

## Supporting Information

### Contents

Table S.1 Participants and their institution types .....	2
Table S.2 Codebook for faculty women experiences in academia.....	3
Table S.3 Summary of themes, a-priori codes, and representative inductive codes from faculty narratives .....	10
Appendix A. Additional Methods .....	11
Participant selection .....	11
Appendix B. Interview protocol .....	12

## **Navigating Academic Careers: Personal and Institutional Experiences of Women Faculty**

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Table S.1 Participants and their institution types

<b>Participants</b>	<b>Institution Type</b>
Participant 1	R1
Participant 2	R1
Participant 3	R1
Participant 4	R1
Participant 5	R1
Participant 6	R1
Participant 7	R1
Participant 8	R1
Participant 9	R1
Participant 10	R1
Participant 11	R1
Participant 12	R1
Participant 13	R1
Participant 14	R1
Participant 15	PUI
Participant 16	R1
Participant 17	R2
Participant 18	PUI
Participant 19	R1
Participant 20	R1

Table S.2 Codebook for faculty women experiences in academia

<b>Code</b>	<b>Description</b>
Background and Environmental Influences	Environmental factors and personal experiences that shaped the individual's decision to pursue an academic career (before faculty career).
Academic freedom	Choose which directions our research heads, follow my own curiosity, freedom to be able to do the research that you wanted, flexibility that this job actually gives you
Elementary school	First grade, when I was 12
Faculty	Decided to become once I even had the job, getting interviews at good places, when you get a job
Fallback	Pursued other careers first such as high school teaching, industry, lecturing but not enjoying it,
First generation	First generation
Graduate school	Right at the end of PhD, during graduate school
Immediate family	Family is a faculty member, professor or an academic
Job-scarcity	City that did not have a lot of other things to do for a chemist, two jobs in the same place
Mentor or Role model	Had a mentor, worked with female faculty member, positive mentors, support from mentor, good college instructors, enjoy mentoring younger students, ability to mentor undergraduates and younger graduate students, harsh professors, great first grade teacher
Being a mentor	Serving as a mentor to others
Having a mentor	Experiencing having either positive and or negative mentors and role models
No mentor or role model	Not having mentors or role models

Postdoc	During/after being a postdoc
Scientific curiosity	Like research, scientific curiosity, really understood why research is so exciting, independence and creativity and being able to really pursue what one wants to do, come up with some exciting research questions, enjoy research, having a great research experience
Teaching experience	Good at teaching, enjoyed being a teaching assistant, great teaching assistant experience, like teaching, love to teach, able to teach.
Undergraduate	As an undergraduate student
Supports and Barriers Experienced	People or systems surrounding women faculty that have/will help(ed) or hinder(ed) them in their academic career.
Barriers	
Administrative Issues	Not getting support for administrative stuff like collecting credit card receipts and uploading them, following up on grants, grant monitoring, managing people and/or the interpersonal conflicts, administration don't care
Burnout or Mental Health	Responsibilities taking mental toll on you, responsibilities leading to burnout or stress, negative feedback draining you
Childcare as Barrier	Expensive childcare, not enough childcare support from partners, taking time off to have children, insufficient maternity leave, no childcare on campus, long waitlist
Hostile environment	Environment that is not supportive of everyone, not welcoming, unhealthy competitiveness
Implicit bias	Judged more harshly than men, having to do more service than men, assigned more committees to be on, less credit for more service done
Harsh comments	Getting harsh review comments because due to gender, not getting papers published due to gender, demeaning comments, negative feedback from colleague or students

Higher Standards	having to do more service than men, assigned more committees to be on, less credit for more service done, standard set for women are different or high, women have to be perfect compared to male colleagues
Salary or Startup	System set up for salary negotiation which women may not be good at, equitable salaries
Stereotypical Assumption	People assuming your role by your gender, being mistaken for a secretary or an administrative assistant, or a graduate student, diversity hire, biased teaching evaluation, sexism, not wanting to hire you because of pregnancy, professors are expected to have a certain appearance or demeanour.
Intersectional Identity	Intersectional identity making you tokenized or appear as a diversity card, making you feel not belonged
Isolated Community	Not having a community in the department, people not checking up on others, no one to share success stories with
Limited Resources	Not getting grants funded, not having enough funds to run a research group, limited financial or infrastructural resources, no career growth associated with limited professional development, not being paid in summer
Many Responsibilities	Dealing with logistics around making students happy such as makeup quiz or exam, responding to student emails, more service expectations which does not necessarily help you as a scientist, research acknowledged than other duties such as teaching and service, a lot of responsibilities leading to burnout, being responsible for many things,
Mentorship as Barrier	No mentorship, not being mentored at a point in your career, getting mentorship, people walking away from science due to informal mentorship, not showing weakness to mentors, mentors or advisors saying you won't amount to much
Negative Self-perception	Tough anxiety, self-doubt, people you respect saying things that make you self-doubt
Parental leave policy	Vague family policy, no parental leave

Poor Policy Implementation	Teaching relief policy being like double-edged sword, biased policies that favours others more than others, policies that are not implemented effectively, problematic reimbursement policy
Professional travels	Traveling for professional development
Tenure	Tenure was stressful, tenure was hard, difficult tenure process, vague tenure process, no laid down procedure or rule for tenure, various factors affecting tenure attainment
Underrepresentation as Barrier	Less or few faculty women in department, underrepresentation in terms of gender or race and ethnicity
Work-life Balance as Barrier	Not having work-life balance needed for family and work
Needed Support	Supports to help women in academia
Base Startup Package	Have same startup package or salary as men
Childcare as Needed Support	University having childcare, no waitlist for childcare, partners bring supportive in childcare, childcare at conferences, funds for childcare at conferences, being assigned times that favours daycare drop-off and pick-up times, paid parental leave, subsidize childcare
Community as Needed Support	Having a cohort of women, department paying for weekly coffee hour for the community
Deliberate Hiring	Department being deliberate or intentional in hiring processes
Effective tenure clock extension	Having enough tenure clock extensions, increase startup fund for tenure clock extension
Empowerment	Efforts, actions, or conditions that enable women to express their perspectives, contribute to decision-making processes, confidence empowerment
Enforcement	Rule or Policy Enforcement

Enough Resources	Department having or getting enough infrastructural and financial resources to support and retain women faculty, equitable resources
Equitable Opportunities and Promotions	Same or equal opportunities and promotions for all
Fair Assignment	Equitable service assignment, fairness in assignments, equitable workload
Family Leave	Having good family leave
Formal Written Policies	Have transparent formal written policies
Implicit bias training	Training faculty on implicit bias, people in power getting to be aware of fairness in assigning responsibilities
Retirement	Old people refuse to retire, people getting to know details on retirement packages or the process to retire, informal retirement process, retirement process kept a secret, unwritten retirement procedure
Support Career Couple	Support dual career couple
Supportive Mentors	Having supportive mentors, strong or supportive network, mixture of formal and informal mentorship, mentors you would feel comfortable sharing all things with, developing mentorship programs
Transparent job conversations	Being transparent about what faculty job is like and bringing out the positive aspects as well, structure and transparency around expectations
Work-life Balance as Needed Support	Creating work-life balance environments in academia
Support	Things that support success in an academic career

Community as Support	A network to support each other, have a community
Familial support	Support from family in academic career journey
Flexibility	Flexibility in working hours
Grants and Awards	Get or win awards, nominated for awards, get a grant, submitting grant
Love teaching, research or service	Intrinsic motivation to teach, Joy in teaching, teaching as a calling, like or love research or service
Maternity leave	Maternity leave that helps faculty keep their personal identity as well as their professional identity
Mentorship as Support	Mentors to talk to, mentors to get advice from, had mentors, supportive mentors
On Campus childcare	University having on-campus childcare
Positive feedback	Getting positive feedback from others
Positive impact	Having positive impact on students, postdocs and the community
Professional Development	Having professional development opportunities
Resources	Infrastructural resources, financial resources that supports career
Student or Mentee Interactions	Interactions or working with students or mentees making you feel fulfilled, watching students grow and succeed
Teaching relief policy	University or department have teaching relief policy
Tenure	Written criteria for tenure, tenure clock extension, structured tenure procedure
Transparent Hiring	Clear and transparent hiring process

Underrepresentation as Support	Underrepresentation favouring one's career
Welcoming Environment	Welcoming environment to ensure there is diversity
Systemic Measure or Policies	Cultural Norm or Social Dynamics, Detrimental Measures, Disciplinary Standards, Disciplinary Standards, Expectations or Requirements, Institutional or Departmental Policy, Physical Infrastructure
Cultural Norm or Social Dynamics	Unwritten social rules, beliefs, and power dynamics within academic institutions or departments that shape faculty experiences, belonging, and behaviour
Detrimental Measures	Systemic measures or policies that are against most of the odds or success of women
Disciplinary Standards	Academic norms, methods, and ethical expectations specific to a faculty member's field that influence how research, teaching, and scholarly contributions are evaluated
Expectations or Requirements	Formal and informal standards faculty are expected to meet in roles such as teaching loads, research output, service contributions, or mentoring duties.
Inclusivity Workshops	Workshops that focus on making sure that people are accepted, welcomed, and inclusive,
Institutional or Departmental Policy	Formal institutional rules and procedures that govern faculty roles, rights, and responsibilities including employment conditions, benefits, leave entitlements, tenure processes, evaluation protocols, maternity leave, tenure clock extension
Physical Infrastructure	Physical resources and facilities available to faculty that support their academic work, well-being, and inclusion on campus, on campus day care
Specific Awards	Awards that help faculty succeed
Unaware Systemic Measures or Policies	Not aware of policies or systemic measures

**Note:** Deductive/a-priori codes include systemic measure or policies, background and environmental influences and supports and barriers experienced, derived from our research questions and theoretical framework. All other codes were developed inductively from the data. Inductive codes mostly include words from participants’ experiences while deductive codes are mostly code definitions.

Table S.3 Summary of themes, a-priori codes, and representative inductive codes from faculty narratives

<b>Theme</b>	<b>A-priori Code/SCCT Construct</b>	<b>Example Inductive Codes</b>
Formative Influences and Early Motivations (1)	Background and Environmental Influences	Elementary school, Undergraduate, Graduate school, Postdoc, Scientific curiosity, Teaching experience, Immediate family, First-generation, Mentor or Role model, Having a mentor
Career Entry and Evolution: Decisions and Turning Points (2)	Background and Environmental Influences	Fallback, Faculty, Job-scarcity, Transparent job conversations, Deliberate Hiring, Support Career Couple
Navigating Academic Pathways: Personal Decisions and Reflections (3)	Background and Environmental Influences	Love teaching, research or service, Negative self-perception, Burnout or Mental Health, Empowerment, Flexibility, Being a mentor
Mentorship as a Double-Edged Sword (4)	Supports and Barriers	Mentorship as barrier and support, Supportive Mentors, No mentor or role model, Having a mentor, Being a mentor
Work-Life Integration and Care Responsibilities (5)	Supports and Barriers	Childcare as barrier, Parental leave policy, Maternity leave, Family Leave, Work-life Balance as barrier, Professional travels, Many Responsibilities, On Campus childcare
Institutional Barriers and Systemic Inequities (6)	Supports and Barriers	Implicit bias, Harsh comments, Stereotypical

		Assumption, Higher Standards, Hostile environment, Salary or Startup, Administrative Issues, Tenure as barrier, Underrepresentation as barrier, Limited Resources, Isolated Community
Policy Awareness and Implementation Gaps (7)	Supports and Barriers	Institutional or Departmental Policy, Formal Written Policies, Unaware Systemic Measures or Policies, None helped, Poor Policy Implementation, Enforcement
Supports Enabling Career Sustainability (8)	Supports and Barriers	Community as Needed Support, Community as Support, Welcoming Environment, Positive feedback, Grants and Awards, Professional Development, Equitable Opportunities and Promotions, Transparent Hiring, Enough Resources, Fair Assignment, Effective tenure clock extension, Teaching relief policy, Support Career Couple

## Appendix A. Additional Methods

### Participant selection

A dataset of academic profiles was obtained from the Diversify Chemistry website. This dataset included detailed information about academic faculty, such as their names, affiliated institutions, country of affiliation, email addresses, current positions, gender identity, and areas of expertise. The dataset was refined to retain pre- and post-tenured women faculty affiliated with institutions in the United States. Email addresses of other pre- and post-tenured female faculty from randomly selected institutions across the U.S were added to the list. The final dataset included faculty from 99 institutions, representing a total of 227 individuals who were invited to participate in the study. An invitation email containing a survey link was sent to these faculty members. The survey served to screen participants based on their identification as women faculty. Those who expressed interest in participating were subsequently sent consent forms to complete and return before being scheduled for interviews. All faculty members who identified as women and expressed interest in the study were sent consent forms, and only those who signed and returned them were interviewed. After interviewing the first ten participants, additional factors such as race/ethnicity, academic

rank, and field of interest were considered to ensure diverse representation among participants. This approach aimed to capture a broad range of perspectives and experiences among women faculty. Given the underrepresentation of historically underrepresented groups (HUGs) by race/ethnicity in prior studies, this study aimed to oversample participants from these groups. However, only a limited number of faculty identifying as HUGs in terms of race/ethnicity expressed interest in participating (see **Table 1**). Ultimately, a total of 20 women faculty participated in this study from 17 institutions across the US. It should be noted that some participants identified as female and others identified as women in terms of gender identity. The term “woman” or “women” are used throughout this paper for consistency. Also, two participants identified with two race/ethnicity.

## Appendix B. Interview protocol

Thank you for participating in this interview. Today, I’ll be asking you questions about why you chose your current career as a profession over other careers. Questions are based on your past and current experiences towards your journey as a research-intensive faculty member.

The structure of the interview will be in three phases. First, I’ll ask some set of questions in regard to your past experiences that contributed to you becoming a faculty member and your current experiences that contribute to your career progression. Then, I’ll also ask you some questions about the systemic barriers you have experienced either directly or indirectly in your academic journey. Finally, I’ll ask questions on the measures in place to help women succeed in your department or institution.

Even if I don’t get through all the planned questions I have, I’ll make sure we wrap up by [*time*] unless you say otherwise; is that okay with you?

At any point in time in the interview, you have the chance to withdraw from the study if you feel you said things that made you uncomfortable.

Do you have any questions about the purpose of the study or your participation in this study before we begin?

### Interview Questions

1. At which stage in your career journey did you decide to become a faculty?
2. What influenced your decision in choosing the faculty career path?
  - i. *If no experience is mentioned, What experiences contributed to your decision to pursue an academic career?*
  - ii. *What experiences made you think you can be a faculty member?*
  - iii. *What experiences/accomplishment did you achieve that made you think you could achieve the outcome of becoming a faculty?*
  - iv. *To what extent did other people’s accomplishment make you think you could achieve the outcome of becoming a faculty?*
  - v. *How did your interactions with other people make you think you could achieve the outcome of becoming a faculty?*

3. Thinking about the aspects of your daily job, what encourage or discourage you from your current career?
  - i. *If no experience is mentioned, Could you elaborate on some experiences that encourage or discourage you from your current career?*
  - ii. *Are these some of the things you expected to see happen before you became a faculty?*
4. What are the things you hope/need to achieve in your career?
  - i. *Are the things you just mentioned things you hope to achieve, or they are things you need to achieve?*
  - ii. *Is there any reason you hope or need to achieve these (if rationale not mentioned)*
5. Could you briefly tell me about the progress you've made towards this goal (the things you hope or need to achieve)?
  - i. *What experiences make you think you can achieve them/it?*
  - ii. *What experiences/accomplishment have you achieved that makes you think you can achieve the outcome (the things you hope or need to achieve)?*
  - iii. *To what extent does other faculty accomplishment make you think you can achieve the outcome (the things you hope or need to achieve)?*
  - iv. *How do your interactions with other people make you think you can achieve the outcome (the things you hope or need to achieve)?*
6. What primary systemic measures (e.g., disciplinary standards, policies, expectations/requirements, physical infrastructure, cultural norms, social dynamics) contribute to your success as a woman faculty?
  - i. *Do you think these systemic measures are serving their intended purposes?*
  - ii. *Any personal experience as to why you say so?(If not mentioned)*
7. How do you think women faculty in chemistry departments can be supported to succeed and remain in academic careers – please note that this can be from your experience or experiences of your colleagues?
8. Is there any other aspect of your career experiences that you'd like to provide additional insights relating to being a woman faculty in chemistry, which we haven't covered or may have addressed insufficiently?