Physics PPR 2015
Chair Response to External Review

The three members of the department's PPR external review committee brought broad perspective and a diverse array of experiences to the process. The committee members were:

- Andreas Bill, Professor of Physics, CSU Long Beach, has wide-ranging experience as a teacher, researcher and chair of a similar-sized physics program at our sister CSU campus.
- Allen Landers, Professor of Physics, Auburn University, has considerable expertise in research in basic science as well as teacher education at an R1 institution.
- Binod Tiwari, Associate Professor of Civil and Environmental Engineering, CSUF, has international renown in geotechnical engineering and brought perspective as a member of another CSUF college.

We much appreciate the effort and wisdom the review committee extended us and the opportunities and challenges they identify in their review. I have attached below their *Executive Summary Concerns and Recommendations* and threaded my response and comments in where appropriate.

Jim Feagin
Professor and Chair of Physics
January 2016

EXECUTIVE SUMMARY CONCERNS

The committee is aware of the resource challenges faced by University administration, particularly in the areas of space, service personnel, startup funding and tenure-track positions. Within that context, we find the following concerns should be addressed:

- There are currently two technical staff in the Department, whose roles can be defined broadly as 1) an undergraduate laboratory coordinator and 2) a service course demonstration coordinator. However, they perform substantially more functions including computer technical support for the Department, purchasing for research groups, and maintaining/developing teaching experiments for the undergraduate majors laboratories.

  Feagin response: The department's rapid growth especially over the past four years in our service courses has significantly stretched the limits of our two instructional techs. Historically, before 2009, we taught some 40 labs per week in three MH 6th floor facilities. We currently offer almost 80 per week in 6 facilities in both McCarthy Hall and Dan Black Hall, and almost all of these labs are now

taught by TAs, which need ongoing instructional-tech supervision. Before 2009, TAs had never taught our labs. Before 2013, we never offered summer courses—now we're teaching a full schedule of introductory physics. One of our techs resigned without warning this past fall after eight years of service. Fortunately, we have been able to hire a replacement. Our labs, TAs, and the instructional needs of faculty across the department are simply outpacing the capabilities of our two instructional techs.

- The Department Chair currently holds a 9-month appointment only. It is the committee's understanding that Physics has the only chair in the College without a 12-month appointment, which is clearly warranted in light of recent growth and success.

  Feagin response: My position as chair was converted to a 12-month appointment last June 1, 2015, as I began a third 3-year term.

- Physical space for offices/laboratories for new faculty is inadequate. Similarly, space is missing for students teaching assistants and performing thesis work. Even though the Department is flourishing and growing, the space in which it is housed hasn't grown commensurately. If the department undergoes further expansion (by ~3 faculty) to incorporate an astronomy major, the space situation will become untenable.

  Feagin response: Agreed. We continue to be frustrated with the shortage of space across the college, which has been exacerbated by our own considerable growth on all fronts the past few years while the other departments in the college have suffered decline.

  Classroom access across the college continues to be based on a 10+ year-old CNSM allocation plan. We have partial first dibs to just two classrooms in McCarthy Hall. We had first dibs to MH688 and 689 until they were converted to new biology labs last year. Every other department in the college has first dibs on multiple classrooms. Our college master allocation plan needs to be revisited to ensure fairer distribution of classrooms—a promise I've heard from three deans now.

  Regarding the severe shortage of good lab space across the college, I would like to note that almost every classroom in McCarthy Hall is laboratory ready as far as physics is concerned, i.e. the plumbing and electrical is ready to plug into. We would only require lab benches to replace the current student desks.

- The committee understands that the operational expenses (OEE) has not grown to accommodate the increased activity and productivity of the Department, with baseline OEE remaining fixed for ~6 years.

  Feagin response: Our baseline OEE (PT blanket aside) has been flat for the past six years. We did, however, receive from the college some $150K in one-time support over a two-year period 2012-2014 to expand our introductory physics laboratories to eliminate bottlenecks in our lower-division service courses and better accommodate our enormous growth in FTES (150 per semester in 2009 to ~450 currently). We also used in that same period some $150K of Dan Black philanthropic funds for additional instructional laboratory instrumentation.

  Four years ago, we taught no summer courses, now we teach several introductory physics sections and their labs. For the first two summers 2013 and 2014 we received a direct UEE supplement of about $30K/year to our OEE. Since then the UEE money we generate goes to the college and our OEE has remained flat at our 2009 level. We need a direct agreement with UEE to cover our summer expenses without penalizing our academic-year OEE budget. The university also needs to recognize the FTES funding we lose over the summer.

  We are currently spending an additional ~$20K per year on SAs that we didn't need four or five years ago to ensure our techs and coordinators can meet the growing workload of the department. This diversion of OEE $$ has meant that replacement lab equipment and repairs has mostly been put on hold for roughly the past three years.

- Experimental physics (for both teaching and research) requires the capacity to build instrumentation in house, yet the Department's machine shop access is severely limited, causing a *critical* bottleneck in productivity.

  Feagin response: The two colleges CNSM and CECS should establish a faculty/staff advisory committee to revisit our MOU written over 10 years ago governing the university machine shop and the allocation of its resources.

- Some faculty indicated limited access to research journals. Considering the high research activity level in the Department, this should be addressed.

RECOMMENDATIONS

With the above concerns in mind, the committee makes the following recommendations:

- Hire 1 additional technical staff to support the instructional and research needs of the Department.
- Convert the existing Department Chair appointment to a 12-month position.

Feagin response: Done. See my comments above.

- Provide additional space for instruction and research that is commensurate with the current and future scope of th

Feagin response: The department is currently searching for a new full-time faculty member in biophysics, who can demonstrate an intrinsic overlap in establishing collaborations across the college. Until 2009, the department had an historical average of about eight full-faculty and five adjunct faculty with no TAs. In the past six years, we have 13 full-time faculty and 11 adjunct faculty and some 20 TAs. In the same timeframe, our footprint in McCarthy Hall has shrunk considerably. See also my comments above.

- Fully support the operational budget (OEE) of the Department so that non-fixed resources such as indirect cost recove (e.g. Dan Black) can be appropriately reinvested into further developing the missions of teaching and research, particularly demonstration/instructional equipment and faculty research startups.

Feagin response: See my comments above.

- Immediately solve the problem of machine shop access through a meeting with the Deans of both Colleges involved, appropriate faculty, and machine shop personnel.

Feagin response: See my comments above.

- Consider further growth in the Department with the addition of an astronomy major. The increased number of student majors can be well absorbed by a growth in the tenure and tenure track faculty, particularly because of overlap with existing courses.

Feagin response: We have submitted our request for an Astronomy Major to Curriculog, which has CNSM approvals and is currently with Peter Nwosu.