

**External Review for the
Department of Mathematics
California State University, Fullerton**

Prepared by

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Based in part upon a campus visit on September 12, 2019

The review committee received and read the Program Performance Review for the Department of Mathematics, as well as additional supporting documentation. In addition, the committee spent September 12, 2019, meeting with various stakeholders within and outside the department. The following conclusions are based upon these documents and experiences.

Commendations

Undergraduate research is strong, and is supported by the department retention, tenure, and promotion (RTP) guidelines. Activity of students and of faculty at conferences, in journals and book publications, is very high. This is contagious and the student demand for research opportunities is high. Undergraduate research, in particular, has over the past five years become a major part of the department's identity. Summer undergraduate research programs and their external support are outstanding.

The RTP process, support, and guidelines all appeared as strengths within the department. Tenure track faculty commended the RTP guidelines for their clarity, in addition to the support expressed for undergraduate research. Faculty also felt that there was at least modest support for research and travel. Travel by math faculty to math conferences is vital for their identity and belonging in the field. Faculty feel that their research is supported through the small amount of travel support from the department and that it is crucial to research productivity and morale for the University to advocate that this funding is a real, sustainable priority that is intimately tied to high impact teaching practices in mathematics. Some faculty cited mentors within the department and opportunities to co-teach classes as particularly helpful in developing as professional educators.

The statistics program is highly successful, receives numerous applications, has grown rapidly, and its graduates are securing jobs, often even before graduation. The program is innovative in its use of the online teaching modality. Both the statistics and the applied math programs include an opportunity to work on real-world consulting projects.

Department collegiality and sense of community are strong. Department members including students, faculty, staff, and the chair are clearly performing outstanding work. The members feel camaraderie, feel valued, and are very happy with the department leadership. They report that the Math Department is "awesome" and that they enjoy being a part of it. Math is a CSUF Department that is filled with selfless members, and there was a contagious positive energy that was especially strong among early-career faculty. This altruism was universally noted among students.

Introductory-level curricula have undergone significant change in response to Executive Order 1110, which essentially eliminated pre-college coursework for students. The Department undertook tremendous work in revising its pre-college and introductory college-level programs,

and appears to have maintained its reputation for caring about students and their success in making this transformation.

The Department has hired very well. When hires have been successful, the new faculty members have been excellent. The Department has also hired a diverse group of people including women and people of color. The members who were hired as part of a cluster felt an increased sense of belonging.

Issues for improvement:

The progression toward larger **class sizes** (up from below 30 to 40 students per class) has put more pressure on faculty and has reduced access to faculty for students. Recent class size increases are due in part to optimization by the former chair that is saving the university funds through increased efficiency. However, all levels of the department, outside of the chair, expressed consistently negative feelings about the increased class sizes, primarily because of student anonymity, increased faculty workload, and an erosion of the student-faculty interaction opportunities that are a hallmark of Math at CSUF. Even in teaching lower division courses, graders, if they are assigned at all, are assigned to tenured/tenure-track faculty. Additionally, the statistics program has grown to beyond its capacity to support more students. The selflessness with which CSUF Math Department faculty work to accommodate student needs even in the face of larger class sizes seems to lead to an observed progression toward fatigue and frustration from early career to senior faculty. The Department works very hard, but faculty members are discouraged by the lack of support for the increase in workload associated with the larger classes.

Hiring and retaining new faculty is a major challenge, particularly in the area of statistics. Salaries at Cal State Fullerton are not competitive, particularly for high-demand disciplines. Compensation for the faculty is so poor that entry-level graduates from the Department's programs earn salaries well above the faculty, thus dampening enthusiasm. The panel finds it commendable that the faculty are tireless in spite of being under-compensated, but the panel is also very concerned about the long term effects on morale for these faculty. CSUF will be limited in its ability to promote STEM among students if STEM faculty are not sufficiently supported by the University. There were consecutive failures to hire in Statistics, and a failure in Applied Math last year. Thousands of work hours are squandered and the long-term health of a program is jeopardized when a search is unsuccessful. There is a need to systematically address this if the Statistics Master's Program is to continue. A similar problem exists for Applied Math to a lesser extent. Faculty who have been hired continue to struggle with the local cost of living. Faculty reported that at least one International faculty member was lost because of a lack of support for the work visa process.

Moreover, the hiring difficulties are currently being compounded by the CSU system's move to the new CHRS system for applications. The use of CHRS has decimated applications to a currently open search compared to last year, as the American Mathematical Society's mathjobs

portal is the central means for departments nationwide to receive faculty applications. Compounding the burdensome CHRS system with the poor compensation scale, the Panel is very concerned about the future of faculty in the Math Department.

Meaningful shared governance and support of the Math Department by upper-level CSUF Administration appears to be lacking. A noteworthy example is the Math Tutoring Center, which was moved and centralized with a campus tutoring center for reasons that the faculty do not fully understand. The faculty felt this was a loss, and were unaware that this operation had moved elsewhere on campus. This particular move left the office location for graduate TA's accessible only through the former tutoring center, which is now a classroom. A second example is the deployment of the CHRS system, as noted above, which has dramatically decreased employment applications.

The internal graduate application process is not streamlined. The Admissions Office is viewed as inefficient and may be the source of delays in applications being received by the Department. This may also have been exacerbated by the shifting of staff within the Department. In one particular semester, applications were not received by the Graduate Admissions Committee until two weeks before the Fall semester, and in one case, an application was received after the start of the semester. The panel was not equipped to locate the source of the problem, but there appears to be some flaw in how applications are transmitted from Admissions to the Mathematics Department. This flaw is having a negative impact on the faculty who have to figure out ways to resolve the problems that these delays cause, and causes students to be lost to other campuses or delayed in enrolling.

The **Department staff** is down one member, and is having difficulty filling that position. This is leading to overload for the other staff members.

Recommendations:

We recommend that the department **review its practices regarding class sizes**, and make a conscientious and public decision that will guide the setting of class sizes that takes into account availability and workload of faculty as well as student learning conditions. Any change to policy or practice will need to bridge the ideal with practical limitations, including availability of faculty and resources such as computer workstations.

We recommend a commitment to supporting the Statistics program by **increasing offer salaries and other supports** (e.g., startup funds) for the next search, in line with salaries offered to faculty with similar market demand such as Accounting faculty in Mihaylo College of Business and Economics.

We recommend that Central Administration within and beyond academic affairs **review its processes for inviting public comment and review of changes to policies**. While this is not

a departmental issue, changes beyond the Math Department are having a serious impact on the Department's ability to conduct essential functions, such as hiring faculty.

We recommend that the **graduate application process be reviewed** by the College, and additional support provided or changes to processes be made as needed to ensure that applications are available for faculty review in a timely way following their receipt by the department of admissions and records.

We endorse the Department's efforts already underway to **hire a fourth staff member** to assist in the operation of the department.