



CALIFORNIA STATE UNIVERSITY, FULLERTON

Office of the Dean

College of Natural Sciences and Mathematics

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3 June 2022

TO: Su Swarat
AVP for Institutional Effectiveness & Accreditation Liaison Officer

FROM: Marie Johnson
Dean, College of Natural Sciences and Mathematics

SUBJECT: Dean's Evaluation: Department of Physics Program Performance Review

The Department of Physics conducted a Program Performance Review (PPR) in AY 2021-2022; the department's self-study, the external PPR committee report, and the Chair's response to the external review are attached to this document.

The PPR included a comprehensive review of the department's current standing with respect to programs, faculty, student support, and resources as well as an outline of long-term plans. The external review committee was comprised of three highly qualified individuals representing diverse viewpoints relevant to the Department's mission and goals. The review committee included one member from another department in the College of Natural Sciences and Mathematics (Jeff Knott, Emeriti Professor and former Chair, Geological Sciences, CSU Fullerton), one physics faculty member from a sister CSU (Andreas Bill, Professor and Chair, Physics, CSU Long Beach), and one physics faculty member from a university outside the CSU (Jennifer Ross, Professor and Chair, Physics, Syracuse University).

Program Strengths

1. **Commitment to student success.** The external committee recognized the department faculty and staff for their commitment to both undergraduate and graduate student success. In particular, the committee noted that students view themselves as physicists, appreciate the high quality advising the department provides, enjoy meaningful opportunities to participate in research groups, and receive on-going mentoring by faculty. In addition, graduate students welcome and utilize the communal graduate student space, which develops community and leads to frequent, informal scientific discussions.
2. **Student-faculty research culture.** The department was commended for its student-faculty research culture and high research productivity of its faculty members. The exceptional number of students supported financially by either federal grants or philanthropic sources was also recognized. The committee noted that faculty view themselves as equally committed to their teaching obligations and that they strive to maintain a balance between teaching and research efforts.

Recommendations

The external review committee identified nine areas of opportunity for modernizing and updating Physics department policies, procedures, and traditions. These recommendations include:

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1. **Student recruitment.** Physics is encouraged to develop a proactive student recruitment strategy for both native first year and transfer students. Such a plan can also serve to diversify the physics major student population.
2. **Undergraduate student needs.** The review committee recommended that the department reintroduce social events, reinstate the chapter of the Society of Physics Students, and provide more easily accessed flow charts of degree pathways. Tighter integration with our Career Center is also encouraged as such integration may provide students with additional employment opportunities as well as internship and undergraduate research experiences at other universities.
3. **Graduate student advising.** The committee recommended that graduate student advising be made more formalized. All graduate students should have required meetings with an advisor each term. The department may wish to develop a moderated Slack channel to relay information and build community.
4. **Teaching Associate training.** The committee suggested that the department provide guidance and training to Teaching Associates beyond simply reviewing the mechanical aspects of how a given lab is run. Such training could be focused on pedagogy as well as best practices for building inclusive classrooms. Exceptional TAs may in time obtain their Masters degrees and apply to be part time faculty members, thus improving the pool of available talent for the department.
5. **Faculty mentoring.** Physics should formalize its tenure track mentoring program and institute formal, regular meetings between pre-tenure faculty and the chair. Ad hoc mentoring is noted to have the potential to create unequal experiences for faculty of different demographics.
6. **Department Personnel Standards.** Physics has already stated their intention to undertake the collaborative work of updating its Department Personnel Standards in the coming academic year. A major focus of this work should be to develop agreed upon, holistic ways to gauge teaching effectiveness, ways that include but move beyond SOQ scores.
7. **Teaching load transparency.** The department may wish to review teaching load transparency, so faculty know what their colleagues are doing and have a sense that the workload is distributed as equitably as possible over time, if not in any one single term.
8. **Curriculum.** The department may wish to review and update the physics major curriculum to possibly include more units of math, fewer units of chemistry, and an additional course in statistical mechanics.
9. **Resources and facilities.** The committee notes that Physics is an experimental lab-based science and that a flat department OEE, relatively modest startup packages for new faculty, and small research labs hinder the future success of the department.

The Chair, in his written response, thanked the committee for their observations. He agreed with and accepted the committee's recommendations. The chair noted that some actions are already underway (reinvigorating activities for all students; reimagining course road maps; rethinking TA mentorship). The department plans to host two retreats in the coming year where they will discuss student

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recruiting, curriculum, and the upcoming Department Personnel Standards revisions. The chair also noted that the department has experienced major staff turnover and has been without two of its four staff members for many months. Stabilizing these staff positions is a must for the department to make progress on the other committee recommendations.

Summary. The Department of Physics is a tight knit, committed group of faculty and staff who prioritize student success and work together to meet their teaching and research mission. The department has concrete plans to modernize in several areas (curriculum; Department Personnel Standards; advising and mentoring of students, TAs, and faculty) and these changes will keep Physics moving forward as a highly successful, modern program. This success will be further facilitated by stabilizing staff positions and increased department resources as possible.

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