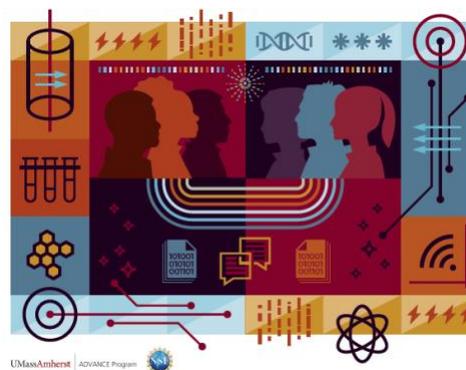


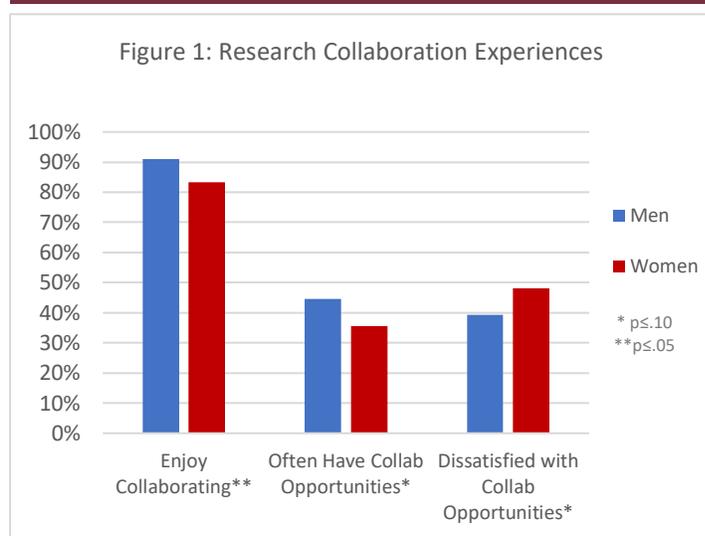
Research Collaboration Findings

The UMass ADVANCE program is working to ensure greater equity among faculty members through the power of collaboration. In this research brief, we describe some of the key findings from our initial 2018-19 survey. We will conduct the same survey in 2022-23 to measure the impact of our interventions.

419 UMass faculty from 32 STEM departments in CICS, CNS, COE, and CSBS responded to the survey. We also explored differences by college and identify similar patterns; however, women in CICS and COE are more satisfied with collaboration experiences than those in other colleges, while both men and women in CSBS tend to be less satisfied with collaboration experiences than those in other colleges.



We focus on patterns among STEM faculty by gender. Research collaboration, including on grant proposals, papers, patents, or other formal and informal outputs, is central to much 21st century STEM research, and positively related to productivity, funding, and professional development. Yet, do STEM faculty members at UMass have similar and positive experiences with and access to collaboration?



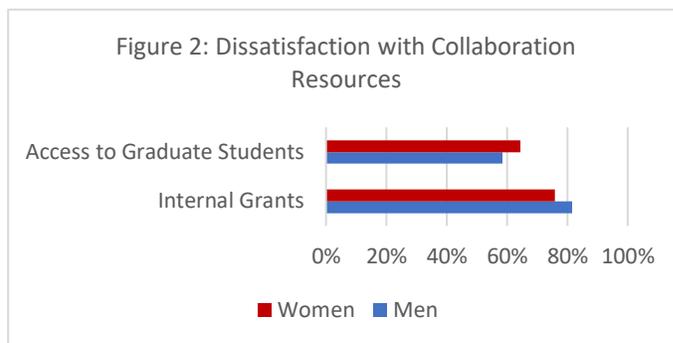
UMass STEM faculty enjoy collaborating with others on their research. Figure 1 shows that **both men and women enjoy collaborating** with UMass colleagues, but there is an extraordinary mismatch between how much they enjoy collaborating and their opportunities to collaborate on campus. There are gender differences in how faculty experience and have opportunities to collaborate. **Women report having fewer opportunities to collaborate**, and are **less satisfied** with collaboration opportunities.

Implications for interventions: These survey data suggest that we need interventions aimed at ensuring that all faculty can access resources and relationships to support collaborative research. ADVANCE provides relationship-building activities, such as research interest-based events, aimed at increasing opportunities to collaborate. ADVANCE also provides resources for faculty to build diverse and equitable research collaborations, through workshop trainings and tools such as collaboration best practices and sample MOUs (memorandums of understanding).

The survey also asked whether or not faculty are satisfied with resources for collaboration. There are no significant gender differences in satisfaction levels; however, **both men and women are extremely dissatisfied** with opportunities for **internal grants** to fund collaborative research and with **access to graduate students**.

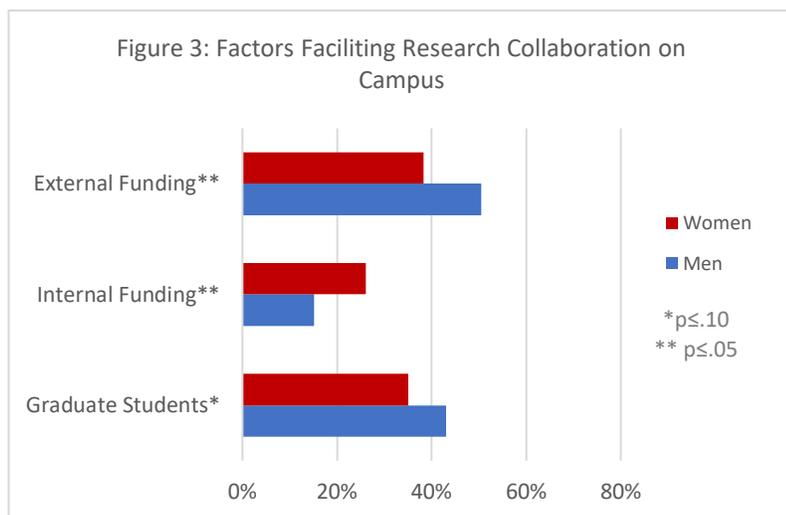
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Implications for Interventions: ADVANCE funds internal grants to support collaboration, and encourages other internal grant opportunities to consider equity and inclusion in funding research. ADVANCE further identifies opportunities for supporting graduate student funding as part of collaborative research teams.



We asked UMass faculty to identify factors that facilitate their research collaborations. On a number of factors, there are no significant gender differences. For example, both men and women across ranks find that collaborations are facilitated by **shared research topics** (71%) or **complementary research interests** (74%). Physical proximity of offices and lab spaces (41%) or social spaces (11%) play a smaller role. Social connections (28%) and referral by colleagues (18%) also do not appear to differ by gender. Shared teaching (14%) or committee service (13%) also do not differ by gender.

Yet, as shown in Figure 3, some factors appear to operate differently by gender. For example, **men are significantly more likely to see external funding as facilitating collaborations** ($p < 0.05$). This effect is driven by senior men for whom external grants are most likely to facilitate collaboration. **Shared internal funding appears to play a key role in facilitating women's collaboration**, which may result in women noting greater satisfaction with internal grants ($p < .01$). Men are marginally more likely to see graduate students as facilitating collaboration, an interesting finding given that women also reported less access to graduate students ($p < .10$).



Implications for interventions: ADVANCE interventions include internal seed grants for collaboration, which can provide graduate student funding to further support these collaborations. ADVANCE provides additional support for collaborative seed grant funding aimed at helping researchers successfully seek external funding. Given the importance of shared research topics and complementary research interests to all faculty, ADVANCE also provides opportunities for researchers to meet and connect with colleagues with shared interests.

Through the power of collaboration UMass ADVANCE transforms the campus by cultivating faculty equity, inclusion and success. ADVANCE provides the resources, recognition, and relationship building that are critical to equitable and successful collaboration in the 21st century academy. UMass ADVANCE is funded by the National Science Foundation. For more information on ADVANCE go to <https://www.umass.edu/advance/>.