



Patching the Pipeline: A Five-Year Evaluation of a Faculty Leadership Development Initiative

Angela D. Carter, Clemson University
Cynthia Sims, University of Georgia
Stephen Brown, III, Clemson University

Abstract: This study evaluates the Wayfinder Program, a five-year, equity-centered leadership development initiative at a research-intensive university in the southeastern United States. Guided by a theory of change framework, the summative evaluation examined short-term outcomes in leadership identity and equity awareness, medium-term engagement through applied action research, and long-term outcomes related to promotion, leadership advancement, and retention of women faculty. Data sources included participant surveys, institutional records, program documentation, and action research reports. Of the 112 participants, 67% identified as women. Participants reported increased capacity to recognize and address gender bias and carried out projects that applied equity learning to institutional settings. Over the five years, 38% of participants were promoted and 29% moved into formal leadership roles. While overall retention (86%) was slightly below the university average, women were more likely to stay or advance to senior roles elsewhere. These modest but meaningful gains show the need for institutional structures that can support and sustain equity-informed leaders.

Keywords: gender equity, leadership, leadership development, STEM representation, leaky pipeline, higher education

Patching the Pipeline: A Five-Year Evaluation of a Faculty Leadership Development Initiative

Imagine a university as a pipeline system engineered to develop talent, nourish innovation, and channel potential into leadership roles. For many male faculty, the flow from pre-tenured faculty member to senior academic leader flows smoothly and uninterrupted. For women faculty, however, the system leaks, and at each critical junction through tenure, promotion, and administrative leadership, opportunities seep away due to structural inequities, cultural bias, and institutional blind spots (Cech & Blair-Loy, 2019; Goulden et al., 2011; Johnson, 2017). Research consistently shows that women faculty are more likely than men to encounter slower rates to promotion (Bülbül, 2021), face disproportionate pressure related to caregiving responsibilities (Henley, 2015), and leave academia altogether (Spoon et al., 2023). This phenomenon, described as the 'leaky pipeline,' captures how systemic barriers drive the attrition of women from academic career paths at disproportionate rates, resulting in their persistent underrepresentation in senior leadership roles (Metcalf, 2010).

Leadership development has increasingly been identified as a strategic intervention to address the systemic barriers that contribute to the leaky pipeline. While much of the scholarship on academic career progression has focused on tenure and promotion, leadership development represents a distinct and often overlooked phase in the pathway to influence and decision-making power in the academy (Shang et al., 2022). When carefully designed, gender-focused leadership programs have the potential to interrupt patterns of exclusion by equipping women and men with the skills, networks, and critical consciousness needed to navigate institutional dynamics (Bierema, 2017). However, not all programs are equally effective. Leadership development efforts must be sure to attend to the unique challenges women face, including navigating organizational politics, balancing caregiving responsibilities, and confronting implicit bias, while also addressing

institutional cultures that have historically privileged male leadership archetypes (Bierema, 2017; Ellemers et al., 2012).

Recognizing the potential of leadership development as a catalyst for change, Upstate University, a research-intensive institution located in the southeastern United States, sought to address these persistent inequities within its own academic pipeline, especially for faculty in science, technology, engineering, and mathematics (STEM) fields. Despite ongoing efforts to recruit and retain a more diverse faculty, Upstate University found these populations to be significantly underrepresented in senior leadership roles. In 2016, the university was awarded a National Science Foundation (NSF) ADVANCE grant to support institutional transformation through targeted strategies to promote gender equity (NSF, 2012). With this funding, the university launched the Wayfinder program, a five-year initiative designed to prepare women faculty for leadership and strengthen the institutional structures that support equitable advancement.

In this article, we evaluate the Wayfinder Program as a model for addressing gender inequity in academic leadership. Building on the metaphor of the university as a pipeline system, our central question asks whether this initiative helped repair the institutional “leaks” that lead many women to exit the leadership track. At Upstate University, these leaks have historically appeared as patterns of stalled promotion and higher attrition among women faculty, particularly in STEM fields and leadership-adjacent roles. We argue that leadership development, when intentionally designed to confront structural barriers, can function as a targeted intervention to address these inequities.

To ground our analysis, we begin with a review of existing research on faculty mobility, leadership pathways, and gender-focused development initiatives. We then use Theory of Change and summative evaluation frameworks to assess the program’s five-year impact, examining not only the efficacy of its design elements but also outcomes such as promotion, retention, and leadership advancement. This approach allows us to evaluate both the mechanisms and the effects of the program within its institutional context. We conclude by considering the Wayfinder Program’s

potential as a replicable model for equity-centered leadership development in higher education.

Literature Review

Since the early 1800s, when first entering U.S. higher education as students and later as faculty and staff, women have faced persistent inequities and systemic barriers compared to their male counterparts, who have historically held greater institutional power (Bain & Cummings, 2000). Although women now earn over 40% of STEM master's and doctoral degrees (NSF, 2019), they remain significantly underrepresented in senior faculty and leadership roles. These disparities reflect deeply embedded patterns of exclusion that continue to shape access, advancement, and recognition in the academy. In this section, we draw on interdisciplinary scholarship to examine barriers to women's advancement in academic STEM. We follow that with a review of the programmatic designs, theoretical frameworks, and institutional practices that support gender-equitable leadership development.

Structural and Cultural Barriers in the STEM Pipeline

A growing body of research documents the structural and cultural barriers that contribute to women's attrition from academic STEM careers. These include implicit bias (Moss-Racusin et al., 2012) and gender stereotypes that shape perceptions of competence and leadership potential (Logel et al., 2009). Women in STEM often encounter inequitable resource distribution like smaller labs and lower salaries (Lodish, 2015) and have limited access to mentors and developmental networks that are critical for advancement (Robbins & Fikes, 2017; Bierema, 2017). Academic environments frequently remain masculinist in orientation, reinforcing norms that marginalize women and limit inclusive participation (Morley, 2013). These challenges are further intensified for those with caregiving responsibilities, particularly parenting, which continues to disproportionately hinder women's academic careers (de Wet, 2010; Goulden et al., 2011). This disparity is even more pronounced among underrepresented racial and ethnic groups, where barriers intersect and intensify.

Black and Hispanic women, who comprise less than 5 percent of tenured faculty in the United States (U.S. Department of Education, National Center for Education Statistics, 2016), face lower promotion rates, reduced access to mentorship, and diminished institutional support (Griffin, 2019).

These patterns reflect systemic inequities, not isolated incidents. For example, Moss-Racusin et al. (2012) found that faculty search committees rated male applicants as more competent and hireable than identically qualified female applicants, indicating implicit gender bias in hiring evaluations. Similarly, Reuben et al. (2014) found that candidates perceived as men were more likely to be hired for math-intensive roles, even when their actual performance was identical to that of women candidates. This underscores how gender, and, by extension, intersectional bias continues to shape academic evaluation and decision-making processes across the STEM pipeline (Williams et al., 2016; Wynn & Correll, 2018).

Leadership Development as a Strategic Response

Traditional approaches to women's leadership development have often relied on individual-level interventions aimed at enhancing women's skills rather than dismantling the systems that marginalize them. Bierema (2003) critiques these models for focusing narrowly on competence-building without addressing the gendered structures of organizational power. This "add women and stir" strategy, as Meyerson & Fletcher (2000) describe it, risks reinforcing exclusionary norms by assuming that gender is, or ought to be, irrelevant to leadership development.

Other models take a different path, emphasizing the need to adapt women to existing leadership norms. These approaches acknowledge that gender plays a role but frame the challenge as a deficit within women themselves. Such programs assume that women have not been socialized to thrive in male-dominated environments and therefore must acquire the skills and behaviors their male colleagues have long internalized (Meyerson & Fletcher, 2000).

Simply placing more women in senior roles without challenging gendered assumptions about leadership is also not a sufficient solution. As Ellemers et al.

(2012) caution, such efforts can actually hinder both individual advancement and collective progress. Emerging scholarship increasingly advocates for leadership development programs that prioritize systemic transformation. Santiago and Bartesaghi (2022) argue that overreliance on individual capacity-building allows institutions to avoid the more difficult, but necessary, work of cultural change. Moreover, many existing programs fail to account for the distinct challenges women face, including navigating institutional politics, balancing competing demands, and negotiating their identities within male-dominated environments (Bierema, 2017).

In contrast, more effective models draw on frameworks from human resource development (HRD), adult learning, and organizational development (Bierema et al., 2024). HRD is a field concerned with work-related learning and development at the individual, group, and organizational levels, encompassing training, career development, and organizational development, and often, criticality (Watkins & Marsick, 1989; Bierema et al., 2024). Such programs integrate experiential learning, critical reflection, and gender consciousness to raise awareness of structural barriers while supporting personal and institutional transformation (Ely et al., 2011). The use of feminist and critical theory frameworks help participants interrogate how policies and practices that are often framed as neutral, reproduce inequity (Bierema, 2003, 2017, Bierema et al., 2024). Programs that emphasize “small wins” (Meyerson & Fletcher, 2000) enable participants to take strategic actions that challenge inequities while building momentum for broader change.

Curricula that include subject matter where women are traditionally excluded, such as finance, athletics, construction, and negotiation, help prepare participants for a broader range of leadership responsibilities (Kellogg, 2020). Exposure to these areas expands participants’ readiness to lead across diverse institutional contexts. In addition, peer learning and professional networks play a critical role in surfacing institutional inequities and fostering collective advocacy (Thomas & Hughes, 2025).

Designing Inclusive and Effective Leadership Development

While many gender equity leadership initiatives focus on increasing representation, sustainable transformation requires institutional commitment across all genders. Research shows that even modest increases in gender awareness among men can influence their engagement with equity initiatives (Herring & Marken, 2008). Myers et al. (2023) argue for equipping male participants with tools to recognize implicit bias, understand gender disparities, and promote inclusive practices in their spheres of influence. Programs that foster dialogue, reflection, and accountability can help men shift from passive allies to equity-minded leaders (Ueda et al., 2023).

In addition, programs should bridge the gap between conceptual knowledge and organizational change by providing opportunities for practical application. The Center for Creative Leadership's widely used 70-20-10 model suggests that leadership learning is most effective when 70% occurs through challenging assignments, 20% through developmental relationships (e.g., mentoring, sponsorship, coaching), and 10% through formal training (Wilson et al., 2011). Programs using this model understand that leadership is learned not only through content but through situated, applied experiences that support growth (Baldwin et al., 2011).

Project-based learning is one such approach that integrates theory with leadership practice. Applied projects, such as institutional interventions or community-based consulting, offer participants opportunities to engage in ethical dilemmas, power-sharing, risk-taking, and collaborative problem-solving (Cain & Cocco, 2013; Allen & Shehane, 2016). Experiential models such as Kolb's (1984) learning cycle and participatory methodologies like participatory action research (Kekäle & Pirttilä, 2006) also offer powerful tools for equity-based leadership development. Action research emphasizes iterative cycles of planning, action, and reflection, allowing participants to address problems of practice while co-constructing knowledge and solutions (Coghlan & Brannick, 2010; Kemmis et al., 2014). As Coghlan and Brannick (2010) describe, these cycles typically involve constructing an issue, planning action, taking action, and evaluating outcomes.

Finally, literature shows that effective gender equity leadership development must be relational, reflective, and rooted in practice. With this foundation in mind, we now turn to the design and implementation of the Wayfinder program to explore how these principles were operationalized.

Context and Program Overview

This study focuses on Upstate University, a large R1 doctoral-granting institution with 28,747 students and 110 graduate programs as of Fall 2023 (Office of Institutional Research, 2022; U.S. News, 2025). Despite the university's strong STEM reputation, gender disparities remain evident. In 2022, women represented 35% of faculty overall but only 19% in STEM fields (Office of Institutional Research, 2023). Women held just 22% of executive leadership roles and 10% of STEM dean or associate dean positions. Additionally, underrepresented minority faculty made up only 7.2% of the total faculty, highlighting broader systemic inequities (Office of Institutional Research, 2022, 2023; Jones, 2016). To address these disparities, Upstate University applied for and received a National Science Foundation ADVANCE grant in 2016 to support institutional transformation toward gender equity in STEM (NSF, 2017). The Wayfinder program, formally titled the Provost's Leadership Development and Mentoring Initiative for Faculty, was created under this initiative. While mentoring was a component, our focus here centers on the program's leadership development dimension. Other works from this program have been published elsewhere (Sims et al., 2020a; Sims et al., 2020b; Carter et al., 2020; Sims et al., 2021).

Program Structure and Content

Wayfinders was delivered through monthly, half-day sessions from early fall through late spring. From 2017 to 2019, sessions were held in person and transitioned to a virtual format from 2020 to 2022 in response to the COVID-19 pandemic. The program was primarily developed and facilitated by Human Resource Development (HRD) faculty, with support from campus-based staff and subject

matter experts. Sessions were scheduled on Fridays to enhance accessibility and participation.

The program blended leadership theory, reflective practice, and applied action research. Instructional strategies included leadership assessments (e.g., MLQ, DISC), case studies, simulations such as Barnga (Thiagarajan & Thiagarajan, 2011), and panel discussions with university leaders. Participants identified issues relevant to their institutional contexts, selected the topics they wanted to address, and used action research as the primary method for implementing their projects. These participant-driven leadership projects focused on advancing gender equity in academia and included topics such as post-tenured faculty needs, workload transparency, retention of women graduate students in STEM, access to lactation rooms, and bias in teaching evaluations. Other projects explored inclusive teaching language, integrated mentoring models, faculty well-being during COVID-19, and fostering a stronger sense of belonging.

Each project followed the Coghlan and Brannick (2010) action research cycles of constructing, planning, taking action, and evaluating, with each phase intentionally embedded into the program's monthly structure. Table 1 outlines the sequence of topics, activities, and alignment with the action research cycle.

Table 1

Wayfinder Program Overview By Month

Month	Topic	Activities	Focus	AR Cycle
September	Program Kickoff & Foundations of Leadership	"Where I'm From" poem (Lyon, 1999), case study discussion, panel with university leaders	Community- building, program orientation, understanding Upstate University's ADVANCE mission, and reflecting on	

Month	Topic	Activities	Focus	AR Cycle
			leadership perceptions	
October	Culture, Bias, and Adaptive Leadership	Barnga simulation, implicit bias testing, adaptive leadership session with Upstate University case (Thiagarajan & Thiagarajan, 2011)	Exploring cultural assumptions, recognizing bias, and distinguishing adaptive vs. technical challenges	
November	Transformational Leadership & Communication Styles	Introduction to Transformational Leadership, MLQ 360 assessments	Identifying leadership behaviors and reflecting on feedback to guide growth	
December	Servant Leadership & Leadership Project Planning	Servant leadership session (film- based), project conceptualization using action research (AR)	Connecting values-based leadership with equity-focused project design	Conceptualizing
January	Women's Leadership and Leadership in Cultural Contexts	Sessions on women in leadership and cultural dimensions using	Understanding gender and cultural influences on leadership practices	Constructing

Month	Topic	Activities	Focus	AR Cycle
		the Culture Wheel		
February	Communication, DISC Profiles & Negotiation	DISC assessment debrief, negotiation skills practice using BATNA and case scenarios (Beenen & Barbuto Jr., 2014)	Enhancing communication styles and advocating in biased contexts	Planning action
March	Conflict Management	Conflict coaching using a structured narrative model	Applying coaching tools to navigate interpersonal and systemic conflict	Taking action
April	Change Leadership & Equity in Workload	Panel discussions on leading change and equitable workload distribution (Winslow & Davis, 2016)	Institutional change strategies and policy advocacy	Evaluating outcomes

The program culminated in project presentations and reflective capstone activities. Over time, Wayfinder evolved in response to participant feedback, shifting institutional priorities, and broader contextual changes such as the COVID-19 pandemic.

Methods

This study presents a retrospective summative evaluation of the Wayfinder program, examining its design, implementation, and outcomes over five academic years (2017–2022) through a Theory of Change (ToC) framework. The ToC approach supports program leaders in articulating the assumptions behind their leadership development efforts by mapping the connections between specific activities and intended outcomes (Watkins et al., 2011). This process clarifies how and why change is expected to occur.

We used summative evaluation, or “evaluation for impact” (Habig & Hoole, 2015, p. 93), to assess the program’s overall effectiveness in advancing women faculty into leadership roles and fostering institutional transformation. Our approach was further informed by Bustelo’s (2017) feminist evaluation framework, which urged us to remember the importance of maintaining a gender+ perspective throughout the evaluation process, not only to assess accomplishments, but also to identify when and how gender considerations are diminished in policy and practice, and to re-center them when necessary. Together, these perspectives enabled us to examine both the impact of the program and the causal mechanisms and contextual factors shaping participants’ experiences.

Research Questions

This evaluation explored two central questions. First, what short- and medium-term outcomes did participants experience as a result of the Wayfinder program, including changes in leadership identity, equity awareness, and application of inclusive practices? Second, to what extent did participation in the Wayfinder program contribute to longer-term outcomes such as promotion, leadership advancement, and retention, particularly for women faculty?

Wayfinder Logic Model

The Wayfinder logic model, shown in Figure 1, visualizes the program’s theory of change, identifying the program’s key components, beginning with its core inputs,

such as leadership assessments, equity leadership philosophy statements, faculty cohorts, and structured support for action research. Program activities included leadership workshops, peer mentoring, case-based instruction, and collaborative action research projects. These activities generated outputs including completed leadership assessments, reflective statements, and the development of action research plans. These outputs were expected to lead to short- and intermediate-term outcomes, such as increased leadership self-awareness, adoption of inclusive leadership practices, and faculty-led efforts to promote institutional change. Ultimately, the program aimed to contribute to long-term impacts including improved promotion and retention of women faculty, the institutionalization of equity-centered leadership practices, and broader cultural transformation in leadership norms.

Figure 1*Wayfinder Logic Model*

Wayfinders: Provost's Mentoring Initiative for Faculty Logic Model: Goal 4, Enhance Faculty Leadership Development					
Inputs What is invested? Faculty - Wayfinders Administration - Provost & Direct Reports - ADVANCE leadership, staff, graduate / undergraduate assistants Time 2017-2022 Resources - Budget Materials - Leadership Workshops - Books - Case studies - Inventories - Participant materials - Surveys	Program Design Interventions - Leadership Theory - Instruments - Activities - Case Studies - Speakers - Panels Format - Face to face and virtual - Individual and small group Delivery - Frequency of meetings - Duration of meetings - Duration of program - Record of meetings				
	Month	Sample Activities			
	September	(a) (d) Leader gender bias case study			
		(a) Leadership panel			
	October	(c) Adaptive Leadership			
	November	(a) Transformational Leadership and MLQ			
	December	(a) Social Justice Leadership			
	January	(a) (b) Implicit Bias Training			
	February	(a) Servant Leadership			
	March	(a) Women's Leadership			
	(b) Negotiation and conflict management to mitigate 2 nd generation bias				
April	(c) (a) Change Leadership				
	Lead a culture of inclusion & equity including: (e) champion family friendly policies and (c) work life balance/ equitable workloads				
May	(a-d) Program Finale, Leadership Panel				
	(a) Leadership Philosophy presentation				
	(a) Action Research Project Presentations				

Short Term Outcomes/Impact		Long Term Outcomes/Impact	
Goal 4, Purpose Establish a pipeline mechanism for improving the representation of women in institutional leadership roles and develop leaders committed to improving the status of women scholars. Program Goals a. Develop faculty who will recognize and apply leadership theories and skills to successfully conduct gender equity initiatives on campus b. Recognize equitable workload distribution c. Recognize and reduce gender bias d. Recognize policies that support families		Faculty - Enhance faculty leadership development (a) - Increase the recruitment and retention of women and marginalized faculty (a & b) - Cultivate campus climate and institutional culture by raising awareness and reducing bias (c) - Promote equitable workload distribution (b) - Champion family friendly policies (d) Upstate University - Transformational change - Sustainable ongoing faculty leadership development programs	

Program Evaluation			
Who	What	How	Output
Wayfinders	Participation rate; Satisfaction with program activities	Survey	Attendance Satisfaction Scores Interviews
Wayfinders Others	Given common scenarios, Wayfinders will (a) (c) identify the leadership skills needed to facilitate gender equity and mitigate gender bias (b) (d) identify and facilitate solutions to address equitable workload distributions and those which support families.	Case studies/ Pre & post leadership surveys	Gain scores
Wayfinder Action research (AR) Projects	Lead AR projects geared toward gender equity	Project implementation	# and quality of projects; institutionalization

Data Sources and Collection

This summative evaluation employed a mixed-methods design using multiple sources of data to assess both implementation and outcomes. Program records from 2017 to 2022 were reviewed to understand the structure and content of Wayfinder,

as well as to document participant engagement. These records included attendance logs, curriculum materials, and summaries of action research projects.

Institutional data on faculty promotion and retention were analyzed to examine patterns of career progression. These data were disaggregated by gender and discipline to assess whether participants experienced different trajectories compared to the broader faculty population. Demographic and career progression data, including information on rank, department, and job transitions over time, were obtained from the university's Office of Institutional Research. This data also allowed us to assess retention, specifically whether participants remained at the university at higher rates than non-participants.

An end-of-program survey conducted in 2022 provided additional insight into participant experiences. Survey questions focused on perceptions of program effectiveness, relevance to leadership development, and the value of specific curriculum elements. This combination of institutional records, program documentation, and participant feedback offered a comprehensive view of the program's reach and effectiveness.

Participant Population

The study sample included 112 faculty members who participated in one of five Wayfinder cohorts between 2017 and 2022. Each cohort comprised 15 to 25 faculty selected through an application process that included a CV, statement of interest, and departmental or college support letter. The first year focused on mid-career, tenure-track faculty, but eligibility later expanded to include faculty of all ranks and appointment types, including non-tenure-track roles. Across cohorts, 67% (n = 75) of participants identified as women and 33% (n = 37) as men. Participants were drawn from all seven colleges and the libraries, with the largest representation from the Colleges of Science and Engineering.

Results

This section presents the results of the summative evaluation, organized by the Wayfinder logic model's outcome domains: short-term outcomes (participant satisfaction and learning), intermediate outcomes (leadership engagement and behavior change), and long-term outcomes (career advancement through promotion and retention). Data sources included five years of program records, post-session and post-program surveys, and institutional data on faculty rank and employment status. In answering the two research questions, (1) What short- and medium-term outcomes did participants experience as a result of the Wayfinder program, including changes in leadership identity, equity awareness, and application of inclusive practices? (2) To what extent did participation in the Wayfinder program contribute to longer-term outcomes such as promotion, leadership advancement, and retention, particularly for women faculty? We document these outcomes through a summative evaluation grounded in the program's logic model and theory of change, focusing on short-term learning outcomes, medium-term career advancements, and early indicators of institutional impact.

Short-Term Outcomes: Participant Satisfaction and Learning

Consistent with the program's short-term goals of increased satisfaction, equity literacy, and leadership self-awareness, participants reported strong satisfaction across all five years. Post-session surveys were administered electronically to all participants via the learning management system following each monthly session. Using a five-point Likert scale, participants responded to four statements assessing session goals, instructional relevance, applicability, and overall satisfaction.

The overall satisfaction rating averaged 4.43 out of 5.00 (88.6%) across all years. Annual means ranged from 4.05 in the program's first year to 4.59 and 4.60 in Years 3 and 4, respectively. Sessions on implicit bias consistently received the highest ratings, earning perfect scores of 5.0 in Years 4 and 5. In contrast, early sessions on gender and leadership received the lowest scores, averaging 3.68 in

Years 1 and 2. Full session ratings, including yearly means and highest and lowest scoring topics, are presented in Table 2.

Table 2

Satisfaction Survey Results

Year	Satisfaction (%)	High (topic)	Low (topic)
2017-2018	4.05 (81.0%)	4.25 (kick-off session)	3.68 (gender & leadership)
2018-2019	4.48 (89.6%)	4.75 (negotiation)	4.36 (finale)
2019-2020	4.59 (91.8%)	5.00 (conflict coaching)	4.08 (finale)
2020-2021	4.41 (88.2%)	5.00 (implicit bias)	3.80 (introduction session)
2021-2022	4.60 (92.0%)	5.00 (implicit bias, change leadership)	4.05 (adaptive leadership)
Overall	4.43 (88.6%)		

A post-program survey conducted in 2022 gathered 37 responses, representing a 33% response rate, which is considered low (Wu et al., 2022). Demographic data show that most respondents identified as women (72%) and as White (89%), with others identifying as Asian (6%), Black (3%), or Hispanic (1%). The majority were between the ages of 30 and 59, married or cohabitating, and held doctoral degrees (89%). This profile reflects a typical respondent as a middle-aged, White woman with a doctorate, as shown in Table 3.

Table 3

Sample Survey Demographics

Category	N	Percent	Category	N	Percent
<i>Gender</i>			<i>Age</i>		
Female	26	72%	30-39	10	29%
Male	10	28%	49-49	11	31%
<i>Race</i>			50-59	10	29%
White	31	89%	60-69	4	11%

Black	1	3%	<i>Education</i>		
Asian	2	6%	Master	4	11%
Hispanic	1	3%	Doctorate	33	89%
<i>Marital Status</i>					
Single	9	26%			
Married	24	69%			
Cohabiting	2	6%			

Intermediate Outcomes: Leadership Engagement and Behavior Change

To assess intermediate outcomes, specifically participants' ability to apply leadership knowledge and engage in equity-driven change, the Wayfinder program emphasized action research as a practical and collaborative tool for leadership development. Participants received formal training in the action research model, which involves iterative cycles of constructing, planning, taking action, and evaluating (Coghlan and Brannick (2010)). Each cohort designed and implemented projects that addressed institutional challenges related to gender equity. For example, the 2019–2020 cohort focused on post-tenure support, workload transparency, retention of women in STEM graduate programs, and access to lactation rooms on campus. The 2020–2021 cohort revisited post-tenure needs, evaluated bias in student teaching evaluations, and explored faculty work-life balance during COVID-19. This cohort successfully advocated for the removal of a biased teaching evaluation item, an outcome that was later published as an institutional case study (Aragón et al., 2023). The 2021–2022 cohort prioritized initiatives related to mentoring integration, staff well-being, and faculty belonging.

In total, 12 action research projects were implemented over three years, demonstrating the program's capacity to bridge leadership theory and practice. Participants reported that action research fostered practical problem-solving skills and supported deeper engagement with institutional equity work. Project development and peer exchange were integrated into monthly sessions, further reinforcing applied learning and behavioral growth.

To evaluate how participants translated learning into practice, a post-program survey was distributed in 2022 to all Wayfinder participants ($n = 112$), with 37 responses (33% response rate). This six-item instrument, which also captured short-term learning attitudes, included questions targeting the transfer of leadership behaviors and practices to the workplace. Using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), respondents rated their experiences across several behavioral dimensions. In Table 4, participants rated highly that “the program provided strategies to recognize and reduce gender bias” (mean=3.59, or 71%).

Table 4

Learning Attitude Results

Item	Rating (of 5.00)	Std Dev	Percent
The program provided strategies to recognize and reduce gender bias	3.59	1.189	71%
The program content was relevant and useful	3.46	1.192	68%
The program met my leadership and development needs	3.24	1.192	64%
The program provided solutions to increase retention of women and minority faculty	2.97	1.166	58%
The program provided ways to create transformational change at the university level	2.89	1.149	57%
Overall	3.23		65%

As shown in Table 5, the highest-rated item was “The program helped me identify a leadership gap or blind spot” (mean = 3.57, or 71%). Other highly rated items included gaining a guided framework for reducing gender and racial bias (3.54). The overall mean across all items was 3.47 (69%), indicating a moderate but meaningful perception of growth in leadership engagement and equity-related behaviors.

Table 5*Behavior Results*

Item	Rating (out of 5.00)	Std Dev	Percent
The program helped me identify a leadership gap or blind spot	3.57	.987	71%
The program provided me with a guided way of thinking about myself and my role in helping reduce gender and racial bias at the university	3.54	1.145	71%
The program promoted and facilitated my ongoing growth and development to lead others in a fair and equitable way	3.54	1.120	71%
The program has a measurable positive impact on my leadership development	3.24	1.300	65%
Overall	3.47		70%

Long-Term Outcomes: Career Advancement and Retention

To assess the program's long-term impact on career mobility, we analyzed changes in participants' academic rank and leadership status before and after completing the Wayfinder program. Institutional data were used to determine promotions in rank, appointments to formal leadership roles, and whether participants remained employed at the university during and after the program period.

Promotion and Leadership Advancement

Among the 112 faculty participants from 2017 to 2022, 38% (n = 43) received a rank promotion (e.g., assistant to associate professor, lecturer to senior lecturer), and 29% (n = 33) were appointed to formal academic leadership roles (e.g., department chair, director, assistant dean). A majority of these changes occurred in the three years following program participation. The remaining 53% (n = 59) experienced no change in formal title or rank during the study period. Full promotion and leadership appointment data are detailed in Table 6.

To explore gendered trends in advancement, we disaggregated the data by gender identity (see Table 7). Of the 112 participants, 67% (n = 75) identified as women and 33% (n = 37) as men. Women were slightly more likely than men to achieve rank promotion (69% of those promoted were women, compared to 31% men, a +2 difference) and were substantially more likely to attain leadership roles (73% of leadership appointees were women vs. 27% men, a +6 difference). In contrast, men were overrepresented among those whose rank or role remained unchanged (37% of the no-change group, compared to their 33% representation, a +4 difference). These patterns suggest that the program had a stronger effect on promoting the advancement of women faculty, consistent with its gender equity goals.

Table 6

*Leadership Development Program Participants' Promotion Data, Years 2017
2022*

	Year					Total	Sub Total	Percent
Change in Rank	2017	2018	2019	2020	2021			
Assistant to Associate	6	5	1	2	0	14		
Research Asst to Associate	0	1	0	0	1	2		
Associate to Professor	7	4	2	1	0	14		
Lecturer to Senior Lecturer	0	1	2	3	1	7		
Senior Lecturer to Principal	0	1	2	2	0	5		
Assistant Librarian to Associate	0	1	0	0	0	1	43	38%
Academic Leader								
Research Assistant to Academic Leader	0	0	0	0	1	1		
Associate to Academic Leader	7	3	5	2	0	17		

	Year					Total	Sub Total	Percent
Professor to Academic Leader	4	2	4	0	1	11		
Senior Lecturer to Academic Leader	0	1	1	1	1	14		
Librarian to Academic Leader	0	0	1	0	0	1	33	29%
Retired								
Ref Librarian Retired	1	0	0	0	0	1	1	1%
No Change (No Ch.)								
Assistant No Ch.	0	2	3	4	0	9		
Research Assistant No Ch.	0	0	0	0	1	1		
Clinical Assistant No Ch.	0	0	0	0	1	1		
Associate No Ch.	5	6	5	2	3	21		
Professor No Ch.	4	6	3	1	1	15		
Alumni Professor No Ch.	0	0	0	1	0	1		
Professor & Academic Leader No Ch.	0	1	1	0	0	2		
Lecturer No Ch.	0	2	1	1	0	4		
Senior Lecturer No Ch.	0	0	0	2	1	3		
Associate Librarian No Ch.	0	0	1	0	0	1		
Lab Coordinator No Ch.	0	0	0	1	0	1	59	53%
Total	34	36	31	23	11	137		

Table 7

*By Gender, Leadership Development Program Participants' Promotion Data,
Years 2017-2022*

Promotion Type	Year					Total	Percent Average Promotion Type	
	2017,8	2018,9	2019,20	2020,21	2021,22			
Female	20	21	15	12	7	75	67%	
Male	8	9	8	8	4	37	33%	
All	28	30	23	20	11	112	100%	
								Compared to Gender Average Plus + or - Minus
<i>Change in Rank</i>								
Female	9	8	3	6	3	29	69%	+2
Male	4	4	2	2	1	13	31%	-2
<i>Academic Leader</i>								
Female	7	5	2	3	2	19	73%	+6
Male	3	1	2		1	7	27%	-6
<i>No Change</i>								
Female	4	12	10	6	4	36	63%	-4
Male	2	6	4	6	3	21	37%	+4

Retention and Turnover

To assess retention, we used institutional data from Upstate University's Office of Institutional Research (2023) to track whether participants remained employed at the university as of 2023. Of the 112 Wayfinder participants, 97 were retained, resulting in a program-wide retention rate of 86.6%. Fifteen participants (13.4%) left the university. For comparison, the turnover rate for all faculty at Upstate University

between 2017 and 2021 (excluding retirement and death) was 7.4%, based on 545 faculty departures out of a total of 7,373.

Table 8

Leadership Development Program Participants' Retention & Turnover Rates by Year and Over Time

	2017	2018-	2019	2020	2021	Total	Percent	All	Percent
	-18	19	-20	-21	-22	2017		Faculty	
						-22		2017	
								-22	
No of	28	30	23	20	11	112	100	7373	100.0
Participants									
Retained as of	22	25	20	19	11	97	86.6		92.6
2023									
Turnover as of	6	5	3	1	0	15	13.4	545	7.4
2023									

Among those who left, we categorized exits based on available data regarding their subsequent roles. Five participants (5%) accepted promotional opportunities at other institutions, such as moving from professor to department chair or from associate professor to academic dean. Four participants (4%) accepted lateral roles at other universities, maintaining their rank (e.g., associate professor to associate professor). Three participants (3%) left for positions outside of higher education, and the employment status of another three could not be determined (see Table 9 for individual-level detail).

Turnover data were also analyzed by gender. Eight of the 15 departing participants were women (53%), and seven were men (47%). However, when considered relative to their representation in the overall program population (67% women and 33% men), women were underrepresented among those who left, while men were overrepresented. Specifically, women accounted for 53% of departures but made up 67% of the program, while men made up 47% of departures but only 33% of the total participants—a 14-point swing in each direction. These findings suggest

that Wayfinder may have had a stronger retention effect for women than for men, despite women comprising the majority of participants.

Table 9 provides detailed information about faculty who left, including cohort year, gender, starting and ending titles at Upstate University, and (where known) their title at a subsequent institution. These data show that many departures were career-enhancing, particularly for those who transitioned into higher leadership roles, reinforcing the program's broader goal of building leadership capacity even beyond the institution.

Table 9

Detail Turnover Information

Cohort Year	Termination Year	Gender	Beginning Job Title	Job Title at Termination	2024 Job title at subsequent University	Promotion	Lateral
2017	2019	M	Assoc Prof	Assoc. Prof	Prof	1	
	2022	M	Assoc Prof	Prof	Prof & Chair	1	
	2021	M	Assoc Prof	Prof & Chair	Dean	1	
	2023	M	Prof	Director	Prof		1
	2021	F	Asst Prof	Assoc Prof	Assoc Prof		1
	2023	M	Assoc Prof	Assoc Prof	Assoc Prof		1
2018	2020	F	Lecturer	Lecturer	Asst Director	1	
	2019	F	Assoc Prof	Assoc Prof	Prof	1	
	2020	F	Lecturer	Lecturer	unknown		
	2019	F	Assoc Prof	Assoc Prof	Prof	1	
	2019	M	Resch Asst Prof	Resch Assoc Prof	Asst Prof	1	
2019	2019	F	Asst Prof	Asst Prof	Asst Prof		1
	2021	M	Asst Prof	Asst Prof			1
	2022	F	Asst Prof	Asst Prof			1
2020	2023	F	Lab Coord	Lab Coord	Lab Prep Mgr	1	
2021	none	none	none	none	None		
						8	6

These findings collectively illustrate how the Wayfinder program contributed to individual learning, professional advancement, and localized institutional change. Participants reported increased awareness of equity issues, applied their learning through action research, and experienced notable career mobility, especially among women faculty. At the same time, retention patterns and feedback on institutional impact suggest that individual growth did not always translate into systemic transformation. The following discussion explores these outcomes in greater depth, examining the program's implications, limitations, and the broader lessons it offers for equity-focused leadership development in higher education.

Limitations and Delimitations

This study had several limitations. First, participation in the leadership development program required faculty to apply and provide a letter of support from their department. As a result, the participants were self-selected and may not represent the broader faculty population at the university. These individuals likely had a stronger desire to seek leadership roles compared to the general faculty.

Second, it is important to distinguish between two types of surveys used in the program. Session-level surveys were administered immediately following each monthly session to gather formative feedback and were consistently well responded to. In contrast, the survey used in this study was a post-program evaluation distributed one to three years after participants completed the program. Because of the longer time lapse and the retrospective nature of the questions, the response rate for this post-program survey was considerably lower than that of the session-level instruments. Third, gender data were collected in binary categories (women and men) and did not fully account for gender identity or the experiences individuals with differing gender identities. This limits the extent to which findings can speak to gender diversity beyond the binary. Additionally, some participants expressed reluctance to be identified in the data, particularly those who were the “only” woman or person of color in their department, which may have further reduced the response rate.

Discussion and Implications for Practice and Research

The Wayfinder program was designed to intervene at a critical juncture in the leadership pipeline, particularly for women faculty who often face stalled advancement in mid-career. Over five years, the program demonstrated its capacity to address individual-level leaks in the pipeline by strengthening participants' leadership identities, fostering awareness of systemic inequities, and enhancing their ability to lead with an equity lens. Participant satisfaction remained consistently high, with average session ratings of 4.43 out of 5 (88.6%), peaking in year five at 4.60. Retrospective survey data indicated that the most highly rated outcome was the ability to recognize and reduce gender bias (3.53 out of 5.0), though participants expressed less confidence in their ability to drive institutional transformation (2.87 out of 5.0), a not unexpected tension depending on positionality.

A defining feature of Wayfinder was the implementation of action research projects that tackled localized equity challenges, such as bias in teaching evaluations, mentoring practices, and family accommodations. These projects were not hypothetical but enacted interventions developed and executed by participants in their own academic contexts. Some led to visible institutional changes, such as the removal of a biased evaluation item, while others served as exploratory efforts that raised awareness or piloted equity-informed practices. "Small wins" (Meyerson & Fletcher, 2000) reflect an important dimension of pipeline repair: building localized momentum for cultural and policy shifts. The program's theory of change anticipated this dynamic, recognizing that equipping individuals with the tools and opportunity to act is necessary, but not sufficient, for broader institutional transformation. The cohort model also fostered relational learning and expanded the program's reach across all seven colleges, surpassing its gender equity target with 67 percent women participants.

Institutional outcomes further illuminate where the pipeline was effectively patched, and where it continues to leak. Of the 112 faculty participants from 2017 to 2022, 38% (n = 43) received a rank promotion (e.g., assistant to associate

professor), and 29% (n = 33) were appointed to formal academic leadership roles (e.g., department chair, director, assistant dean). Women slightly outpaced men in both categories, with a +2% advantage in promotions and +6% in leadership roles and were less likely to remain stagnant in their roles. Additionally, women were more likely to leave for senior leadership positions at other institutions, suggesting increased mobility and external recognition. While some may view this as talent loss, it also reflects program success in preparing equity-minded leaders who were ready and sought after for advancement.

However, the overall retention rate for Wayfinder participants (86%) was modestly lower than the institutional average (92%). Of the 15 faculty who left, more than half secured promotions at other institutions. Interestingly, men exited at a proportionally higher rate, raising questions about how the program may have influenced leadership aspirations, perceptions of institutional fit, or broader career goals. These findings invite reflection: Did the program affirm some participants' readiness for change while revealing the institution's limited capacity to support them? Rather than interpret retention in binary terms, these patterns highlight the complexity of pipeline interventions and the interplay between individual growth and institutional context.

Evaluating programs like Wayfinder is inherently difficult, particularly when assessing behavioral change or systemic impact. In this case, the evaluation relied on self-reported data, retrospective surveys, and the documented implementation of action research. Measuring subjective growth in equity leadership was complicated by participant fatigue with traditional assessments. Future evaluations may benefit from more developmental and qualitative tools (Watkins et al., 2011) that capture change over time and center participants' lived experiences.

Our analysis was guided by Bustelo's (2017) feminist evaluation framework, which emphasizes applying a gender+ lens throughout the evaluation process. This perspective helped us in our examination of not only what the program accomplished, but also when and how gender and equity were centered, constrained, or sidelined. We disaggregated data by gender, explored the differential impact of institutional

supports, and reflected on issues of visibility and voice. This evaluative stance revealed both the program's progress in disrupting parts of the pipeline and the deeper institutional inertia it could not overcome.

Although Wayfinder supported a variety of applied equity projects and contributed to individual career advancement, it lacked consistent institutional infrastructure to sustain or scale these efforts. Many projects remained localized, not due to lack of relevance or potential, but because formal policy pathways and long-term resource commitments were not in place. As a result, the broader impact of these initiatives was limited. These contextual factors are essential for interpreting retention and mobility outcomes. While the program effectively supported women's advancement into leadership, its long-term impact depended on the institution's ability to retain and support those leaders. Whether faculty departures reflect preexisting trajectories or shifts influenced by the program, the findings reinforce the need to pair leadership development with structural reform (Bierema, 2003; Santiago & Bartesaghi, 2022).

For other institutions and designers of gender-equitable leadership development programs, Wayfinder offers a promising model of equity-centered leadership development, one that combines cohort-based learning, applied research, and systemic awareness. Its design demonstrates a scalable framework for addressing career trajectories and fostering inclusive leadership. Yet the program also reveals a cautionary truth that leadership initiatives alone cannot fully patch the pipeline. Sustainable progress requires alignment between individual development and institutional commitment, with the infrastructure to support equity-minded leaders long after the program ends (Bierema, 2017).

Conclusion

The Wayfinder program demonstrated that leadership development centered on equity, critical reflection, and applied learning can produce significant outcomes for both individuals and institutions. Faculty deepened their leadership identities, built awareness of gender inequities, and translated that awareness into action through

context-specific projects. While modest in scale, these outcomes illustrate the potential of intentional design to disrupt entrenched norms and equip faculty to lead with purpose. At the same time, Wayfinder's limitations reveal the difficulty of advancing equity within rigid institutional systems. Leadership programs alone cannot drive transformation; their impact depends on broader commitments, policies, resources, and organizational structures that sustain inclusive leadership beyond a single intervention.

The Wayfinder faculty leadership development program offered more than professional development; it provided a diagnostic view of the leadership pipeline itself. Its outcomes suggest that preparing leaders is only part of the work, and that institutions must also be ready to support and retain them. While the program did not seal every leak in the pipeline, it helped reimagine how such a pipeline could be built. Drawing on human resource development theory and practice, Wayfinder was intentionally designed to foster critical reflection, build cross-disciplinary community, and support applied action research. Programs like Wayfinder show that when leadership development emphasizes equity, inquiry, and relational learning, it can move beyond isolated interventions to build stronger, more inclusive pipelines that not only leak less, but lead somewhere new.

References

- Allen, S. J., & Shehane, M. R. (2016). Exploring the language of leadership learning and education. *New directions for student leadership*, 151, 35-49.
- Aragón, O. R., Pietri, E. S., & Powell, B. A. (2023). Gender bias in teaching evaluations: the causal role of department gender composition. *Proceedings of the National Academy of Sciences*, 120(4), e2118466120.
- Bain, O., & Cummings, W. (2000). Academe's glass ceiling: Societal, professional-organizational, and institutional barriers to the career advancement of academic women. *Comparative Education Review*, 44(4), 493–514.
<https://doi-org.libproxy.clemson.edu/10.1086/447631>
- Baldwin, T. T., Pierce, J. R., Joines, R. C., & Farouk, S. (2011). The elusiveness of applied management knowledge: A critical challenge for management educators. *Academy of Management Learning & Education*, 10(4): 583-605.
- Beenen, G., & Barbuto Jr, J. E. (2014). Let's make a deal: A dynamic exercise for practicing negotiation skills. *Journal of education for business*, 89(3), 149-155.
- Bierema, L.L. (2003). The role of gender consciousness in challenging patriarchy. *International Journal of Lifelong Education*, 22(1), 3-12.
- Bierema, L.L. (2017). No woman left behind: Critical leadership development to build gender consciousness and transform organizations. In *Handbook of research on gender and leadership* (pp. 145-162). Edward Elgar Publishing.
- Bierema, L.L., Sim, E., & He, W. (2024). No woman left behind: critical feminist leadership development to build gender consciousness and transform

- organizations. In *Handbook of Research on Gender and Leadership* (pp. 130-150). Edward Elgar Publishing.
- Bülbül, S. (2021). Glass ceiling in academia revisited: Evidence from the higher education system of turkey. *International Journal of Sociology*, 51, 87–104. <https://doi.org/10.1080/00207659.2021.1881872>
- Bustelo, M. (2017). Evaluation from a gender+ perspective as a key element for (re) gendering the policymaking process. *Journal of Women, Politics & Policy*, 38(1), 84-101.
- Cain, K., & Cocco, S. (2013). Leadership development through project based learning. *Proceedings of the Canadian Engineering Education Association (CEEAA)*.
- Carter, A. D., Sims, C., & Moore de Peralta, A. (2020). Blazing the trail: A qualitative case study of mentoring in a gender equity leadership development program. *The Journal of Business Diversity*, 20(2), 35–49. <https://doi.org/10.33423/jbd.v20i2.2898>
- Cech, E. A., & Blair-Loy, M. (2019). The changing career trajectories of new parents in STEM. *Proceedings of the National Academy of Sciences*, 116(10), 4182–4187. <https://doi.org/10.1073/pnas.1810862116>
- Coghlan D, Brannick T (2010) Doing action research in your own organization, 3rd edn. Sage Publications, London
- De Wet, C. (2010). Victims of educator-targeted bullying: A qualitative study. *South African Journal of Education*, 30(2).

- Ellemers, N., Rink, F., Derks, B., & Ryan, M. K. (2012). Women in high places: When and why promoting women into top positions can harm them individually or as a group (and how to prevent this). *Research in organizational behavior*, 32, 163-187.
- Ely, R. J., Ibarra, H., & Kolb, D. M. (2011). Taking gender into account: Theory and design for women's leadership development programs. *Academy of management learning & education*, 10(3), 474-493.
- Goulden, M., Mason, M. A., & Frasch, K. (2011). Keeping Women in the Science Pipeline. *The ANNALS of the American Academy of Political and Social Science*, 638(1), 141–162.
- Griffin, K. A. (2019). Institutional barriers, strategies, and benefits to increasing the representation of women and men of color in the professoriate: Looking beyond the pipeline. In L. W. Perna (Ed.), *Higher education: Handbook of theory and research* (pp. 1–73). Springer. https://doi.org/10.1007/978-3-030-11743-6_4-1
- Habig, J., & Hoole, E. (2015). Evaluating coaching interventions. *The Center for Creative Leadership Handbook of Coaching in Organizations*, 81-112.
- Henley, M. M. (2015). Women's success in academic science: Challenges to breaking through the ivory ceiling. *Sociology Compass*, 9, 668–80. <https://doi.org/10.1111/soc4.12291>
- Herring, S. C., & Marken, J. A. (2008). Implications of gender consciousness for students in information technology. *Women's studies*, 37(3), 229-256.

- Johnson, H. L. (2017). *Pipelines, pathways, and institutional leadership: An update on the status of women in higher education*. American Council on Education.
- Jones, B. (2016). ADVANCE Proposal to the National Science Foundation.
- Judge, D. S. (1998). Who succeeds in science?: The gender dimension. *The Quarterly Review of Biology*, 73, 258–259. <https://doi.org/10.1086/420302>
- Kekäle, J., & Pirttilä, I. (2006). Participatory action research as a method for developing leadership and quality, *International Journal of Leadership in Education*, 9:3, 251-268, DOI: 10.1080/13603120600741359
- Kellogg, B. T. (2020). *The ACE women's leadership agenda: 2009-2019*. American Council on Education.
- Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner: Doing critical participatory action research*. Springer.
- Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and development*, Prentice Hall, Englewood Cliffs NJ.
- Lodish, H. F. (2015). Accommodating family life: mentoring future female faculty members. *Trends in cell biology*, 25(3), 109-111.
- Logel, C., Walton, G. M., Spencer, S. J., Iserman, E. C., von Hippel, W., & Bell, A. E. (2009). Interacting with sexist men triggers social identity threat among female engineers. *Journal of personality and social psychology*, 96(6), 1089.
- Lyon, G. E. (1999). Where I'm from: Where poems are from. Absey & Co.

- Metcalf, H. (2010). Stuck in the pipeline: A critical review of STEM workforce literature. *InterActions: UCLA Journal of Education and Information Studies*, 6(2).
- Meyerson, D. E., & Fletcher, J. K. (2000). A modest manifesto for shattering the glass ceiling. *Harvard business review*, 78(1), 126-136.
- Morley, L. (2013). The rules of the game: Women and the leaderist turn in higher education. *Gender and education*, 25(1), 116-131.
- Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J., & Handelsman, J. (2012). Science faculty's subtle gender biases favor male students. *Proceedings of the national academy of sciences*, 109(41), 16474-16479.
- Myers, K., George, S., Danell, A. S., & Morehead, A. T. (2023). Bringing the Men Back In: Catalyzing Gender Equality at Universities Through Advocates & Allies. *Sociologica*, 17(2), 37-57.
- National Science Foundation (2012) ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE) Program Solicitation, NSF 12-584.
<https://www.nsf.gov/pubs/2012/nsf12584/nsf12584.htm>
- National Science Foundation, National Center for Science and Engineering Statistics. (2017). Women, Minorities, and Persons with Disabilities in Science and Engineering: 2017 (17-310).

National Science Foundation (2019). National Center for Science and Engineering Statistics. Women, Minorities, and Persons with Disabilities in Science and Engineering: 2019 (Special Report 19-304).

Office of Institutional Research. (2023). Fact Sheet 2022. Upstate University.

Office of Institutional Research. (2024). Fact Sheet 2023. Upstate University.

Robbins, G., & Fikes, B. J. (2017). 2 top female scientists sue Salk Institute for gender discrimination. *The San Diego Union-Tribune*. Retrieved February 2020, from <https://www.sandiegouniontribune.com/news/science/sd-me-salk-lawsuit-20170713-story.html>

Reuben, E., Sapienza, P., & Zingales, L. (2014). How stereotypes impair women's careers in science. *Proceedings of the National Academy of Sciences*, 111(12), 4403-4408.

Santiago, A., & Bartesaghi, M. (2022). "It's not enough to hold that power": The Gendering of Advice in Corporate Discourse. *Advancing Women in Leadership*, 41(1).

Shang, J., Zeng, M. B., & Zhang, G. P. (2022). Investigating the mentorship effect on the academic success of young scientists: An empirical study of the 985 project universities of China. *Journal of Informetrics*, 16, 01285. <https://doi.org/10.1016/j.joi.2022.101285>

Sims, C., Carter, A.D., Frady, K., Moore de Peralta, A., Hofrova, A., & Brown, S. (2020a). Furthering women faculty in higher education leadership roles: A

- human performance case study. *Performance Improvement Quarterly*, 34(4), 395–426. <https://doi.org/10.1002/piq.21353>
- Sims, C., Carter, A. D., Moore de Peralta, A., Hofrova, A., & Brown, S. (2020b). Advancing gender equity through mentoring and leadership development: A human performance technology case study. In N. Burns & D. Van Tiem (Eds.), *Cases on performance improvement innovation* (pp. xxx–xxx). IGI Global.
- Sims, C., Carter, A. D., & Moore de Peralta, A. (2021). Do servant, transformational, transactional, and passive-avoidant leadership styles influence mentoring competencies for faculty? A study of a gender equity leadership development program. *Human Resource Development Quarterly*, 32(1), 55–75. <https://doi.org/10.1002/hrdq.21408>
- Spoon, K., LaBerge, N., Wapman, K. H., Zhang, S., Morgan, A. C., Galesic, M., Fosdick, B. K., Larremore, D. B., & Clauset, A. (2023). *Gender and retention patterns among U.S. faculty*. *Science Advances*, 9(42).
- Thiagarajan, S., & Thiagarajan, R. (2011). *Barnga: A simulation game on cultural clashes*. Nicholas Brealey.
- Thomas, G. & Hughes, S. (2025) Women's Leadership Development: The Need, the Impact, the Future, *Women & Therapy*, 48:1, 24-48, DOI: 10.1080/02703149.2025.2455825
- Ueda, N., Kezar, A. & Holcombe, E. (2023). Shared Equity Leadership: A New Model for Making Inclusion and Equity Part of Organizational Culture. In Barnes, J., Stevens, M.J., Ekelund, B.Z. and Perham-Lippman, K. (Ed.) *Inclusive*

Leadership: Equity and Belonging in Our Communities (Building Leadership Bridges, Vol. 9), Emerald Publishing Limited, Leeds, pp. 3-13.

U.S. Department of Education, National Center for Education Statistics. (2016). *Full-time faculty in degree-granting postsecondary institutions, by race/ethnicity, sex, and academic rank: Fall 2011, fall 2013, and fall 2015* (Table 315.20). *Digest of Education Statistics*.

https://nces.ed.gov/programs/digest/d16/tables/dt16_315.20.asp

U.S. News & World Report. (2025). *Best colleges rankings*. Retrieved from <https://www.usnews.com/best-colleges>

Watkins, K. E., Lysø, I. H., & deMarrais, K. (2011). Evaluating executive leadership programs: A theory of change approach. *Advances in Developing Human Resources*, 13(2), 208-239.

Watkins, K., & Marsick, V. (1989). Paradoxes human resource developers face. *Management Education and Development*, 20(1), 47-55.

Williams, J. C., Phillips, K. W., & Hall, E. V. (2016). Tools for change: Boosting the retention of women in the STEM pipeline. *Journal of Research in Gender Studies*, 6(1), 11.

Wilson, M., Van Velsor, E., Chandrasekar, A., & Criswell, C. (2011). Grooming top leaders: cultural perspectives from China, India, Singapore and the United States. Retrieved from Center for Creative Leadership website: <http://www.ccl.org/Leadership/pdf/research/GroomingTopLeaders.pdf>

- Winslow, S., & Davis, S. N. (2016). Gender inequality across the academic life course. *Sociology Compass*, 10(5), 404-416.
- Wu, M. J., Zhao, K., & Fils-Aime, F. (2022). Response rates of online surveys in published research: A meta-analysis. *Computers in Human Behavior Reports*, 7, 100206.
- Wynn, A. T., & Correll, S. J. (2018). Combating Gender Bias in Modern Workplaces. In B. Risman, C. Froyum, & W. Scarborough (Eds.), *Handbook of the Sociology of Gender*. New York: Springer.