

Supporting a Statistician in a Math Department

Many mathematical sciences departments are finding themselves responsible for teaching statistics. Although statistics uses mathematical concepts in an essential way, administrators and colleagues must recognize the important differences between the fields, how each subject should be taught, and how a statistician should be evaluated for tenure.

Professional Development

Mentoring and professional development are important for all new faculty hires, but are even more important for a statistician in a mathematical sciences department. Statistician mentors are recommended for new faculty in statistics, especially if this person is the only statistician in the department (<http://goo.gl/35PbDC>). If there are no senior statistician mentors available in the department, contact the Isolated Statisticians Network, a committee of the American Statistical Association (ASA), for advice (<http://goo.gl/6FRXsE>).

It is particularly important for new statistics faculty members, in a department without other statistics faculty, to travel to conferences and workshops in order to have the opportunity to talk with other statisticians about both their research and the teaching of statistics. In addition, departments should recognize the need for statisticians to have specialized software for their research and their teaching.

Applied statistics instructors should use very different pedagogical approaches than teachers of pure mathematics courses (<http://goo.gl/w0evfj>). Students in a first statistics course should learn to reason about the world through examples involving real and often-messy data (<http://goo.gl/Li52hW>). A statistics faculty member must spend a lot of time searching for good real-world data sets for examples and exercises. He or she must keep abreast of a field that is rapidly and continually changing; in particular, he or she must keep up with the new advances in technology and statistical computing that are having a major impact on both research and teaching.

Thus, a statistics faculty member must devote a significant amount of time developing the support materials for the technology in addition to developing course content. See the recent recommendation from the MAA-ASA Joint Committee on Statistics Education for a discussion of qualifications for teaching

introductory statistics courses (<http://goo.gl/29gfRq>); this statement has been endorsed by the boards of the MAA and the ASA.

Evaluating Their Work

The work of statisticians is different from the work of most mathematicians. Thus, the evaluation of the quality of their work requires familiarity within their field and its many nuances. For example, statisticians are often involved in important interdisciplinary work that may be published in a journal that does not

include statistics (or mathematics) in the title. Statisticians are often listed as the third or fourth author even though their contributions are essential. In many cases, a statistician may consult on a project that requires thoughtful and time-consuming work, but may produce outcomes that are not statistically significant and, consequently, may not result in a publication.

Statistical consulting (paid and unpaid) is an important form of

scholarship and professional development for many statisticians. A new statistician on campus will often receive requests for help with data from faculty, students, staff, and even outside the college or university. If the new statistician is expected to provide such a service, then some form of reassigned/released time may be warranted. Otherwise, the faculty member's performance in those areas that are most closely aligned to tenure and promotion could be adversely affected.

The American Statistical Association has endorsed the MAA's "Guidelines for Programs and Departments in the Undergraduate Mathematical Sciences." In addition, the ASA's endorsement lists specific areas of support for new statistics faculty members (<http://goo.gl/HiEbWK>). As the need for qualified statistics instructors continues to grow, it is essential for mathematicians and statisticians to appreciate the distinct differences between the approaches to research and pedagogy between the two fields. 🍷



The ASA-MAA Joint Committee on Statistics Education tries to stimulate effective change in undergraduate statistics education, especially in the many institutions where the department of mathematics bears primary responsibility for the teaching of statistics. Contact: Michael Posner at Michael.Posner@Villanova.edu.