November 24, 2014

Graduate Faculty Executive Committee (GFEC)
Graduate School
University of Wisconsin-Madison

Dear Committee Members,

I am writing in response to your letter of July 13, 2014. I was under the impression that Associate Dean Kramer had communicated a response to you at that time but I will respond here to your letter directly. Your letter generally states:

“The GFEC identified the overall need of the program to improve coordinated planning and oversight for global program goals such as a review of core course options; increased participation from outside departments; common practices for student advising; consistent mentoring for preliminary exams; and greater equity in TA assignments.”

In general, it is difficult to address these comments without being given more specific information as to the underlying motivation for them. I will therefore address the specific comments:

1. For example, the GFEC felt the program should consider increasing the breadth of course options available particularly in the area of biological engineering. In turn, a coordinated review of the program curriculum for breadth and frequency of graduate level offerings may be warranted.

We have, at present, as graduate options, in the biological areas.

CBE 517: Biology in Engineering Seminar
CBE 520: Stem Cell Bioengineering
CBE 560: Biochemical Engineering
CBE 561: Biomolecular Engineering Laboratory
CBE 782: Modeling Biological Systems
CBE 783: Design of Biological Molecules
CBE 562: Biol. Engineering, Molecules, Cells & Systems
CBE 562: Molecular Modeling
CBE 915: Computation and Informatics in Biology and Medicine
We also allow the students to form a minor from courses outside the department at the graduate level throughout the College and campus offerings. This is typical 4 additional courses. Given the size of the faculty and graduate student population, the faculty has discussed and agreed that the number of current number of courses and the rotation of classes meets everyone’s needs. We continually review the scheduling and availability of courses for the graduate students. It should be noted that the College of Engineering has experienced a large increase in undergraduate enrollment over the last two years. With no added support from campus, this puts additional pressure on the faculty to make sure the undergraduate program is sufficiently administered. As a result, sometimes graduate course offerings have not been as regular as we had wished.

2. Likewise, the program could benefit from increased involvement of faculty from outside the department to add additional breadth and more diverse perspectives to students’ research. Again, this may be particularly valuable in the emerging area of biological engineering.

At present 11 of the 18 faculty (over a majority) having ongoing research programs with a biological component covering the range of biologically relevant fields in chemical engineering. The department is clearly in the heart of biological research at present. This large breadth and depth of the biological research in the department is augmented by three “zero time” appointments in the department which have added to the graduate opportunities for research within the department. Given that the department is ultimately responsible for the financial support of the students, we have been careful to make sure that research mentoring of our students and their progress towards degree, including financial support, is agreed-upon with these faculty. All members of my department have existing collaborative grants both within the college and, for many of the faculty, outside of the College of Engineering. This culture of extra-departmental collaboration brings a remarkable depth and breadth to the students’ education and regular exposure to faculty outside of the department. The research collaborations and centers, which are both led and participated in by our faculty, naturally lead to a diverse experience to the students’ education. I believe our research environment is among the most interdisciplinary, diverse and collaborative within the college.

3. In addition, to ensure timely graduation and a positive student experience, the department should consider a program-level commitment to institute regular advisor-student meetings as well as the use of advising compacts or individual developments plans.

At present, we have reviews by a mentoring committee for each student at the time of prelim which is within the fourth semester, an additional review at the end of the eighth semester, and additional reviews when requested by the student or faculty member. I believe all the faculty members in my department have regular, typically weekly, research meetings with each student individually as well as a group meeting. While there is no “policy”, this is standard practice and culture within the department.

4. There also was concern about the lack of consistency in the preliminary exam process. The GFEC recommends that the program develop a coordinated approach to monitor the preliminary exam process to ensure consistent and equitable mentoring.
We have heard these concerns and have reviewed and acted on them. The faculty as a whole administers the preliminary exam process. Faculty committees are assigned for each preliminary exam and the results of each exam discussed. Recommendations from these faculty committees on a student’s performance on the exam discussed and decided by vote of the executive committee. We have discussed and reinforced the policies and procedures of advisor-student mentoring in the prelim process at each faculty meeting prior to the period of time when these exams are held. If the GFEC committee has specific additional concerns that can be communicated, I would greatly appreciate it and would address them with the faculty.

5. Finally, the GFEC was concerned by the high degree of variability of student effort in teaching assistantship (TA) assignments. The GFEC recommends that the program develop a coordinated process to determine how to make these TA assignments more equitable and balanced among the different courses and professors. Student input may be useful in this evaluation process.

As courses differ, there is a natural variation in TA workload. We have discussed the variation in TA workload as a faculty and have tried to address the issue by adding additional student grader positions to offload some of the work from the TAs. The statement in your letter assumes that we do not have a coordinated process to make TA assignments in an equitable and balance way. Needless to say, we have a TA coordinator in the department and strive to fit students with positions, adding resources to help in the instruction of the course. The department does have a two-semester TA requirement for all graduate students. As with such service positions, occasionally neither the student nor the faculty member are pleased that the student spends time as a TA. Students who are motivated as a TA tend to spend more time and those less motivated always believe that they spending too much time. This is a difficult problem because it is based on perceptions and individual behaviors. We do meet regularly with the graduate student association (CHEGS) where such issues can be discussed and potential corrections made.

I hope the above statements respond adequately to the concerns of your committee. I think you for the work done on our behalf.

Sincerely,

Thomas F. Kuech, Chair
Milton J. and A. Maude Shoemaker and Beckwith-Bascom Professor
Department of Chemical and Biological Engineering
July 31, 2014

Professor Tom Kuech
Department of Chemical and Biological Engineering
2006 Engineering Hall
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Tom

Dear Professor Kuech:

As you know, an important part of the university’s ongoing review process is the vetting of graduate programs by the Graduate Faculty Executive Committee (GFEC) of the Graduate School. When the College of Engineering assembled a review committee to conduct a decadal assessment of the M.S./Ph.D. in Chemical Engineering, a member of the GFEC was asked to join the committee and was given the responsibility of attending to graduate training issues of particular interest to the Graduate School. That individual was Kevin Shinners who led a discussion of the review at the GFEC meeting on December 13, 2013. In this letter, I summarize the committee’s response.

The GFEC response to the report was generally favorable, recognizing the graduate program’s positive national reputation and strong employment opportunities for graduates. However, the GFEC also had some concerns. Given that time has elapsed since the self-study and review, we realize that the department may have already begun to address issues identified in the review; however, the GFEC raised the concerns below and would like to receive an update from you on progress by December 2014.

The GFEC identified the overall need of the program to improve coordinated planning and oversight for global program goals such as a review of core course options; increased participation from outside departments; common practices for student advising; consistent mentoring for preliminary exams; and greater equity in TA assignments.

- For example, the GFEC felt the program should consider increasing the breadth of course options available particularly in the area of biological engineering. In turn, a coordinated review of the program curriculum for breadth and frequency of graduate level offerings may be warranted.
- Likewise, the program could benefit from increased involvement of faculty from outside the department to add additional breadth and more diverse perspectives to students’
research. Again, this may be particularly valuable in the emerging area of biological engineering.

- In addition, to ensure timely graduation and a positive student experience, the department should consider a program-level commitment to institute regular advisor-student meetings as well as the use of advising compacts or individual developments plans (IDPs). The program can learn more about IDPs here: http://grad.wisc.edu/pd/idp/.
- There also was concern about the lack of consistency in the preliminary exam process. The GFEC recommends that the program develop a coordinated approach to monitor the preliminary exam process to ensure consistent and equitable mentoring.
- Finally, the GFEC was concerned by the high degree of variability of student effort in teaching assistantship (TA) assignments. The GFEC recommends that the program develop a coordinated process to determine how to make these TA assignments more equitable and balanced among the different courses and professors. Student input may be useful in this evaluation process.

The above concerns notwithstanding, the GFEC is pleased to accept the report of the Review Committee. We encourage you to explore the recommendations in the report and request that you report back to the GFEC in writing no later than December 2014 regarding your thoughts and efforts to address the above recommendations.

Sincerely yours,

[Signature]

Martin Cadwallader
Vice Chancellor for Research
and Dean of the Graduate School

Cc: Ian Robertson, College of Engineering
    Steve M. Cramer, College of Engineering
    Susan Hagness, College of Engineering
    James Rawlings, Director of Graduate Studies in Chemical Engineering
    Kathy Heinzen, Graduate Program Coordinator in Chemical Engineering
    Donna Paulnock, Graduate School
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