

UC Santa Cruz Faculty Community Networking Program 2018-2019: Women faculty in STEM

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1 Introduction

According to a 2018 publication (Yoder, 2018), on average, only 16.9% of tenure/tenure-track faculty in U.S. colleges of engineering in the U.S. are women. Life science-related disciplines have the largest percentages of female tenured/tenure-track faculty, with about 1 in 5 tenured/tenure-track faculty being female. Aerospace and nuclear engineering disciplines have the lowest inclusion of female faculty, where less than 12% of tenure/tenure-track faculty are female. Figure 1 depicts the breakdown of the percentages of female tenure/tenure-track faculty by discipline.

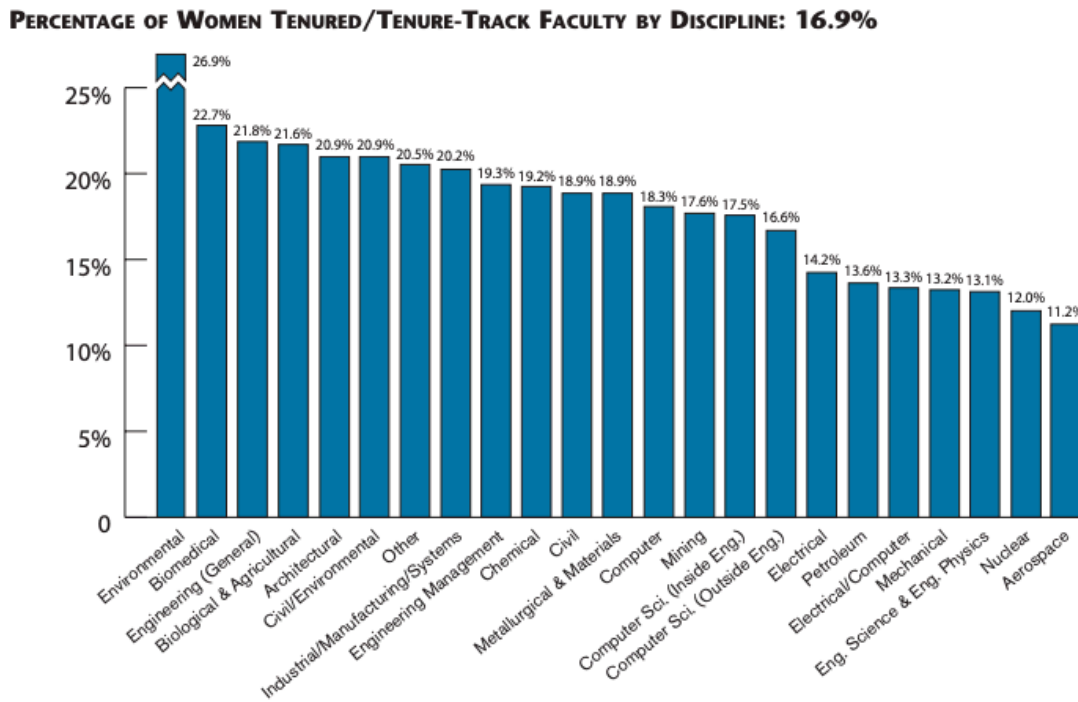


Figure 1. Percentage of women tenured/tenure-track faculty by discipline

The same article reported that female tenured/tenure-track faculty are not represented at the highest levels of tenure when compared to their male counterparts. Figure 2 exemplifies the data. This is the data from engineering schools around the USA in Fall 2017. As the data shows, while 24.3% of assistant professors are women, the percentage dropped to 11.8% at the full professor level.

The problem of low representation of women faculty in STEM fields is exacerbated by relatively high levels of attrition. Data obtained from the NSF Survey of Doctoral Recipients (1995–2003) indicate that women were significantly more likely to leave their STEM faculty positions than were men for both voluntary and involuntary reasons. Moreover, STEM women faculty were 40% more likely than men to leave the tenure track and assume an adjunct position (Pascale, 2018). Analysis from this study identified four direct, inversely related pathways to intention to leave for women faculty in STEM fields: *satisfaction with compensation*, *satisfaction with job autonomy*, *satisfaction with job security*, and *perceived campus climate*.

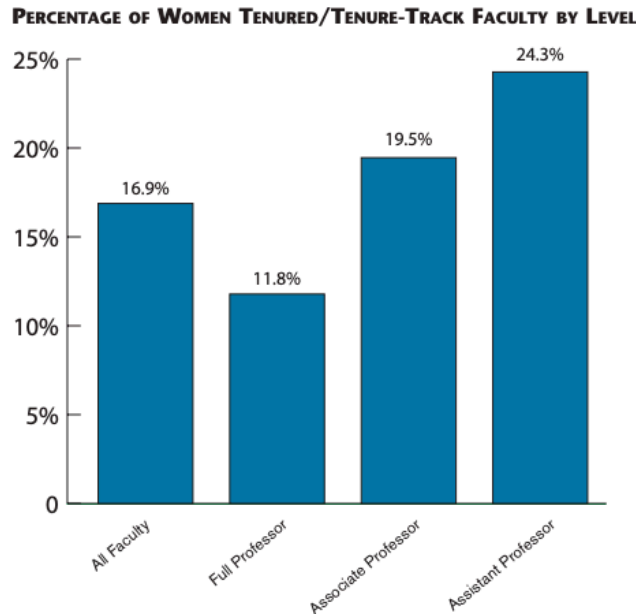


Figure 2. Percentage of women tenured/tenure-track faculty by level

To understand the issues specific to UCSC women faculty in STEM, we organized several networking lunches. The following describes the issues that were discussed during the meetings. It should be noted that many of these issues were self-reported and some of the “statistics” were not backed by published data.

2 Issues Discussed and Recommendations

While the main purpose for the networking lunches was to create a community of women faculty, lecturers and other researchers (e.g., research scientists, postdoc, etc.), only faculty came to the lunches, ranging from newly joining assistant professors to full professors with 23 years of experience at UCSC. The discussions were in general collegial and lively, and it became apparent that there were differences in experiences by disciplines, administrators (e.g., Chairs and Deans) and divisions.

2.1 More Services and Invisible Services

One common experience that the attendees across different ranks was that women performed more services than their male counterparts at similar rank, in terms of hours spent as well as the number of distinct duties. Some of the underlying causes of these extra services are:

- **Similarity attracts:** many female students are more comfortable discussing their academic as well as personal issues with female faculty. This issue is exacerbated by the ratio of female students to female faculty in some fields (i.e., there are several folds more female students than female faculty).
- **Perceptions that female faculty are more sympathetic:** across gender and race, there is a perception that female faculty are more sympathetic, and therefore, many students from a variety of gender identities and races are more comfortable discussing

their issues with female faculty.

- **Proving ability:** some female faculty in the lunches felt that when their Chairs or Deans asked them to serve in committees, female faculty are more hesitant to decline because they feel they need to prove to the department and/or division that they can excel in juggling research, student mentoring, teaching, family and services. One comment from one of the lunch attendees is: “It’s OK for a male faculty to be mediocre, but that is not OK for a female faculty.”
- **Discrepancies in the assignment of services:** Female faculty were disproportionately asked to perform a more “social” or “internal” service (e.g., outreach to local high schools) instead of a more “visible” or “high-profile” one (e.g., speaking at a prestigious fundraising event).

To address these issues, I did two things. Firstly, I looked at published manuscripts that reported similar issues, especially to see if the issues raised in the lunches also exist nationwide and distilled the solutions the papers proposed. Secondly, I asked directly the attendees for advice, ideas, differences in experiences, etc. For the invisible service issue, I had asked the Chair of UCSC Senate Committee on Academic Personnel (CAP) in a workshop about how invisible service can be “counted” in personnel reviews.

Flaherty (2017) reported strong evidence that, on average, women faculty perform more service than male faculty in academia (by around 30 minutes per week), and that the service differential is driven particularly by participation in internal rather than external service. The article also pointed out that one cause of this imbalance is “proportionality” or women are called on to do more service when there are fewer of them in an academic unit.

The paper offered some solutions, and some of them echoed the solutions that were proposed by the attendees and the Chair of CAP’s suggestions. The following are the distillations of the proposed solutions:

1. **Mentorship** that involves advising female faculty to be more selective in their service-related choices and cultivate their ability to say no to requests or to propose an alternative solution to a request.
2. **Raising dean’s and chairs’ awareness** of how service assignments are being distributed to avoid gender bias (or any other biases).
3. **Listing** services, including those who do not have official names or categories (e.g., if a faculty member spends in average 5 hours per week advising students on personal issues, it should be listed under services in her personnel review file).

2.2 Dual Career Issues

Dual career issues were discussed over several lunches, and the issues were very complex. Specifically, the discussions centered around:

1. **General lack of support for dual career at the time of hire.** One attendee stated that when she was hired 10+ years ago, there was a Dual Career coordinator that met one-on-one with the partner and helped narrow down job opportunities in the surrounding areas. That person’s role seems to have been unfilled in recent years, and is replaced with a website listing a number of links to jobs. This issue was exacerbated with the fact that Santa Cruz is slightly more isolated than many other Silicon Valley cities, so dual career issue is harder to handle ourselves when the partner is not in academia.

2. **Dual career was considered in the discussions related to choosing a faculty candidate** and not in equal way between male and female partners. Specifically, several attendees who had served in faculty hiring committees stated that the issues of dual career, even though was not clearly stated as the criteria of not choosing a person as the top candidate, was discussed in length during faculty hiring committee's meetings. Several other attendees stated that when the partner was a male, some committees believe that female candidate might not take the job unless her partner's situation was secured, but not the other way around. Therefore, there was a tendency among some hiring committees to not rank a female candidate as the top candidate if the committee isn't aware that the partner's situation was sorted. Additionally, in some committee discussions, the issue of salary disparity between partners was raised. Specifically, if an offer is made to both partners from the same department, there is a perception that regardless of the portfolio, the male candidate either must earn a higher salary or if not, must be made aware that his female partner will earn a higher salary.
3. **Dual career is a bigger problem for junior faculty.** For senior faculty, especially when the partner is equally esteemed, it is easier to find a place for the partner. However, because of the requirement to have an FTE associated with partner hire, the partner of a junior faculty, who tends to be junior, is not as attractive to many departments, especially as there is never a free FTE even for the department that is helping out by accepting the partner. The experience was that this FTE comes back in the calculation of assigning new FTEs to a certain department in the future.

Similar to the first issue, to address these issues, I did two things. Firstly, I looked at published manuscripts that reported similar issues, especially to see if the issues raised in the lunches also exist nationwide and distilled the solutions the papers proposed. Secondly, I asked directly the attendees for advice, ideas, differences in experiences, etc.

Interestingly, a 2017 paper reported relationship status discrimination (Rivera, 2017). Specifically, committee members assumed that heterosexual women whose partners held academic or high-status jobs were not "movable," and excluded such women from offers when there were viable male or single female alternatives. Conversely, committees infrequently discussed male applicants' relationship status and saw all female partners as movable.

The proposed solutions that the attendees came with are:

1. **Ask the EVC to keep some central FTEs for partner hire.** The attendees are aware that resources are very scarce, but if retaining and recruiting world-class researchers is the goal, then dual career issue should not be the burden on the hiring department that has to beg and borrow FTE.
2. **Bring back the dual career coordinator.** There were some positive experiences from those who were at UCSC long enough to interact with the dual career coordinator. This is especially important for non-local candidates (especially candidates from overseas who are not familiar with the job market in the area).
3. **Include relationship bias in faculty hiring committee training.** This training should include preventing the committee not just from discussing gender when ranking candidates but also candidate's relationship status as the predictor of whether the candidate is likely to come.
4. **Conduct exit interviews for those who do not accept UCSC employment offers and leave UCSC** to understand how many are due to failed partner hire.

2.3 Balancing Family and Career

Discussions regarding balancing family and career also brought up some complex issues as follows:

1. **Lack of childcare support resources.** Unavoidably, women are often the main carer of young infants, especially during breastfeeding period. While this by itself does not prevent a female faculty from going to networking meetings or conferences, in most cases the cost of bringing an infant to the meeting and securing childcare places burden on the faculty. Many funding agencies do not allow childcare cost to be budgeted.
2. **Perception (or misconception?) that the UC Family and Medical Leave (FML) is unfair to those who would like to start a family soon before/after hiring.** One attendee brought to our attention that the family and medical leave stipulates that “To be eligible, you need to have worked at UC for at least 12 cumulative months, and worked at least 1,250 hours during the 12 months immediately before the date you wish to begin an FML” (UC, p. 4). The document includes childbearing leave as FML. This essentially means that a pregnant candidate cannot be considered and also this excludes somebody from planning to have a family soon after they are hired.
3. **Parental leave that is unfair for mothers.** There were extended discussions that when a father takes parental leave, it’s often used to better their CV, while when a mother takes parental leave, it’s often to take care of the infant. There were questions among the attendees the basis of providing parental leave of equal length (i.e., Active-Service Modified Duties) for mothers and fathers.

One interesting thing that is specific to this issue is that, some of the discussions seem to have been based on urban myth. For example, upon searching APM 760-28, it appeared that the third issue about equal duration of leave for mothers and fathers was a misconception. Specifically, APM 760-28 stated: “*An academic appointee who is a birth mother and who has a full-time appointment for at least one full academic year (three quarters) is eligible for a total period of Childbearing Leave plus Active-Service Modified Duties of three quarters to enable her to recover fully from the effects of pregnancy and childbirth and to prepare for and/or care for the newborn child. If she gives birth during the summer or an off-duty term, she is still eligible for a total period of Active-Service Modified Duties of three quarters.*”

Some solutions were also proposed for this issue, namely:

1. **Funding to support childcare during conference or networking travels.** The amount discussed was \$20,000 per year, distributed as a flat \$1,000 per travel in a first-come-first serve basis, managed by Senate Committee on Research.
2. **Better explanation of the various leaves and eligibility.** There was some discussion during the lunches that in some divisions, the mothers received two quarters of *plus Active-Service Modified Duties* while the fathers only received one quarter. However, it was not clear to many attendees whether granting *Active-Service Modified Duties* is the purview of a department chair.

3 Conclusions

The networking lunches had been proven to have brought women faculty in STEM at various ranks and disciplines together. It would be great if this networking opportunity can continue next year. Beyond the specific issues that were described above, below are the sugges-

tions that came from our attendees on the general things that can help improve the campus climate, retention and success, especially in regards to women faculty in STEM:

1. **Continue the lunches but reserve some for purely networking instead of discussing issues.** Now that there is a community of faculty that are aware of these lunches, we need to reserve some lunches purely for networking opportunities, perhaps to exchange research and teaching ideas, instead of discussing issues.
2. **Create a more transparent information expert to rules and regulations.** One common thing that many junior faculty experienced was that there are so many paperwork, rules and regulations at UCSC that it just felt that those who own the information or have been here long enough can gain advantage and those who do not even know who to ask are left behind. Many discussions in the lunches included sentences such as “When I served in the Senate Committee of X, I learned that.....” or “With the previous dean, this is how this was done.”
3. **Create a databank of statistics.** Many discussions led to the hear say of statistics (e.g., how many successful dual career accommodations, whether the use of the new SET reduce biases towards certain gender or races, etc.). We felt that it would be useful if there are surveys that can be made public that indicate whether certain issues were real issues, whether they were UCSC-wide or discipline-specific etc.
4. **Have resources and funding set aside for initiatives to follow up the issues.** Some of the issues and the proposed solutions will require some resources and funding to implement and manage (e.g., grant for childcare to supplement conference and networking travels). Without these resources, many attendees believe that this report will be shelved without any follow-up.
5. **Announce the follow-up strategies that UCSC plans to do to this initiative.** Some attendees were very sceptical that there will be follow-up to these lunches. Announcing what UCSC plans to do with the knowledge regarding the issues and the solutions that the attendees and other published papers proposed will be very important to excite a larger crowd of lunch attendees.

4 References

- Yoder, B. L. (2018) *Engineering by the numbers*. American Society for Engineering Education.
- Pascale, A. B. (2018). Supports and Pushes: Insight into the Problem of Retention of STEM Women Faculty. *NASPA Journal About Women in Higher Education*, 11(3), 247-264.
- Flaherty, C. (2017). Relying on women, not rewarding them. *Inside Higher Ed*, 12. <https://www.insidehighered.com/news/2017/04/12/study-finds-female-professors-outperform-men-service-their-possible-professional>.
- Rivera, L. A. (2017). When two bodies are (not) a problem: Gender and relationship status discrimination in academic hiring. *American Sociological Review*, 82(6), 1111-1138.
- University of California. Family and Medical Leave Fact Sheet. <https://ucnet.universityofcalifornia.edu/forms/pdf/family-medical-leave.pdf>