

Overview/Introductory Statement

It was an enjoyable experience to serve as an External Review Team for the Department of Mathematics at Weber State University. The team consisted of Peter Alfeld (University of Utah), Derek Hein (Chair; Southern Utah University), Hugo Valle (Weber State University) and Violeta Vasilevska (Utah Valley University). The Review was conducted virtually from February 11-12, 2021. The primary purposes of the External Review were addressed; namely, to 1) review the content of the program to ensure that it is consistent with high standards and practices within the discipline; 2) review resources (faculty, facilities and selected budgets, such as travel budgets) to ensure that they are consistent with supporting a quality program; 3) identify strengths and weaknesses of the program; 4) note any concerns or recommendations about the rates of recruitment of new students, placement of graduates and sensitivity to community and professional needs; and 5) review sufficiency of the evidence of student learning.

During this process, we were able to visit with the Department of Mathematics' administration, faculty and students. We visited with several faculty members, Department Chair Sandra Fitel-Akelbek, and former Department Chair Paul Talaga on Thursday, February 11, 2021. We also visited with a few students, Administrative Assistant Debi Larson, and Dean Andrea Easter-Pilcher on Friday, February 12, 2021. We were provided with the Department's Self-Study and Executive Summary documents. Department Chair Fitel-Akelbek was extremely helpful in coordinating the entire process.

Program Strengths

- Class sizes are small. (Standard A – Mission)
- Undergraduate research is noted as an important element in the department, as is involvement in interdisciplinary projects within the college. The faculty have exhibited willingness to practice teaching innovation; there have been adjustments to teaching styles to address pandemic difficulties. Also, the university has been adding new programs (such as Engineering) in response to student demand. The applied math degree has been adapted to accommodate computer science students. Course scheduling appears to be satisfactory to everyone. No bottlenecks in scheduling were identified. Plus, Independent Studies are available to students for individual circumstances. (Standard B – Curriculum)
- We note that keeping a cap at 25 for enrollment of online students is impressive. (Standard C – Student Learning Outcomes and Assessment)
- Matt Ondrus is performing well as the advisor for all departmental majors. Students feel that the course placement they are receiving is appropriate. (Standard D – Academic Advising)
- We noticed that the faculty appear to get along very well with each other. We observed no criticism in the department between colleagues. Especially impressive is the appreciation exhibited by different subsets of the faculty for other subsets. For example, the mathematics education faculty express high appreciation to the pure mathematicians, who in turn appreciate the applied mathematicians. Faculty report that their students are of good quality. The department has been successful in attracting and retaining well-qualified adjunct instructors. The faculty are conscientious and effective overseeing the adjuncts'

syllabi, exams, etc. The expectation of one publication per year for each faculty member is commendable if it can be met. (Standard E – Faculty)

- Both department faculty and students communicated excellent support from the Department program, especially from Department Chair Fital-Akelbek. Support for new faculty is also good. There are sufficient funds available from department, college, and university sources to support faculty travel and professional development activities. There exist university- and college-level professional development and technology training opportunities. Students report that faculty are sensitive to students' needs (especially with respect to returning emails), and that they are responsive and supportive to students' requests (e.g., for letters of recommendation). The department cares about its students. (Standard F – Program Support)
- There exists a good relationship with the mathematics teachers in the community. The Department is offering various professional development opportunities for these teachers. The University administration has identified the Department of Mathematics as the best department for working with the community and meeting their training needs. (Standard G – Relationships with External Communities)
- Recently reworked RTP documents recognize diverse faculty activities. Sandra Fital-Akelbek is universally recognized as being successful, supportive, and effective as department chair. She has improved the relationship with Developmental Math. She is willing to work with other colleges, and she is perceived as professionally collaborative. Indeed, the relationship with EAST has reportedly improved tenfold in the last two years. Sandra is receptive to other college's needs. Likewise, the new Dean is universally appreciated. Dean Easter-Pilcher is receptive to the needs of the faculty. In particular, she is supportive of their funding requests. (Standard H – Results of Previous Program Reviews)

Program Challenges

- WSU is an open enrollment university; sometimes the department sees poor student preparedness levels. Also, more support for students is needed to help them transition to teaching in the "real world". (Standard A – Mission)
- Concurrent Enrollment is burdensome to the faculty. (Standard B – Curriculum)
- Students identified a lack of student research opportunities. Perhaps placement in other institutions' REUs would help them professionally. Certainly more undergraduate research opportunities at WSU would serve the students better. Faculty are rightfully concerned about the low 67% pass rate in pre-Calculus. (Standard C – Student Learning Outcomes and Assessment)
- Advising duties are heavy and overwhelming. With the increasing number of students, more advisors are needed. (Standard D – Academic Advising)
- Department faculty feel indirect pressure to volunteer for extra projects. Faculty carry a high teaching load and feel that their time is very constrained. They have no time to take on extra projects suggested by the administration, even for extra pay. The expectation of one publication per year for tenure/promotion may be too demanding in some cases. (Standard E – Faculty)
- Recently added programs (such as Engineering) at present do not have the faculty to support them. Indeed, the faculty feel overworked; more faculty members are needed to

support local teachers. The department needs more financial resources to support their faculty. More than one person noted the need for two more faculty to support the Statistics and Engineering courses. The department is supported by just one administrative staff member who also has advising duties outside the department. This appears inadequate for the size of the department. (Standard F – Program Support)

- More faculty members are needed to support local teachers. (Standard G – Relationships with External Communities)

Recommendations for Change

- *Create more opportunities for student research*, such as Research Experiences for Undergraduates (REU), undergraduate research opportunities, and internship opportunities with local businesses and industries. (Standard C – Student Learning Outcomes and Assessment)
- *Hire a dedicated advisor* for the Department. With increasing numbers of students, more advisors are needed. This would allow Matt Ondrus to spend more time engaging in teaching and research activities. (Standard D – Academic Advising)
- *Hire more faculty*. Two more faculty members are needed for statistics (to support current course offerings and the growing demand in the new Data Science degree), one more faculty member is needed for applied math (especially to support the growth in Engineering and to address increased summer demand), and one more faculty member is needed for mathematics education (to support growth in the near future). We note that the growth of the student body is outpacing the growth of the Department’s faculty to support it. (Standard E – Faculty)
- *Create more support for online teachers* to teach remotely with effectiveness. Expand the university’s professional development offerings with College and Department training sessions for effective remote delivery of course content. (Standard F – Program Support)
- *Administrative support for the department should be increased*. Currently there is just one support staff member who is extremely competent, engaged, and energetic, but also overworked. (Standard F – Program Support)
- *Resources should be provided to hire more faculty members* to support the increasing student enrollments in engineering and in statistics. As has been noted, there is a need for an increase in budget to hire faculty to support the increase in engineering students’ math courses. Administrators identified the need to implement more high-impact practices in the department as well as the need to improve the 67% pass rate in Pre-Calc. (Standard H – Results of Previous Program Reviews)

Additional Recommendations and Comments

- With the current trend of growth in student numbers, perhaps creating an interdisciplinary Master’s degree would be beneficial. We recommend that the Colleges of Science, EAST and Business explore this potential future degree offering. (Standard A – Mission)
- The Department of Mathematics has an expectation of one publication per year for tenure/promotion. Perhaps this is too high a level of scholarly activity, given the high service and teaching demands placed upon the faculty. It may be appropriate to reduce the

teaching load of individual faculty who are particularly active in research and other scholarly work. (Standard E – Faculty)

- Administrative Assistant Debi Larson has recently completed a new professional certification. She is therefore even more valuable to the Department. We recommend that she be given a raise. (Standard F – Program Support)

Our overall impression of the Weber State Math Department was that of a harmonious, engaged, and effective community of professionals that, however, appears to be stretched too thin in its many activities and objectives.

We hope that this External Review will help Weber State University with the assessment of the program as well as accreditation outcomes.