

Physics Department Response to R411 Review

Physics Department R411 Response Team:

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The external review committee provided a constructive R411 report that has three key sections for the faculty to consider. The first being entitled “Things the Department is doing well” needs no further commentary, while the second “Challenges the Department is facing” are topics the Department is already or should be working to overcome. The third “Recommendations to consider” is a set of worthwhile suggestions that would positively impact the Department. The Department R411 team finds this latter set of recommendations very constructive. Following receipt of the external review team report, the entire faculty received copies and a faculty meeting was held 18 April 2024 to discuss the report in its entirety. Six areas of the report received special attention as items the Department will proceed to address. These six items are represented as text from the R411 review report, shown in italics, followed by the Department’s intended actions in plain text.

Item 1

The faculty should develop an actionable strategic plan for the Department. All tenured and tenure track members of the Department should be engaged in such strategic planning, not just the junior members nor just the senior members. Both the energy of the junior members and the broad vision of the senior members are needed.

The faculty meeting discussion was quite animated on this topic, though all agreed a strategic plan would be essential as more than 5 senior faculty would be retiring in almost as many years. The Department annual retreat on August 16, 2024 will be dedicated to the development and directives of a Departmental Strategic Plan. To this end, a five-person strategic planning committee was created on May 8, 2024, with a charge to prepare the groundwork for the Departmental retreat discussions. To aid in this task the five members appropriately represent the research and academic areas of the Department.

Item 2

Future tenure-track hiring should be made at the assistant professor level.

The committee recommends that at least one tenure-track faculty member in experimental condensed matter physics be hired in the near future. This is not only to prevent the catastrophic scenario of the disappearance of the group, but because condensed matter is an area of physics where future growth potential and needs lie both in terms of graduate education and research

funding. An added benefit of condensed matter physicists is their ability to collaborate with others STEM faculty on campus to build interdisciplinary programs. This area should be strengthened and should be one of the focus areas of future growth.

The research group in solid state and surface physics is in danger of disappearing due to retirements. If this is allowed to happen, it would be much more difficult to rebuild the group in the future.

These challenges and recommendations reinforce the current search to fill an open position at the Assistant Professor level in experimental condensed matter physics. The search yielded a short list of 4 candidates that align well with the review recommendations. The degree to which the Department can precisely replace current expertise depends, of course, on the pool of available candidates, and may be hampered by the Department's ability to secure adequate start-up funding and/or create competitive offers.

Item 3

The majority of graduate students have no summer support. The Department should work to provide 12 months of support for all graduate students using a combination of GTA and GRA funds.

Graduate stipends are not competitive at the national level. The current living wage for a single person in Cache Valley is \$31k/y.

When it is possible to do so, funds for GRAs should be included in grant proposals rather than for postdocs or new research scientists. This would help to reinvigorate the graduate program.

The review team's statements on this topic will be discussed at both Department and College of Science levels. The first two statements clearly identify the need for fully funding 12-month GTA and GRA stipends. This would certainly make any offer for incoming graduate students more attractive as well as move the stipend 12-month value toward a "living wage" level. At the present time our offer to incoming graduate students of only a 9-month stipend (fall/spring semesters) is anomalously low and uncompetitive. The third suggestion for addressing the stipend issue will be encouraged as research proposals are being prepared.

Item 4

Academic credit or pay should be given for all semesters that undergraduate students are engaged in research.

This issue needs to be investigated and workable solutions found. Although most upper division undergraduate physics majors are either in a research class (PHYS 4900) or working in research groups receiving wages, there are first- and second-year students receiving neither credit nor wages who are exploring research possibilities with faculty.

Item 5

One member of the teaching faculty does not have an appropriate position and the number of courses he teaches each semester is unreasonably high. We recommend the Department consider appointing him as a Lecturer or hiring someone into such a position.

The review team's recommendation provides much appreciated support for the redistribution of teaching loads and highlights the potential advantages of getting additional lecturers in the Department. The appointment of the faculty member in question to a lecturer would be very appropriate and go a long way to providing excellent teaching of service classes.

Item 6

The course offerings at the freshman undergraduate level could be streamlined. The Department could stop offering some non-essential courses and combine others. The teaching capacity that would be freed up in this way could be used to offer elective courses for upper division undergraduate physics majors and/or graduate students.

The Department's current undergraduate course offerings were developed around 1998 (!), when the method of instruction moved from quarter to semester offerings. It is time to review/revise the course offerings. The review and revision of the Physics Department's course offerings will be an integral element of the strategic planning committee's charge. The Strategic Planning Committee includes the Department's Principal Lecturer who will provide important expertise on the Department's service and general education offerings.