Astronomy self-study (November 2, 2010)
- Site visit (January 24-25, 2011)
- Review committee report (February 9, 2011)
- Graduate & Professional Student Senate Report (February 25, 2011)
- Astronomy response to the review committee report (March 23, 2011)
- Graduate School Council consideration of review (May 19, 2011)

The review committee consisted of:

Ron Irving, Professor, UW Mathematics (Committee Chair)
Marina Meila, Associate Professor, UW Statistics
Lars Bildsten, Professor, Department of Physics, University of California, Santa Barbara
Catherine A. Pilachowski, Professor and Associate Dean for Graduate Education, College of Arts and Sciences, Astronomy Department, Indiana University

A subcommittee of the Graduate School Council presented findings and recommendations to the full Council at its meeting on May 19, 2011. The Council found the Department of Astronomy to be a very strong department, described by the review committee as a top ten program that should strive to be among the top five programs nationally. After discussion, Council

recommended continuing status for the department's degree programs, with the next review to be scheduled for the 2020-2021 academic year. Council wishes to commend the department on its positive engagement with the review process and its responsiveness to the review committee's comments and recommendations. Specific comments and recommendations regarding the department and its degree programs include the following:

Program Strengths

- *Service Education.* The department provides excellent lower division undergraduate courses. Introductory courses routinely fill to capacity at 250 students each quarter. The lecturers who teach these courses are highly committed to their students.
- *Undergraduate Majors.* The major is very successful, with satisfied students who express a remarkable *esprit de corps* and have ample opportunities to participate in research.
- *Graduate Students.* The graduate students are very happy, well-funded, and active in research. The review committee estimated the rate of PhD production per FTE is at the national average, and job placement is good.
- *Research.* The department is a founding partner of the Large Synoptic Survey Telescope (LSST) which will offer an infrastructure to accomplish cutting-edge research and expand in newer areas such as computational astronomy.
- *Diversity & Outreach.* Across pre-majors, undergraduate students, graduate students and faculty, the department has been successful in achieving gender diversity. Further, their pre-major program has effectively attracted under-represented students.
- *Space & Facilities.* The campus facility is impressive. The Apache Point Observatory is in excellent shape and well managed.

Challenges & Risks

- *Undergraduate Major.* About half of the majors aspire to attend graduate school. For these students completing a specific foundational course sequence in physics has been challenging, both in terms of course access and expectations, so that stronger coordination with the Department of Physics is suggested. In addition, Astronomy should also seek to motivate their students to take these courses in a more timely fashion.
- *Graduate Students.* One concern is that some faculty members are not advising new graduate students and, as a result, students perceive a decreased choice of available faculty. Some students expressed concern over insufficient instructional training in preparation for their graduate student teaching appointment.
- *Research.* The review committee recommended a more clearly articulated strategy for the department in terms of identifying research foci. This includes articulating which key scientific issues are of highest interest moving forward, as well as identifying its most relevant goals in the area of theoretical astrophysics and working with the department of Physics to achieve those goals. Finally, the department is advised to take a leadership role within the Astrophysical Research Consortium to identify a vision for the broad future of the Apache Point Observatory.
- *Faculty.* The current faculty is very strong. It is also few in number relative to other top departments. This fact, coupled with likely future retirements, raised concerns about insufficient "strategic planning" for hiring future faculty. The faculty's hesitation to plan for the future may be related to broader budgetary concerns and long-term funding

issues. The review committee nonetheless recommended the development of a hiring plan and a mentoring plan for mid-career individuals.

Areas of Concurrence and/or Disagreement

- In its response to the program review (Spring Quarter 2011), the department acknowledged the review committee's recommendations and had already initiated action on many of the suggestions and comments contained in the review committee report.
- For example, the department had begun addressing comments related to undergraduate majors and course sequencing, graduate students, student diversity and outreach, articulating future faculty research focus, developing a faculty hiring plan, and how to increase long-term, strategic involvement in the LSST.
- There were no significant areas of disagreement between the review committee report and the departmental response, and the department was very receptive to suggestions for making the department and its programs even stronger than they currently are.

Graduate School Council Recommendations

- The Council endorses the review committee's findings and recommendations, and would like to especially endorse the recommendation that the department continue its efforts on forward-looking strategic plans and that it makes efforts to achieve the goals it has already articulated.
- The Council recommends continuing status for the department's programs, with review in 10 years (2020-2021).

We concur with the Council's comments and recommendations.

cc: Douglas J. Wadden, Interim Provost and Executive Vice President
John Sahr, Associate Dean, Undergraduate Academic Affairs
Scott Anderson, Professor and Chair, Astronomy
Members of the Astronomy Review Committee
Members of the Graduate School Council
David Canfield-Budde, Academic Program Specialist, The Graduate School
GPSS President