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UMass ADVANCE STEM Pandemic Effects by Gender and Time of Hire 2022

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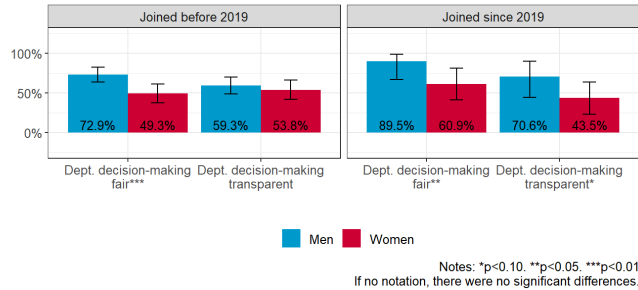
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Pandemic Effects by Gender and Time of Hire

The UMass ADVANCE program is working to ensure greater equity among faculty through the power of collaboration. In the 2022 ADVANCE survey, 273 UMass faculty from 32 STEM departments in CICS, CNS, College of Engineering, and SBS responded. In this research brief, we describe some of the key findings from this survey, focusing on patterns among STEM faculty by **gender** and **new hires (whether they joined UMass before or since 2019, given the impact of the pandemic on faculty life)**. We explore whether and how the intersection of gender and time of hire affect STEM faculty decision-making, feelings of inclusion, and research collaboration.



Figure 1: Perceptions of Departmental Decision-Making



How STEM faculty perceive decision-making processes in their department varies by gender and time of hire. As Figure 1 shows, a higher percentage of faculty who joined since 2019 believe that the decision-making process in their department is fair, compared to faculty who joined UMass before the pandemic. However, we notice **larger gender differences in fairness perceptions for newer hires**. Similarly, we do not see significant gender differences among faculty who joined before the pandemic for faculty's perceptions on whether decision-making is transparent, but we see **substantial gender differences among newer faculty** ($p<0.1$). Overall, among new hires, women are less likely than men to see decision-making as fair and transparent, which suggests that recent women hires are more "out of the loop" than men.

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We also compared faculty on their perceptions on tenure processes. As shown in Figure 2, for new faculty, there are statistically significant and substantial gender differences in the perceptions of tenure criteria clarity ($p<0.01$): only 38% of women STEM faculty believe that tenure criteria are clear, compared to 80% of men STEM faculty. Yet, in terms of the perceptions towards tenure criteria being consistently applied, we do not see gender differences for new hires. Overall, newly hired women are less certain of tenure criteria, and require mentoring on this topic.

Figure 2: Perceptions of Tenure & Promotion Processes

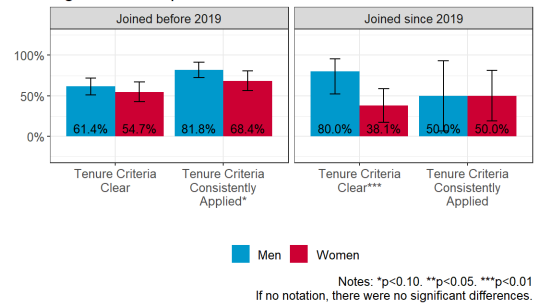
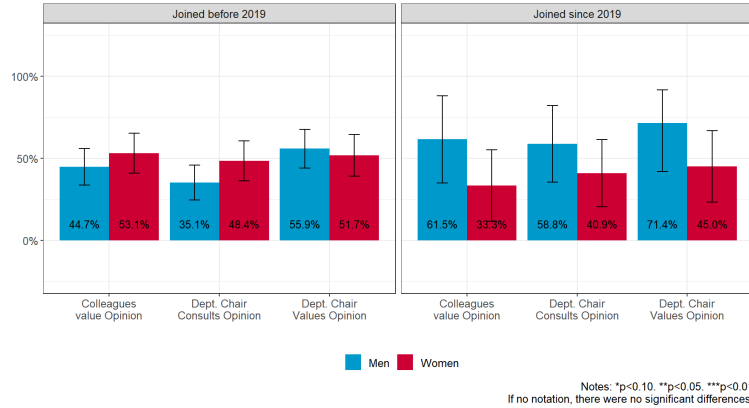


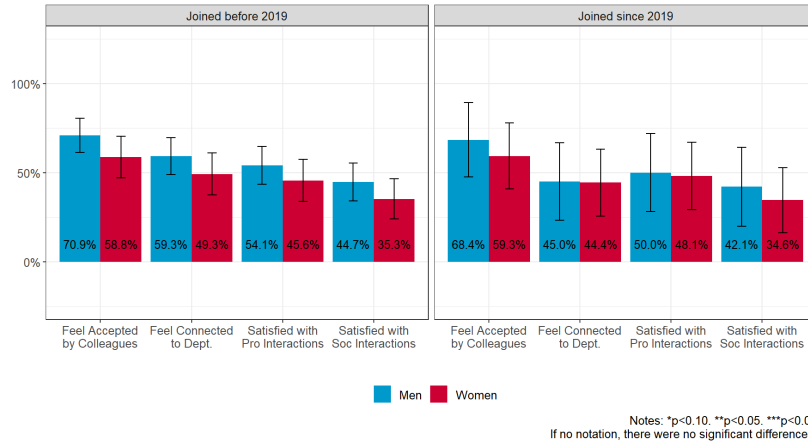
Figure 3: Feeling Valued in Dept. Decision-Making



In terms of how engaged faculty feel in decision-making, we see a trend of larger gender differences among new faculty, with women faculty feeling less valued in Figure 3, even though the gender differences are not statistically significant (likely due to the small sample size of faculty joining since 2019). Yet, importantly newly hired women are less likely than newly hired men to feel that their colleagues and department chair value their opinions and consult.

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Figure 4: Feelings of Inclusion

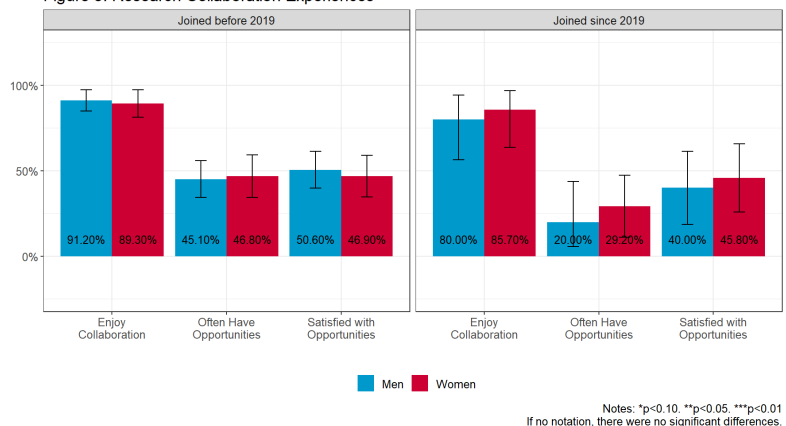


Next, we examine faculty's feelings of inclusion, as shown in Figure 4. **The good news is that based on our 2022 survey, we no longer see significant or substantial gender differences across multiple measures of feelings of inclusion, for faculty joining before and since 2019. However, in comparison to faculty's feelings reported in the 2018 survey, faculty now feel less included in general:** in particular, faculty feel less accepted by their colleagues (decreasing from 71% in

2018 to 63% in 2022), less connected to their department (decreasing from 62% to 51%), less satisfied with their professional interactions with colleagues (decreasing from 63% to 47%), and also less satisfied with social interactions with colleagues (decreasing from 53% to 40%). Thus, while gender differences are smaller, the pandemic has clearly had an impact on all faculty member's feelings of inclusion.

Lastly, in the context of research collaboration, we also do not see significant gender differences in collaboration experiences for both groups (new faculty and faculty joining before the pandemic), as shown in Figure 5. However, new faculty joining since 2019 have fewer collaboration opportunities ($p<0.1$), and they are less satisfied with those opportunities, compared to pre-2019 faculty. Thus, it is important to help engage new faculty in opportunities to collaborate with colleagues.

Figure 5: Research Collaboration Experiences



Recommendations: To support new faculty, especially women faculty, hired during the COVID-19 pandemic period, our data show that university leaders, departments, and other units can help by creating greater transparency in shared decision-making. See our [UMass ADVANCE tools](#) on equitable decision-making practices, which includes the research-based suggestion that pre-tenure faculty serve once on the departmental personnel committee to increase transparency and inclusion in shared governance. For inclusion, while newly hired faculty are more similar to their colleagues, feelings of inclusion have been dampened by the pandemic. We encourage departments to return to in-person faculty meeting, social events (including those held outside, in parks and other family-friendly environments), and draw upon our tools aimed at creating [inclusive departments](#). Finally, to support all newly hired faculty in research collaboration opportunities, see our [UMass ADVANCE tools](#) on creating equitable research collaborations, and setting up seed funding programs equitably.

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