

Dean's Response to the Program Review of the Mathematics Program

July 31, 2013

I greatly appreciate the thought and effort that went into the report from the Program Review Team, as well as the self-study and report response by the Mathematics Department.

During this review cycle, I requested that departments select external reviewers without any ties to the department in order to ensure the most objective review possible. The Mathematics Department is to be commended for selecting reviewers who met these criteria and also comprised a strong representative cross section of disciplinary professionals. The Mathematics Review Team was the first to visit Weber State during this particular review cycle. During their visit, I discussed some specific questions that I felt would help guide the evaluation, and assured each Review Team that their honest and objective observations, responses, opinions and suggestions were expected. Consequently, the corresponding report reflects solely the views and opinions of the reviewers, and it appears to be thoughtful and comprehensive in its assessment of the Mathematics program at Weber State University. Having said this, I note that because this review was the first of this cycle, the Review Team report lacks details – including a SWOT analysis – that are typically contained within later COS Review Team reports. Nonetheless, the Review Team report does identify a number of programmatic strengths, weaknesses, and areas for suggested attention or improvement.

In their report, the reviewers identified a number of strengths, including

- the expertise, strong student focus, accessibility and dedication of the Mathematics faculty and staff
- attention to service courses and success in achieving relatively high pass rates of C or better in Math 1050 and Math 1210
- success in attracting and retaining majors who started in Math 1050
- strong connections to the K-12 educational community

The department response acknowledged these strengths as well. For the most part, I too agree with the strengths noted by the reviewers.

The review team also identified three areas of concern, which may be categorized as “resources,” “advising,” and “adjunct management.” The review team also made a series of seven distinct recommendations, to which the department responded, and that I address, below:

1. Resources: *The Review Team noted that “The most pressing challenge facing the Department is the need for extra faculty resources. We urge the central administration to take this seriously.” The department agreed with this statement and noted that it makes yearly appeals for extra faculty to teach courses at all levels and foster cross-disciplinary programs. Furthermore, the department noted that they lost two faculty at the end of the 2011-2012 academic year. However, they have hired one replacement faculty member already, and have been given approval to begin an early search for an additional faculty member during the Fall, 2013, semester. As of this reply, the Dean’s office has not yet received a strong justification from the department to define an area of specialization for a new hire. This is a critical component that must be defined before the search can move ahead, and should be based on the university mission, our student demographics, and the needs of our regional service area.*

The department response discusses two ways in which the need for additional faculty could be addressed. The first is to hire contract faculty to teach 15 hours of lower level courses. The department response discusses five separate disadvantages that might arise from such a path. The second avenue is to simply hire additional tenure-track faculty. To address the latter first: there simply do not seem to be adequate resources within the university to hire more tenure-track faculty for Mathematics at this time. As to contract faculty: I do not agree with the department’s assessment that only negatives can be associated with such a path forward and am willing to discuss this option in more detail with them. Regardless, given a strong rationale from the department, I am willing to discuss either path with them and with the Provost to determine if additional resources might be identified and targeted. Moreover, I think that other

alternatives might also be possible and should be discussed. In any event, I strongly recommend that how the department chooses to move ahead should not be based on the past or present, but most importantly, should be based on a strong strategic plan that I discuss in more detail, below.

2. Pursue External Grants: *The review team recommended that the department should pursue external grant support (e.g. NSF Noyce, etc.) and that release time, and appropriate training should be provided to facilitate this. The department response indicates some agreement with this recommendation, but also identifies some perceived issues related to moving more in this direction. I agree with the review team that by moving to secure external funding, the department can help itself, and more importantly, help its students tremendously, and I recommend that the department faculty should begin to expend more effort in seeking external support. External grant programs like NSF's Noyce, S-STEM, Math-Science Partnership, and Research Experiences for Undergraduates should be considered, and have the potential to positively impact the program significantly more than research grants to individual faculty members, although these are encouraged as well. I have and will continue to offer release time to faculty who wish to develop and submit competitive grant proposals, and note that writing and submitting competitive proposals for external funding has been an expectation of recent hires across the COS as noted in their contract letters. I am also willing to discuss with the department how my office can, within our own workload and financial constraints, help to facilitate additional grant writing activity among the members of the mathematics faculty.*
3. Increase Advising: *The review team recommended that personalized advising to students should be increased for purposes of recruitment and retention, and recommended that undergraduate majors be enlisted to help with such efforts. The department response indicates that they have instituted a program which assigns each math major to a particular faculty advisor/mentor. This is highly commendable, and the challenge to the department will be to ensure that all faculty take this charge and responsibility seriously. I do not agree with the suggestion that undergraduate majors be involved in any type of formal advising, given potential issues (including legal ones) that may arise from misadvisement. Nonetheless, I do see some value in using majors as "ambassadors" to spread the good word about math throughout Weber State and local K-12 districts, and recommend this to the department for their consideration. Moreover, I strongly recommend that Mathematics, like all COS departments, should make the improvement of student advising and student retention a strong priority. To this end, I am willing to work with the department to identify ways in which advising that leads to improved recruitment and retention can be better facilitated. In saying this, I note that many of the NSF programs mentioned above in (2) can provide funding to help support such endeavors.*
4. Alternative Approaches in Gateway Courses: *The review team recommended that "...faculty should be encouraged....to pursue alternative approaches to these courses..." The department response notes that "many faculty are trying new things...", and that "discussions will continue to take place about the effectiveness [of different pedagogical approaches]" The department's actions and response are commendable, and I urge the department to continue to build on their efforts, given that our mission as a dual enrollment institution provides faculty, such as those in math, with a unique demographic for pursuing research related to developing, implementing, and evaluating the efficacy of new pedagogies. This could prove to be a valuable research focus for the department. I am willing to discuss how my office can help to facilitate additional efforts in this area and, again, urge the department to consider adopting pedagogical research and innovation as a department priority. Furthermore, I agree that extending pedagogical training, research and evaluation to adjuncts must also be a priority, and I am willing to work with the department and the upper administration to identify and secure funding to support such efforts.*
5. Exams: *The reviewers recommended that the department consider implementing uniform final exams and possibly uniform midterm exams in courses through Calculus I. They also recommended that the department should consider using multiple-choice questions for some portion of the exams. I agree with these recommendations. The department response notes that a course coordinator might be needed to facilitate the implementation of uniform exams, and points out a number of additional perceived problems. At the same time, the response notes that "multiple choice questions on some portion of the exams would ...reduce the work of grading." In this vein, I challenge the department to take the reviewer's recommendations seriously and attempt to devise innovative solutions that will maintain the appropriate*

level of student learning, provide better consistency across all sections of a given course, utilize technology effectively, reduce faculty workload, and accomplish all of this without requiring additional resources. Common evaluation instruments can be devised rather painlessly and I am aware that the educational literature contains numerous examples and best practices that could be adopted or adapted to address the challenge made above. I am willing to discuss these topics with the department should they wish to do so.

6. *Mentoring New Faculty: The review team recommended that the department should consider instituting appropriate procedures for the orientation of new contract/adjunct faculty. I consider such a recommendation to be critical for new tenure-track faculty members as well. In their response, the department noted that new procedures for mentoring new regular (T-T) faculty were instituted last year, and that mentors were to be assigned from among the senior faculty. I find it commendable that the department has instituted these policies, but suggest that the department should consider assigning faculty – who have most recently navigated the tenure process successfully – to serve as mentors for pre-tenure faculty. Moreover, I strongly recommend that the department chair should consider assigning a consistent set of courses to regular faculty during their pre-tenure period in order to allow them to adjust to our students and to demonstrate their ability to improve student learning through time as a result of ongoing formative evaluation. With respect to the review team recommendation, I have already informed the Mathematics Chairperson that I am willing to provide release time for an Assistant Chairperson to assist with training and providing oversight of the adjunct faculty in the Math department. I consider the mentoring of new, early-career faculty to be a high priority for all departments within the COS, and I remain willing to work with the department and the administration to identify mechanisms to help ensure that our investments in early-career tenure-track faculty are successful.*
7. *Strategic Planning: The review team recommended that the “department would benefit from a better strategic plan with clear priorities.” The department response indicated that the strategic plan was revised during the last year, and that discussions to improve many aspects of the program are ongoing. I strongly recommend that the department should continue to develop a unified and robust strategic plan that addresses the dual mission of Weber State University, our student demographics, the broader needs of other university programs, and the needs of regional government, business, industry, and other stakeholders. To this end, I also strongly recommend that the department establish an external advisory board composed of representatives of various stakeholder groups who can inform and advise the department as it develops its strategic plan. I stand ready to help the department in this regard, and recommend completion of the strategic plan not later than the end of the 2014 Spring semester, at which time it should be submitted to the Dean for review.*

Finally, I recommend that the Mathematics Department undergo a full program review again during the 2015-2016 academic year. Beyond that, a return to the five-year cycle is anticipated.

David J. Matty
Dean, College of Science