Materials linked from the November 6, 2015 Graduate Council agenda.

Review by Graduate Council representatives Sourabh Apte and Jim Coakley.

MS, MEng, PhD Degree in Bioengineering (Jim Sweeney, Adam Higgins, Joseph McGuire, Irem Tumer, Joe Baio)

Inputs:
- The mission of the program, and its relationship and alignment with the mission of the academic college(s), Graduate School and university mission
  Where: Section 2 of Cat I
  What: Thoughtful response as to how new program supports mission of college, university and state.

Interdisciplinary training in bioengineering, complementary to existing graduate programs focusing on health sciences, molecular/cellular biology, pharmacy and other bioscience-based fields. This program will facilitate growth of bio-science based industries, create an organizational infrastructure developing students and faculty in bioengineering and other life sciences units.

- Recruitment and enrollment trends of students
  Where: Section 1 e, f, g, h; Section 4a (Need)
  What: Are the plans to recruit students, including under-represented students, adequate? Does the market analysis in section 4 align with projected enrollment?

The plan is to admit eight students per year into each of the three programs: MEng, MS, and PhD, with the goal of increasing enrollment in PhD program starting fourth year and onwards.

The program will seek to recruit students nationally and internationally (75% US and 25% international expected). The program will be advertised through traditional channels such as brochures, mailing and our website. Underrepresented students will be encouraged to apply for admission in all recruiting materials and efforts are made to provide financial aid to all qualified underrepresented students. Mailing lists from the McNair Scholars Directory, the California Forums for Diversity in Graduate Education, the Society for the Advancement of Chicano and Native American Students and other appropriate sources will be used to advertise the degree offerings.

There is need for the program based on student interest and since there isn’t any other program in Oregon (other than one at OHSU).

- Admissions selectivity and other indications of selecting high quality students
  Where: Section 1 e, h
  What: Admissions requirements and process. What is basis for selection?

  The minimum GRE score is 1100 (combined verbal and quantitative). For international students, the minimum TOEFL score is 580 (or iBT of 18 on each section). GRE exams are required for all applicants except those with degrees from the College of Engineering at OSU.

  Does not address basis for selection.

- Level of financial support of students compared to peers
  Where: Section 1 f, Section 7
  What: Given expected number of students, have they adequately budgeted to support them.
We anticipate that the vast majority of graduate students will either be supported as GTAs or GRAs. Each School within the COE will be able to offer GTA positions to bioengineering graduate students using their existing budget, using criteria established by the School. CBEE recruitment model will be leveraged for recruiting in BioEng. CoE has committed $50,000 for next two years.

- Curriculum strength
  Where: Section 1c, Section 6
  What: Proposal meets minimum university requirements:
    Master: http://catalog.oregonstate.edu/ChapterDetail.aspx?key=39
    Doctoral: http://catalog.oregonstate.edu/ChapterDetail.aspx?key=40
  Make sure slash courses are annotated to ensure program meets minimum 50% rule.
  Be leery of multiple new courses – If we presume that most departments are fully utilizing their faculty resources to deliver current programs, how are they going to develop and deliver new courses?

  Develop four standalone 500 level courses to be part of the core. One is brand new, the other three build on existing undergraduate courses.

- Quality of personnel and adequacy to achieve mission and goals
  Where: Section 1 I, Section 7
  What: University guideline requires minimum of five professorial FTE to support a graduate program. Do they have adequate faculty and budget? Ask for graduate faculty level of appointment?

    As an interdisciplinary program, they list a wide variety of qualified faculty who will participate. In addition, several new faculty searches are underway in CoE which may also participate if their area aligns with BioEng.

- Level and quality of infrastructure
  Where: Section 1l, Section 7b
  What: Are identified facilities and unique resources adequate?

    Use existing facilities. Leverage Microproducts Breakthrough Institute, Center for Genome Research, Biocomputing etc. New building (Johnson Hall) for CBEE is being built with completion in Fall 2016, which will be leveraged as well.

Productivity:

- Publications or evidence of other scholarly work by faculty
  Where: Section 1j, section 5d
  What: Is the research productivity of the faculty appropriate to support the degree. That is, for PhD and MS degrees, we would expect a minimum of five FTE of research-active faculty directly supporting the program.

    More than adequate -- see Appendix 1 of proposal

Outcomes and Impacts:

- Potential for placement and success of graduates
  Where: Section 4
  What: Evidence of demand for the graduates.
Are there duplicate programs in Oregon? If so, what differentiates this program and how will they compete for students and placement opportunities?

Section 4 provides compelling argument for need of graduates from this program. The only other program related to this is at OHSU. There is letter from OHSU showing their support for BioEng at OSU. The impact on OHSU will be minimal as there is lot more demand for this program than available seats at OHSU.

- Assurance of Learning
  Where: Section 5
  What: We prefer completion of the Graduate Program Assessment plan.
  Ref: http://gradschool.oregonstate.edu/faculty/program-assessment

Graduate Program Assessment Plan matrix is complete for all three degrees (MS, MEng and PhD).