C. Barnes: Welcome! I am Courtney Barnes, an intern with the University of Wisconsin Archives Oral History Program and I will be hosting this podcast, which aims to tell the story of women working in science, engineering and mathematics at the University of Wisconsin – Madison over the past century. Within this podcast you will find first-hand accounts containing anecdotes of the struggles that female researchers have overcome while conducting science, math and engineering research at the University of Wisconsin between the 1920s and the present day. As a female engineering student who will be entering the workforce in the near future, this topic “hits home” for me, as I am sure it will for many others. I would like to thank Traci Nathans-Kelly of the Engineering Professional Development department and Troy Reeves of the Oral History Program for providing me with the opportunity to explore this topic.

In the early part of the 20th century, women that were married to another university faculty member faced unique challenges while conducting scientific research. The careers of many female researchers in science, engineering or mathematics depended on the influence of their husbands.

Ethel Allen was the wife of Oscar Allen, a Professor of Bacteriology in the 1920s. While she was not employed by the UW, she was able to conduct her own scientific research alongside her husband in the lab.

E. Allen: And I could work in the department, not in any paid position but I could “help” my husband. As everybody in the department would say, “are you here helping your husband?” I was—

D. Collins: You know at that time that must have been pretty unusual to have people coming into the lab and not being part of the paid staff.

E. Allen: Well I suppose so. Yeah, yeah, that’s right too. I wasn’t helping my husband, heck I was helping myself. You know, I was with him and we could have lunches together.

C. Barnes: Assistant Professor Elizabeth Hirschfelder worked in the Mathematics department between 1931 and 1953. Her husband, Joe Hirschfelder, also worked in the same department. He requested that the department terminate her appointment in order to fit his needs.

E. Hirschfelder: Well after we were married—
B. Teicher: This is you and Joe Hirschfelder?

E. Hirschfelder: Yes. Joe was very anxious that I should be free to do things when he did a lot of traveling giving lectures and so on. In fact he had in mind the fact that he had piled up quite a collection of places that they wanted him to come. So he went to Mark Ingraham and said how about firing Betty? And Mark said, if you want to get her to stop teaching, it's up to you to go and fire her.

So I did stop. We were married in 1954, and in 1957 we went on this six month trip. We started as Joe gave lectures in Hawaii, and then on to Japan, and India, and on to Europe. So this was quite a trip.

C. Barnes: Wage-gaps that exist between genders were especially prominent in the early to mid 1900s before federal legislation–such as the Equal Pay Act of 1963–was enacted.

Margaret Irwin, who was associated with the UW intermittently between 1932 and 1951, relates her experience of wage-discrimination to Interviewer Donna Taylor.

M. Irwin: There has been discrimination against women. They haven't received the salaries that the men have for doing exactly the same work very often. Don't you think that's true often?

D. Taylor: It would seem to be. Did you feel this while you were working at the university?

M. Irwin: I didn't mind the money actually, because I didn't really need it.

D. Taylor: But were you aware that you were not getting equal pay, so to speak?

M. Irwin: Yes, definitely I was aware, because I had a husband on the staff, I wasn't getting a salary that I would normally have commanded. But somehow, in my generation, we didn't fight that.

D. Taylor: You assumed this was the way it was.

M. Irwin: We just assumed this was the way it was.

C. Barnes: Another example of equal pay issues was shared by Nancy Wiegand. She describes the mid-1970s experience where she realized that she wasn't being compensated equal to her male peers and the steps that she took in order to correct this discrimination.

N. Wiegand: So I think that the first time that I felt that I was discriminated against was in this job that I had in the Center for Health Sciences where I had worked for quite a while
and they had hired a new person who was a guy and he was a very chatty person so I got to know him. And he told me how much he was earning and I just about fell over because I was training him.

I had written this software to be used for the medical school and I guess it was so successful or just-you know, not necessarily the software but just the whole program that the director was doing-so he, the nursing school wanted to do the same thing. So, the person that I was working for had hired this man to do the same thing for the nursing school, so I was training him. So, when I found out that he was making so much more than what I was making, and then I think that’s when I first, I mean I very upset, and I think that’s when I first found out that there were these different categories of jobs, you know that some had benefits, some didn’t have benefits. And I didn’t really know anything about that.

So when I found out that he was making so much more I wanted to get back-pay from at least, from well I just asked from the day that he started, and I wanted to get at least equal pay from what he was making. So I took this to the, you know, to my immediate supervisor and that didn’t, you know, they didn’t know what to do. So I actually went and I talked to the dean at the medical school or something because I thought it was entirely unfair. So the arrangement they settled on was that I could get time off and they would pay me that way and then also change my position to be what was called, I believe, an academic staff specialist, a position that would have vacation included because I had never had any paid vacation and that would also be on the retirement system.

So that’s the way it was resolved, so I took some time off that next spring and summer and still got paid until the money equaled out.

**J. Coleman:** Okay, now when you talked to your supervisor and to these other administrators, were they sympathetic?

**N. Wiegand:** Well they couldn’t argue. They couldn’t tell me, I mean, it was just plain fact. So, they didn’t give me a hard time, you know, they didn’t have to say that much, they just said “How can we make this better?”

**J. Coleman:** So were you happy with the way the situation was resolved or did you still feel-?

**N. Wiegand:** At the time I was happy but I think that was the first realization that nobody was looking out for me and that maybe I needed to start looking out for myself, which I had never done before. I was lucky that when I was an undergrad and I was working at the Instructional Research Laboratory and the director there was so friendly and so caring that he would, you know, give me raises or whatever-and I never asked for anything. And it wasn’t actually in my nature and also I didn’t grow
up to be thinking I’m supposed to be asking for more or promoting myself, I mean I never learned that. And I was protected before then. So the mid-seventies was when I realized-started to realize-that I should really should start looking out for myself a little more.

C. Barnes: Discrimination often comes from superiors, as in the case of equal pay, but peer-to-peer bias has followed women studying science or engineering as well. Monica Turner shares her experience of how it was unpopular for a girl to succeed in academics during the 1960s.

M. Turner: My mom was telling me recently that she remembered me not liking biology class, at all, when I was in high school and she was really surprised that I ended up really wanting to major in biology as a college student because she just didn’t remember me having much, really, liking it much at all.

S. Pfahler: Do you remember any-?

M. Turner: I don’t remember it very well, to be honest. I think in high school I was-Actually the interesting anecdote, which I have shared with other people, about high school is just at that age I had been a very good student all the way through and then you get to be a teenager and at least for girls at my high school and at my age, being smart was not something that was respected. At least amongst your peer group.

And I placed my grades for the first few years of high school. So I would purposefully answer things wrong on tests so that I wouldn’t get too high a grade. And I would keep the grade high enough not to get into trouble at home, but low enough that I would not be embarrassed with my peers. Which is kind of crazy. So I would get my grades kind of in the high 80s where I would be sort of “safe”. So that’s one of the things I mostly remember in terms of academic behavior and such.

C. Barnes: Ann Burgess was a UW student in the early 1960s. Her experiences show that women studying science may not have felt a sense of “belonging”.

A. Burgess: ...now there’s all these learning communities, and women in science and engineering dorm, and things like that. I think it’s so wonderful, and I’m so glad they’re doing that. Because I do remember feeling very isolated in the dorm. I lived in Chadbourne Hall the first two years. It was an all-women’s dorm at that time. That was back in those olden days, they segregated the men and the women.

And if I had a question about a chemistry problem, there wasn’t anybody around that I could just go work with. Whereas in the men’s dorm, lots of people were. And I didn’t know anybody well enough to call them up and do it on the phone. So I didn’t even realize at the time-- I was very isolated, but I didn’t realize it at the time.
The other thing I do remember, though, is people treated me as weird because I was a chemistry major.

S. Pfahler: Other women students, you mean, or any students?

A. Burgess: Everybody! And I belonged to a sorority, and we used to have to go to these things called beer suppers that I just hated. I hated those things, but it was required to go. So the sorority and fraternity would get together for this Friday night dinner, and some fraternity guy would come up to me and start a conversation, and then pretty soon he’d ask me what I’m majoring in, and when I said chemistry, usually he’d just turn around and walk away! So anyway. That’s my experience.

And while I’m talking about sororities, anybody that got engaged, they had this huge ceremony. Everybody— I can’t remember how they called us to the living room, but it’d be a darkened living room, and you’d pass around a candle, and the person who got engaged blew out the candle, and oh, it was such a big deal!

I got a fellowship to Harvard, and it wasn’t a bit deal to anybody! And I just remembered thinking, how ironic.

C. Barnes: At the university, tenure discrimination has been prominent over the years. This discrimination may begin as early as the assignment of research topics or the expectations of tenure-track staff and it often continues through the tenure application process. Marion Namenwirth discusses her experiences at the university, which culminated in tenure discrimination during the 1970s.

M. Namenwirth: I think the phenomenon probably existed. I’d heard about it in theory and I’m not so sure I saw evidence of it that faculty sponsors were more concerned about the viability of men’s careers. So for example, in pushing them towards particular research topics, they were more likely to saddle women with topics that might not yield in the short run or that the things that were worth doing that the professor wanted done, but which probably wouldn’t have a splashy result and which would therefore, make it harder for them to get a good job. Whereas they would be more protective of men’s long term interest in such selections.

I didn’t expect any discrimination at all against women. These people seemed to me to be very reasonable and kind of liberal, progressive types on the whole. And well meaning and the whole idea of discrimination was silly and they thought it was silly and they thought of themselves as entirely focused on the quality of research and teaching and the quality of thinking. And I agreed, so I didn’t expect when I went there to see any signs of discrimination at all. But as I was there and saw the way that the tenure system worked in practice, the way the system worked of treating
people and giving them opportunities before tenure and then evaluating them for tenure. It was obvious to me that it was not even-ended comparing the way women and men were treated. So I think to a considerable extent, this was unconscious on the part of the faculty in their decisions. I think they believed in what they were doing. As time passed, women and society in general became conscious of a lot of ways that biased decisions are made that are not exactly intentional.

...some of these things you had to-- you had to see it in action to understand it. For example, one thing that I learned, one thing that was extremely helpful and was an example of the openness of the department, of the zoology department, was that when I first came there in '71, they had decided that the faculty discussions when somebody was considered for tenure were going to be open to all the faculty, including the non-tenured faculty. So as a result, I was able to sit in on the discussion for whether two or three of the men ahead of me would become tenured. And from sitting in on those discussions, I got an idea about how the tenure considerations worked. Excuse me a minute.

You know, what sorts of questions were debated in deciding whether to recommend tenure for an assistant professor. And what I saw was that one faculty member would take responsibility for shepherding the case through the faculty. You know, that person would carefully examine the record of the candidate and presumably, have talked with them and have some idea about their strengths and weaknesses. Of course, the candidate was not in the room. But that professor would present that person's case to the rest of the faculty and kind of act as his lawyer, acting on his behalf and kind of defending him, or at least trying to explain the weaknesses and give a lot of attention to the strengths.

When I came up for tenure, nobody was willing to take that position. And having heard about this in the situations of other people too, I think part of the problem was that there was something sociologically embarrassing about taking up the cause of a woman. So a problem was created in the structure of the way the tenure system was to work. And what was problematic about it was that there was no rule in the university that said one person shall act as the defender or lawyer or representative of the candidate. This is something that had developed informally. So that when nobody wanted to do it for a woman, nobody realized that this was-- they weren't even so conscious that that's what usually happens or that if it didn't happen for a woman, that this would create a problem in itself. You know, so that's an example of one of the things, which by the end of the 70s was a paradigmatic situation that universities realized they had to step in and deal with. And there were many things like that, including for instance, the tendency to give women a whole lot of teaching to do and then ask why they weren't doing so much research. There were many things like that that were sort of not exactly planned, but they ended up in biased decisions.
I had been lulled into the feeling that things were very above board in that respect in the zoology department. For example, I realized that I was getting more pressure to do more teaching than the men were, but I expected that that would be considered when they considered me for tenure. Since they had loaded all this teaching on me that they would realize that that takes time and that the research articles that I published in that period would have to be balanced against what my teaching obligations were.

There was also the phenomenon-- and this is another one of these things that at this time, universities had not realized they had to deal with. That if you are one of the few women on tenure track on the campus, especially in science departments, and if the school is under pressure to have women in positions of power, then you are asked to sit on a gazillion committees, so that there will be a woman on the committee. And this happened to me too and being not to-- having not much insight into the situation I agreed to do a whole lot of administrative work, quite a bit more than men were expected to do. You know, thinking that yes, it was important to have women on these various committees and assuming that this would be taken into account in a reasonable way when at the time of tenure evaluation. But you know, it wasn't. And this is a widespread phenomenon.

I had been completely lulled by the fairness and even generosity that I had seen in the consideration of other assistant professors for tenure in the zoology department, which happened to be men. All of them, that's all there were. I'd been lulled into thinking that they would be even-handed and reasonable in evaluating my record. And so when you say did I feel like I could lean on the association of faculty women for backing? I wasn't really expecting to need backing.

C. Barnes: Denice Denton was the first woman to be granted tenure in the College of Engineering at the University of Wisconsin. However, she faced much discrimination on the way to tenure and was initially denied a tenure appointment. Partially due to her tenure denial, she and others worked to create legislation to protect people from tenure discrimination.

D. Denton: There was a woman at UW-Milwaukee and I think she was in the business school there. And she'd been denied tenure and by all appearances, she was better than three or four men in the same department who had gotten tenure recently. And what we discovered was that the laws or whatever in the state of Washington were set up- - or sorry, Wisconsin, were set up in such a way that a department could vote no on a case. You know, deny tenure. And then there was a case at UW-Stout or someplace, I think it was Eau Claire actually. Where a black guy had been denied tenure by his department, but the regents and/or the chancellor had granted him tenure. And then the department members had sued or grieved through some
processes and they won. And the judge in court said, look, given the laws in the state of Wisconsin, I have to find for the members of this department, but fundamentally I have to tell you that I think these rules are out of sync with Title IX or whatever. Or equitable practices because the bottom line was that the department could have basically said, we're voting against this guy because he's black. And the way the rules or the laws in Wisconsin were written, they couldn't be overturned.

And so when a similar thing happened to Ceil Pillsbury, we mobilized around her case, a number of women in the state, and we got an elected official-- and I don't remember who it was-- to push to get that law changed. And they called it the Pillsbury Law or something. And it actually got changed so that there could be some oversight in tenure denials in a way that made sense. And we all ended up going to the signing, the governor, Tommy Thompson at the time came over to the administration building on campus there for the whole system.

J. Coleman: Oh, Van Hise.

D. Denton: But anyway, it was up in the top floor of that tall building. And he had a big signing ceremony and we were all there.

J. Coleman: Now that meant when a woman was denied or a person was denied tenure and it could be proved that it was unjust, what then happened?

D. Denton: You could now reverse it.

J. Coleman: OK.

D. Denton: Whereas before, apparently it wasn't able to be reversed by the people up on high.

C. Barnes: The campus climate for women, especially women in science and engineering, has dramatically changed over the years. With a long way to go, women in science, engineering and mathematics have come far at the UW in the past century. Elizabeth Craig, the current chair of the department of Biochemistry, describes how the campus climate for women has changed since she arrived at UW in 1979.

E. Craig: I think the climate is not great, not bad. I think the climate is a really complex issue. Excuse me. One of the things I've struggled with the last number of years is it's much easier if you're in a position as you're an advocate for like, the climate is bad. The situation is bad. How can we make it better? Being in a situation of being a department chair where you have to be everyone's advocate, in some ways you can accomplish much more. But it's much harder to say oh, the climate's terrible. Part of it is you're a part of it perhaps. I think it is a very complex issue.
I think it is much better than it was 25 years ago. Just in that there are more women. There were very few women in biological sciences when I came. I remember in cell and molecular biology program that had 103 trainers and I was the third woman as a trainer in that program. But that doesn’t mean we don’t have a long way to go.

**C. Barnes:** As Elizabeth Craig stated, women studying science, engineering and mathematics have come a long way over the years, but there are still barriers that need to be overcome. Hopefully this podcast helps to illustrate some of the progress that has been made over the years regarding gender equality in a (traditionally) male-dominated field.

This podcast represents a small sample of the stories contained in several interviews maintained by the UW Archives and Records Management Oral History Program. For more information about the Women in Science and Engineering project or other Oral History Program projects please visit [http://archives.library.wisc.edu/](http://archives.library.wisc.edu/).