Research Article

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Sponsorship, Social Capital, and Faculty Mentoring in Social Sciences: A Case Study

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Abstract: This study explores the impact of a sponsorship program on the social capital development of women faculty in social and behavioral sciences (SBS) at a research-intensive institution. The program, part of a broader institutional effort funded by an NSF ADVANCE grant, aimed to address gender disparities in promotion and tenure. Using action research methodology, the study analyzes data from protégé reports and surveys to identify how program elements—such as mentor selection, funding, peer engagement, and structured accountability—catalyzed various forms of social capital, including career and intellectual guidance, networking, and emotional support. The findings highlight the program's success in fostering research productivity, career advancement, and retention, while also identifying areas for improvement in mentorship structure and institutional climate. The study contributes to the literature on faculty development by emphasizing the importance of social capital and sponsorship in achieving gender equity in the social sciences.

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Women scientists in social and behavioral sciences (SBS), although well-represented as PhD recipients and at lower faculty ranks, fail to progress to more advanced faculty ranks (Casad et al., 2022; Ginther & Kahn, 2014). Women earn almost 60 percent of all behavioral and social sciences fields—yet, they comprise less than 49 percent of tenured associate professors and less than 38 percent of full professors (NCSES, 2021). Applying an intersectional lens, there is, in fact, less racial/ethnic diversity in SBS than in STEM (Hur et al., 2017)—none of the Asian/Pacific Islander, Black, Latinx/Hispanic women subgroups surpass five percent of tenured associate professors and four percent of full professors (NCSES, 2021).

One key factor may be the discrepancy between the ratio of women to men faculty at lower faculty ranks compared to higher faculty ranks and leadership positions. In fields with more women overall (life sciences and SBS), they are generally concentrated at lower ranks. Women in these areas perceive that they have less chance of career advancement (e.g. promotion to full professor) than men do across disciplines. They also perceive that they have less chance at career advancement compared to women in natural and physical sciences and economics which are fields with fewer women and less discrepancy between women's representation at lower and higher ranks (van Veelen & Derks, 2022).

One common approach to addressing gender disparities, especially in career advancement, is the provision of mentoring. Mentoring has been demonstrated to retain women faculty, while the absence of mentoring contributes to women's attrition (National Academy of Sciences et al., 2007). Mentoring—the "professional, working alliance in which individuals work together over time to support the personal and professional growth, development, and success of the relational partners through the provision of career and psychosocial support" (Byars-Winston & Dahlberg, 2019, p. 37)—fosters academic progress, career advancement, and assimilation to the working environment.

Review of the Literature

Mentoring outcomes are not uniform across disciplines, with extensive research

documenting its benefits in Science, Technology, Engineering, Mathematics, and Medicine (STEMM) fields, where it has been linked to increased productivity, professional independence, and the creation of social capital (Ben-Shachar, 2014; Kashiwagi et al., 2013; Sambunjak et al., 2010; Trower & Bleak, 2004). In contrast, mentoring in SBS fields has been less explored, potentially due to the assumption that women in these areas are sufficiently represented (Rabinowitz & Valian, 2022). However, the challenges faced by women in SBS are unique, including the difficulty of conducting research during the COVID-19 pandemic and the vulnerability associated with studying gender-related issues (Cronley & Ravi, 2021). Mentoring programs for social sciences have been demonstrated to positively impact promotion and tenure (Ginther et al., 2020). Yet, social science faculty are more dissatisfied with mentoring than in other areas (Ovseiko et al., 2019).

Social capital, defined by Bourdieu (1986) as the resources accumulated through networks of relationships, is integral to career advancement in academia. Yet, access to social capital is often structured by systems of race and gender, limiting the opportunities available to women and underrepresented groups. For instance, men are more likely to build research-related social capital, which can lead to career advancement, while women often find their networks limited to socio-emotional support (Van Emmerick, 2006). The concept of social capital has been used to “sketch out the field of higher education as an arena where faculty submit to the rules of the game and seek to play because they want a chance to define, and perhaps to redefine, the stakes that are at stake” (Gonzales, 2014, p. 201). Social capital provides a way to apply an agentic perspective to the faculty career, within the context of the gendered, racialized and other systemic structures that shape the institutions in which those careers play out.

Underrepresented faculty, particularly those at predominantly White institutions (PWIs), frequently experience isolation due to cultural and social disconnection, lack of representation, microaggressions and bias—factors which can limit access to the networks necessary for building social capital (Rabinowitz & Valian, 2022; Randel et al., 2021). Women’s self-identified needs vary by race, and

the needs that typify White women (desire for agency) predominate in the design of mentoring interventions (Wong et al., 2022). Thus, interventions emphasizing needs specific to minoritized populations provide critical avenues for addressing structured inequality (Carter-Sowell et al., 2019a; Carter-Sowell et al., 2019b). One such area is sponsorship.

Sponsorship, a critical aspect to career advancement, is defined as when a person with more social capital champions another person and, thus, provides them access to increasing social capital (Ibarra et al., 2010). Women and underrepresented faculty tend to get access to advice and other aspects of psychosocial support, but not sponsorship (Ibarra et al., 2010; Rabinowitz & Valian, 2022; Rabinowitz & Valian, 2007; Randel et al., 2021). Effective mentoring, which includes sponsorship, provides the guidance, opportunities, and connections needed to navigate the institutional norms and access the resources critical for career progression (Zambrana et al., 2015).

The goal of this paper is to share findings, specific to the needs of social and behavioral scientists, that emphasize a multi-pronged approach to building social capital within the context a formal faculty development and mentoring program—the WVU ADVANCE Sponsorship program. The program applied a constellation approach to mentoring (reviewed in Sorcinelli & Yun, 2010), in which identification of faculty needs drives a developmental network (Higgins & Kram, 2001; Roquemore & Laszloffy, 2008). Thus, in their applications, faculty, referred to as protégés, proposed a specific project whose outcomes would help them attain their next career goal. They selected a sponsor who could help them attain those goals. Protégés received $10,000 grants to cover any expense related to the project (travel, research assistants, equipment, salary, software, training, etc), while sponsors received a set $5,000 honoraria (including travel to visit the protégé) for their one-year commitment. The program included structured accountability and support mechanisms, such as defined timelines, communication plans, quarterly and final reports, peer meetings, and professional development events. Protégés and sponsors signed contracts outlining specific project outcomes, regular contact schedules, and participation

requirements, including travel to each other's institutions. The WVU ADVANCE sponsorship program was based on the Gender Equity Project (GEP) at Hunter College (described in Rabinowitz & Valian, 2007). Protégé identification of their own sponsors was a significant change. In the GEP, faculty participants were assigned a sponsor based on predetermined criteria, such as seniority.

The following research questions guided the study:

RQ 1: How did program structure and design elements impact contributors to social capital?

RQ 2. How did the contributors impact social capital?

Methodology

This study employs action research, embedding the research process within an ongoing change initiative, and using findings to iteratively improve the program while contributing to scholarship in the field (Zuber-Skerritt, 2021). The data are exploratory, and conclusions confined to participants (sponsors and protégés); thus, we provide descriptive statistics, but do not make statistical comparisons. The goal is to explore how protégé experiences in the program contribute to building social capital, particularly through sponsorship. Given the small sample size, we use descriptive statistics where applicable, while avoiding details that could compromise anonymity.

The focus on the experiences of a small group of participants provides the opportunity to study relationships in more detail with the goal of determining how best to support and strengthen mentorship within the context of formal mentoring initiatives. Our interests were drawing from the experiences of protégés to tease apart components of their relationships to better understand how they contribute to the building of social capital, both at the conclusion of the funded portion of the program, as well as some years after to gauge whether relationships persisted and other longer-term impacts.

Site, Participants, and Program Design

West Virginia University (WVU), a Carnegie Research One land-grant

institution, received an NSF ADVANCE Institutional Transformation award (HRD-1007978) in 2010. This award established the WVU ADVANCE Center and supported interventions aimed at improving departmental climate, institutional policies, and practices, including an external mentoring or sponsorship program for women faculty in STEM and SBS disciplines, identified as protégés. When WVU's ADVANCE IT award was funded, despite increases in women hires at the assistant professor level in both STEM and SBS, few women had advanced to full professorships. The disparity was particularly striking in SBS, where only one woman had been promoted to full professor by 2010. The award's focus was, therefore, on the retention and promotion of women faculty in both STEM and SBS. By 2017, the institution successfully achieved these goals. Following the grant completion, the university institutionalized the WVU ADVANCE Center, continuing its research and services. The sponsorship program became part of new faculty start-up packages, as funding was set aside for professional development opportunities. Other supportive practices in work-life integration, recruitment, retention and training were embedded under a new position for an Associate Provost for Faculty Development and Culture.

The WVU ADVANCE sponsorship program ran cohorts in 2011, 2012, 2013, and 2014, for underrepresented and systemically disadvantaged faculty, with funding provided by the institution for all eligible underrepresented faculty outside of the NSF populations. Although the program funded faculty across the institution including STEM, health sciences and humanities, this study focuses on the experiences of nine SBS protégés who submitted final reports or responded to follow-up surveys. Impacts for all protégés have been described elsewhere (Jackson et al., 2017). The final group of nine women were from the following fields—geography (2), political science (5), psychology (1), and linguistics (1). Protégés included one Asian American, one Hispanic/Latinx faculty member, and seven White faculty. Among those, seven were assistant professors and two were associate professors. Nine sponsors provided mentorship—seven women and two men. Five were full professors and three were associate professors. All were White except for one Asian (based on visual inspection of online images).

The WVU ADVANCE Center personnel designed, organized, and managed the structure of the program. The program design required the following from protégés: 1) identifying what the protégé needed to do to attain their next career stage, 2) setting goals to meet those requirements, 3) defining a project (including budget and timeline) whose outcomes would meet those goals, 4) identifying a sponsor who could assist in meeting the goals and 5) establishing a communication plan with the sponsor. The sponsor was normally someone external to the institution (exceptions were made for special cases) and further along in their career (former advisors excluded). Information about the program was circulated through various mechanisms including a listserv for all faculty maintained by the Provost's office, a listserv for women faculty in the specific units of focus for the NSF ADVANCE grant maintained by the ADVANCE Center, and through campus daily news email announcements. A two to three person committee of ADVANCE team members used a rubric based on the selection criteria—key to which was the protégé's articulation of what they needed to do to advance to their next career stage, how their project would help them meet this goal, and how working with their sponsor would facilitate project complete—to score the applications and make selections.

Prior to releasing the award funds, the ADVANCE Center personnel reviewed contract letters submitted by both the protégé and the sponsor. As a condition of funding, protégés and sponsors agreed to specific project outcomes and benchmarks. They established a communication plan for regularly scheduled contacts (face to face, phone, Skype, email, etc.). Sponsors were required to travel to WVU and protégés were encouraged to go to their sponsors' institutions as well.The ADVANCE Center also assisted protégés in managing their funding.

In addition to working with their sponsors, protégés benefited from other elements of the sponsorship program. This included the aforementioned funding for protégés and sponsors. Meetings each semester were held among the current protégés, the fall semester also included the prior cohorts. Each month during the academic year there was an invited speaker, workshop or panel; protégés were required to attend one each quarter. Additionally, the program supported a campus

membership to the National Center for Faculty Development and Diversity (NCFDD). Meetings among the cohort of protégés and workshops including other faculty emphasized interaction among all attendees, as well as information from the WVU ADVANCE Center personnel. The ADVANCE Center personnel organized the cohort meetings and all programming, including management of the campus-wide NCFDD membership and coordinating participation by faculty in the Faculty Success program.

Protégés submitted three quarterly reports and one final report on their progress—documenting how they were progressing toward their goal, activities with their sponsor, adjustments if required, and professional development activities attended. In their final report, they reported their outcomes, including research products, progress towards their goal, and professional development. The ADVANCE Center reviewed and approved the quarterly and final reports, including any needed funding extensions.

Researchers' positionalities

The primary author is a White, queer, cis-gender woman from the Southern US, raised in a fundamentalist religious tradition. She received a PhD in Biology, with a graduate certificate in Women's and Gender Studies, and is currently a professor with an administrative appointment directing the WVU ADVANCE Center. She was a Co-Investigator on the WVU ADVANCE IT award and coordinated the sponsorship program. The other two original coders were internal evaluators for the ADVANCE IT award, thus balancing a perspective directly engaged with designing and implementing the project with two charged to focus on its impact. The second author, a White cis-gender female from a military family, served as a graduate assistant for the internal evaluators for the ADVANCE IT award, while she was completing her PhD in Political Science, providing a perspective from within the social sciences. She is currently a Lecturer at Georgia Southern University. The third author is a White cisgender female who emigrated from Europe in her thirties to pursue higher education in the United States. As a nontraditional scholar and single mother, she

has navigated numerous challenges throughout her academic and professional journey. She served as a graduate student for the WVU ADVANCE Center while completing her PhD in Higher Education, thus providing a perspective informed by higher education theoretical frameworks. She joined the Center after the end of the IT funding and the conclusion of the sponsorship program, and is outside of implementation, evaluation or design of the sponsorship programming. After graduation she began work as a senior researcher at an international consulting firm, where she contributes her cultural expertise to the design, implementation, and evaluation of various federal and state programs aimed at supporting children and youth. All authors coded the data. There was one additional coder—a White, cisgender woman professor of mathematics who served as the internal evaluator for the WVU ADVANCE IT award.

Data Coding and Analysis

The analysis utilized two primary data sources: final project reports for the sponsorship program (years) and the 2018 outcomes survey. The final reports included questions about the benefits of the sponsorship program, with protégés specifying which outcomes were uniquely enabled by the program. The outcomes survey, administered in fall 2018, focused on research products and career advancement, including promotion and tenure. Additional feedback was gathered during member checking sessions in November 2017, where protégés provided input on preliminary concept maps and research findings.

The data were coded and analyzed using Dedoose, a mixed-methods online data analysis platform (Salmona et al., 2019). Excerpts were categorized into three broad themes: relationships with sponsors, experiences with other program aspects, and general outcomes from program participation. An abductive analytic process allowed for the iterative development of codes, drawing from existing literature and protégé experiences (Conaty, 2021).

The analytic process (coding, mind and concept mapping) emphasized consensus-building among four coders to ensure trustworthiness and validity. The

coders represented a range of diverse positionalities pertinent to the project, namely social identity, disciplines, and academic positions. Especially pertinent to the analysis at hand, the coders varied in their relationship to the implementation of the sponsorship program. A consensus based, adjudicated process was used to identify and resolve coding discrepancies specifically to engage the data with this diversity of perspective. Three of the authors were on the code team; an additional coder authored prior work and then left the team.

Codes were developed using the full dataset. The results presented here pertain only to those excerpts from the subset pertinent to this study of women social scientists. The full data set included 1103 excerpts. The current study focuses on 143 excerpts. At each time point, there were three coders. First, the original group of three (first author, second author, internal evaluator) coded an initial subset of excerpts from the full dataset focusing the role of the sponsor. They compared codes and decided on final code applications collectively. At this point the codebook was built and definitions added for each code. Then the excerpts were divided randomly into three groups. Each group was coded by two coders. The three coders then met and discussed each coded excerpt. In cases of disagreement by the two primary coders, the third coder reviewed the excerpt and collectively the full group assigned a final code. Over the course of the process, the coders remained open to the revision of the original code categories, informed more specifically and in greater detail by what protégés needed in the context of this specific program, in line with the abductive approach for the analysis. The internal evaluator left the study, and the third author joined the project to code the other program design elements and outcomes, and then to conduct the specific analysis for the women social scientists using the same process as described above.

To assess the sponsor-protégé relationship, the team coded 49 excerpts detailing sponsor relationships, using a priori codes grounded in Sands et al. (1991) and refined through iterative analysis (details in Jackson et al., 2017). The a priori codes identified five sponsor roles: intellectual guide, career guide, information source, friend, and role model. The framework developed by Sands et al. (1991)

focused on faculty-to-faculty relationships among minoritized groups, which are complicated given that faculty are peers, collaborators, and colleagues, and these relationships cross ranks with the faculty hierarchy. These relationships were similar to those experienced by our participants, whose sponsors were mostly in academia and largely from the same academic and disciplinary communities.

To evaluate the impact of other program design elements, 37 excerpts were coded into categories such as funding, peer engagement, ADVANCE Center support, and professional development events. For assessing program outcomes, 46 excerpts were coded for research products such as publications, books contracts or books, funded grants, awards, invited presentations, editorships, elected officers, service on professional committees, service on review panels, and successful students attributed to the program. Eleven additional excerpts captured broader program impacts, including career vision, confidence, and research focus.

Concept and mind mapping were employed iteratively to develop higher-order relationships among the codes (Davies, 2011). Concept maps require explication using propositions leading to an organization largely paralleling sentence-type explanation (Larkin & Simon, 1987). Mind maps are diagrams that emphasize relationships among ideas and, thus, capture patterns that are more conceptual (Larkin & Simon, 1987). This stage of the analysis took three rounds.

The first was development of a concept map for sponsor roles from the full data set. This initial concept map focused on the outcomes obtained by protégés from each kind of sponsor role (friend, career guide, intellectual guide, role model). This concept map was shared for member checking in November 2017 and was then refined based on protégé feedback and further analysis by the research team.

Second, the concepts were identified and relationships were restructured as a mind map by the second author, with input and discussion from the other authors. The mind map emphasized the pathways through which the program design influenced social capital development and career outcomes. Other program elements and parameters were introduced to identify how programmatic design elements impacted the outcomes.

The third step was conducted by discipline, in this case women in SBS disciplines, to allow for investigation of discipline specific impacts. To develop the final model specific for women social scientists for this study, the set of 143 excerpts from women social scientists were extracted. During this process, protégés were placed in relevant branches of the map and quoted data included for context. The authors revisited the data sources holistically to allow for the full grasp of the protégés' responses. The concepts/themes from the full data set concept map were evaluated against the clustered response for the SBS disciplinary grouping and the themes were adopted as is, dropped, or modified to capture the impacts specific to this group of protégés.

Finally individual social science protégés were traced through the specific pathways of the map as a way of ascertaining impact in terms of how the protégés articulated their outcomes as well as how many protégés experienced particular pathways. Then the lead author went back to the data sources and traced each individual protégé's coded responses through all of the pathways of the final mind map to allow for the application of weights, indicating how prevalent that particular pathway was across the whole data set. The other authors provided feedback to the final map, focusing on trustworthy representation of the themes from the collective coding process.

Findings

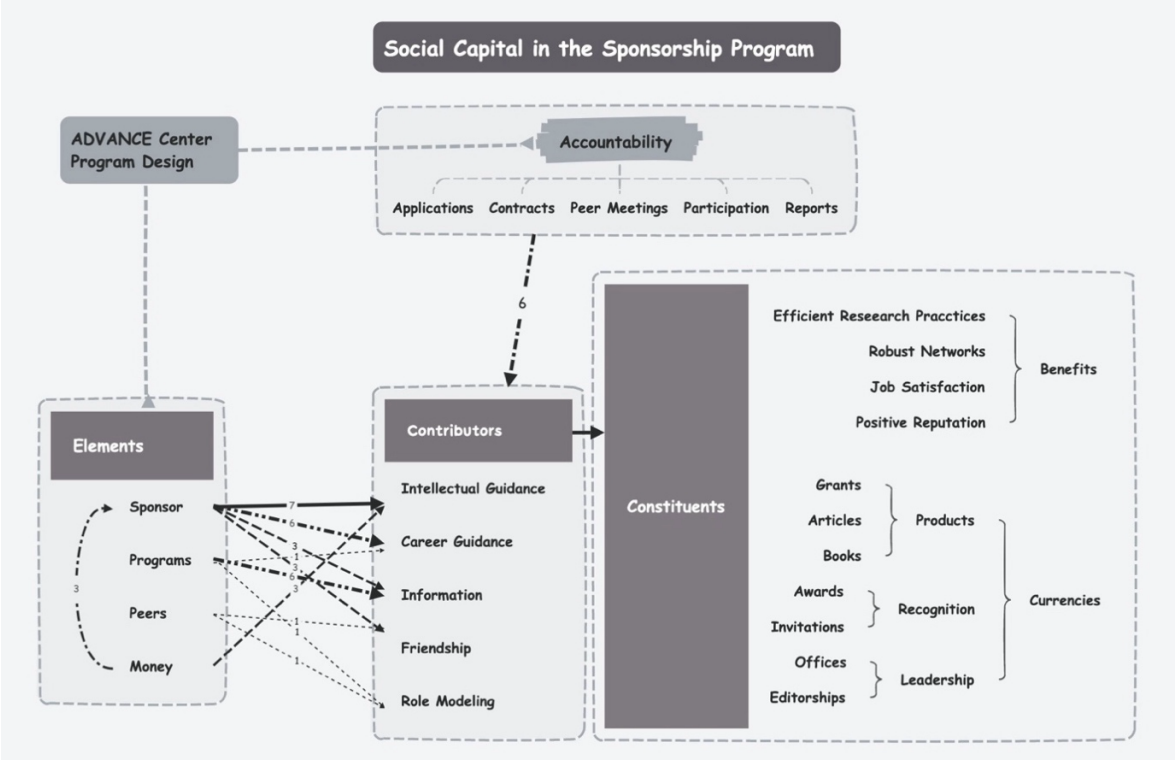
We developed a model for how social capital operated in the sponsorship program, as depicted in **Figure 1**. The model focuses on the pathways by which social capital's components circulate. We begin our findings with an overview of this model, the subsequent discussion of the findings is organized around the two research questions guiding our analysis. This model outlines the key aspects of the program's design—**structure** and **elements**—both facilitated by the ADVANCE Center. The model identifies specific program elements such as the sponsor, money, peer engagement, and programming, which were crucial for developing social capital.

The ADVANCE Center's role was pivotal, managing the accountability structure,

including applications, contracts, reports, and meetings, thereby ensuring the program's success. The elements provide the five **contributors** to social capital (career guidance, intellectual guidance, information, friendship, role modeling), for which we developed a priori codes from Sands et al. (1991). We clustered the coded excerpts associated with the contributors to social capital into **benefits** and **currencies** of social capital. Benefits capture the affective components of social capital—protégés described feelings and attitudes related to efficient research practices, robust networks, job satisfaction, and positive reputations. The currencies theme captured codes for concrete, measurable items, such as research products (funded grants, published articles or books), recognition (awards and invitations to speak or present), and leadership (offices or editorships). We expected that the currencies and benefits would contribute to successful career outcomes (promotion, tenure, retention), though our analysis was not intended to provide a causal framework

Figure 1

Social capital in the sponsorship program



Note. Dashed grey boundaries enclose a category (in white text) and its parts. Grey dashed lines indicate the two parts of the ADVANCE Center program design: accountability and elements. Arrows indicate pathways among the components of social capital. The weight of arrows and the numbers on each arrow indicate how many protégés indicated an impact of that pathway. Accountability's various components provided a collective pathway to the contributors. Each element maps to a specific contributor. These contributors provided the collective mechanism for protégés to produce the constituents of social capital.

RQ1: How did the Program Design (Structure and Elements) Impact Contributors to Social Capital?

The two parts of the program design—structure and elements—had different impacts on protégés. Structure provided accountability for the protégés. The application, contracts, peer meetings, required participation in program ing and reports generated an environment conducive to maintaining forward momentum on the project. Elements were more direct in their impact—they provided resources (money, programming) and support (sponsor, peers) to enable the protégés to meet the goals of their projects.

Structure Led to Accountability

The structure of the program provided accountability for the protégés—required attendance at programming, peer meetings among protégés, quarterly and final reports, specific career goals in the application, and a contract with detailed timeline and communication plans—these provided scaffolding that enhanced the protégés' focus on what they needed to achieve the next stage of their careers. Protégés identified three major themes related to how the program's structure generated this accountability: prioritizing the work, developing a career vision, and articulating their needs.

Prioritizing the Work. According to one protégé #23, "[…] it gave me the structure and deadlines I needed to prioritize my book which is a crucial component of my tenure file." Another noted how the support led to an anticipated increase in

future productivity—"The sponsorship program supported me in the completion of the project which will possibly lead to multiple publications (protégé #18)".

Developing a Career Vision. Protégé #13 noted that as a result of her participation "I am more focused on a research path for the next decade and have a much clearer vision of how I want the second half of my career to develop." Protégé #7 expressed appreciation for the broader impact of the programming on her sense of professional agency, stating, "Before these ADVANCE events, I was actually scared to be a part of my department or to take charge of my career. I believe ADVANCE had a big part in helping me mature as a scholar." This was an example of role modeling, as protégé #7 went on to say that the speaker "[…] inspired me to take control of my own work and my own career". Protégé #7 also cited the impact of NCFDD and other ADVANCE programs on this new-found sense of agency.

Articulating Their Needs. Protégé #23 noted the benefits of the structure and deadlines on her priorities. They went on to suggest expansion of these program aspects, especially the peer meetings: "I think it would be useful to have more frequent meetings with sponsorship recipients to talk through what aspects of the program are working for them and what ideas we all have for improving our project objectives"; and other kinds of accountability: "I think it would be useful to organize writing groups on campus for those people interested in weekly accountability."

Further, at one of the member checking sessions where the ADVANCE Center shared the conceptual map of program impacts, protégé #2 noted that, "It would help to have sample contracts available at the outset of the grant. In reviewing other people's contracts, I realized I had asked for much less support from my mentor than my peers had." This highlights the fact that women and minorities in SBS face different barriers related to structural inequalities when it comes to career advancement. The protégés appreciated how the ADVANCE Center leadership aligned the programming with their needs. Protégé #18 noted, "[t]he leaders [names redacted] were open to suggestions and brought external experts to campus for workshops and lectures on professional development."

The structure of the program created expectations for clear goals in the

application, a plan for enacting them in the contracts, regular reporting on outcomes and needed adjustments, and a sense of support through peer meetings and required participation in other programming. Together these structures generated an atmosphere of accountability characterized by prioritization, visioning, and need articulation. This atmosphere enabled protégés to fully realize the potential of the program elements which provided direct resources and support for their work. The accountability atmosphere is a critical component of social capital—it provides the energy for protégés to have the agency needed to access the social capital contributors of intellectual and career guidance, information, friendship and role modelling.

Elements Provided Resources and Support to Engage Specific Contributors

Within the atmosphere of accountability sustained by the program's structure, protégés drew on the program elements (money, programming, sponsor, peer engagement) to activate the contributors to social capital. First, we discuss the overall prevalence of elements and contributors discussed by the protégés collectively (Table 1); then we look at the prevalence of the pathways between the elements and the contributors among the protégés (Table 2). Finally, we elucidate the most impactful relationships among elements and contributors by discussing specific themes arising from multiple protégés' responses (Figure 1).

Prevalence of Elements and Contributors. A wide range of elements were drawn on by protégés to catalyze the contributors. All of the protégés indicated an impact of their sponsor. A majority indicated money and programming as a source of impacts. Two protégés described impacts of peer engagement, the least common element mentioned. In terms of the contributors, information, intellectual and career guidance were identified by a majority of the protégés, with friendship identified by about half, and role modeling only mentioned by one person (see Table 1).

Table 1

Numbers of protégés citing program design elements as contributors to social capital

Program Design Element	Contributors to Social Capital					Number of Protégés
	Information	**Career Guidance**	**Intellectual Guidance**	**Role Modeling**	**Friendship**	
Sponsor	3	6	7	0	3	9
Money	2	4 [3 indirect; 2 direct)	4 [2 indirect; 3 direct)	0	0	6
Programming	6	1	0	1	0	7
Peer Engagement	0	0	0	1	1	2
Number of protégés	7	6	7	1	4	9

*Note***.** Each cell represents the number of protégés indicating a contribution from a design element to their obtaining a specific contributor. The bottom row indicates the total number of protégés who experienced each contributor. The last column shows the total number of protégés acknowledging each element's impact on any contributor. Money had both direct and indirect (via another contributor—indicated in Figure 1) impacts.

Prevalences of Element to Contributor Pathways across Protégés. Given the central role of the sponsor in the program design, we compared the pathways from the sponsor to the contributors to the collective pathways from the other elements (money, programming, peer engagement) to the contributors (see Table 2). Although no single protégé identified all five possible elements to contributors pathways, all but one described multiple pathways—only one protégé identified a single element to contributor pathway (intellectual guidance from their sponsor). Two-

thirds of the protégés described over half of the five pathways—with two protégés describing four pathways and four protégés describing three. Two protégés described two pathways. In the next section summarizing the themes, we discuss the specific pathways in more detail.

Table 2

Element to contributor pathways by protégé

		Protégés								
Contributor to Social Capital	**Program Design Element**	#2	#13	#18	#23	#29	#3	#30	#42	#7
	Sponsor	*P*	*-*	*-*	*-*	*P*	*P*	*-*	*-*	*-*
Information	*Another element*	*P*	*P*	*P*	*P*	*-*	*P*	*P*	*-*	*-*
	Sponsor	*P*	*-*	*P*	*P*	*-*	*P*	*P*	*P*	*P*
Intellectual Guidance	*Another element*	*-*	*-*	*P*	*P*	*-*	*P*	*P*	*-*	*-*
	Sponsor	*-*	*P*	*-*	*P*	*P*	*P*	*P*	*-*	*P*
Career Guidance	*Another element*	*-*	*P*	*-*	*P*	*-*	*P*	*P*	*-*	*-*
	Sponsor	*-*	*P*	*-*	*-*	*-*	*P*	*-*	*-*	*P*
Friendship	*Another element*	*-*	*-*	*P*	*-*	*-*	*-*	*-*	*-*	*-*
	Sponsor	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
Role Modeling	*Another element*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*P*
Total	**Sponsor**	**2**	**2**	**1**	**2**	**2**	**4**	**2**	**1**	**3**
	Other elements	**1**	**2**	**3**	**3**	**0**	**3**	**3**	**0**	**1**
	Combined	***2***	***3***	***3***	***3***	***2***	***4***	***3***	***1***	***4***

Note: The top 10 rows (italics) show the presence (P) or absence (-) of contributors by the Sponsor or another element (money, programming, peer engagement) for each protége. The bottom three rows represent the total numbers of pathways through the sponsor, through the other three elements combined, and the overall number of different pathways. For example, protégé #2 had two pathways through their Sponsor, one through another element, and two pathways through different elements (the Sponsor and one other).

Relationship Among Elements and Contributors. Protégé responses evidenced key pathways between specific elements the social capital contributors based on how they provided resources and support. Each element provided pathways to different contributors and the activation of multiple elements through various resources enabled the construction of rich webs of capital. Resources and support worked together to strengthen the ability of protégés to engage various contributors. Impacts of design elements on specific contributors are captured in the following themes: The sponsor relationship engaged intellectual and career guidance; money catalyzed attainment of intellectual and career guidance; programming provided information.

The Sponsor Relationship Engaged Multiple Contributors. From the sponsor relationship, intellectual (7) and career guidance (6) were the most commonly mentioned contributors, followed by information (3) and friendship (3). No protégés reported receiving role modeling from their sponsor (see Table I). Most protégés reported more than one contribution from their sponsor. The most common co-occurrences were intellectual and career guidance, followed by intellectual guidance and information (see Table II).

Money Catalyzed the Sponsor and Other Relationships. Money indirectly facilitated intellectual and career guidance by supporting the initiation of the sponsor relationship. Three protégés indicated that having the money gave them the confidence to approach their sponsor about the project to begin with. Protégé #30 stated: “[…] would never have approached [sponsor name redacted] as a mentor or collaborator without the financial support provided through the ADVANCE

sponsorship program. The process of writing the ADVANCE proposal helped us plan some projects, but the collaboration has produced many more projects and professional opportunities that will likely continue for a long time." The money also ensured that the sponsor would receive something for their effort*:* "Although I could have requested that [sponsor name redacted] serve as an external source of accountability, I would not have done so if he hadn't received financial support for doing so (#13)." In addition to working with one sponsor, they were able to identify others: "The monetary support to work with my sponsor and the confidence to enlist the support of additional sponsors has been useful" and without the award "I would not have reached out to my paid sponsor, and thus, I don't think my other two informal sponsors would have stepped forward (#13)." The award also provided the recognition of receiving funds from the NSF ADVANCE program, which protégé #23 capitalized on to secure their sponsor relationship:

> The sponsorship program was critical in allowing me to work with [sponsor name redacted], one of the seminal figures in [discipline redacted]. While it may have been possible to contact her without the program, I believe having backing from the NSF was essential for getting [sponsor name redacted] interested in my work and willing to devote her time to the project. […] I believe that the mentorship from [sponsor name redacted] would not have been possible without the institutional backing of the sponsorship program.

Money also directly impacted intellectual guidance and information. Money provided intellectual guidance directly when protégé #23 hosted "three prominent members of the research community to comment on my manuscript. Their feedback has been important as I move forward and revise my manuscript for publication." Two of the three protégés for whom money directly provided intellectual guidance used the money to "complete their research (#18)" and "to travel to [location redacted] and conduct field work (#3)."

Two protégés credited the financial support with longer term career guidance in the form of enhanced reputation and stronger networks. The protégé who hosted

scholars on campus found that this activity "[…] increased my exposure to the field and increased my opportunities for the type of networking needed to ensure good letter writers at tenure time (#23)." The protégé who used the money for fieldwork noted, "This program helped me to establish myself as a scholar […]. Thus, this grant has had long term effects on my career. The mentorship aspect was not as impactful as the funds that supported my fieldwork, but I still enjoyed the support from my mentor (#3)."

The selection of programming topics and speakers, which was critical to generating more agency among protégés, also garnered positive feedback. Programming's biggest impact was as a source of information, though it provided role modeling to one protégé and career guidance to another. Peer engagement, at programming and required meetings, provided friendship to protégé #18 who noted "[i]t was great to get together with other women faculty researchers on campus and share ideas." This also allowed for the provision of role modeling to another protégé, who noted that "I love attending ADVANCE programming and events because it allowed me to meet more women faculty from across the various campuses (#7)." Another mentioned its multiple benefits: "The ADVANCE programming I was able to attend prior to the award was very helpful in terms of networking, increasing productivity, developing new skills, and learning how to maintain a better work-life balance (#30)."

RQ 2. How did the Contributors Impact Social Capital?

Protégé responses about what they gained from social capital clustered into two categories—currencies and benefits. These benefits and currencies lead to the desired outcomes from having social capital—including both tangible outcomes, such as promotion, retention, and advancement into leadership, as well as intangible outcomes such as the positive emotions and feelings about one's work that contribute to retention.

Currencies

Currencies of social capital are quantifiable components, or deliverables: 1) products (grants, articles, books), 2) recognition (awards and invitations) and 3) leadership (offices and editorships). The most frequently reported products were peer-reviewed publications and funded grants. Collectively, the protégés from the social and behavioral disciplines reported four publications and two grants at the project end point and 14 additional publications and four additional grants by 2018. One of the protégés contracted a book and another published a book; two protégés received awards; one was appointed to an editorship; one of them was elected as a board member of their professional organization; four protégés were invited to present their research work at other institutions or in conference symposia; another was invited to submit articles to different venues to disseminate their research beyond academic journals; another two protégés developed training materials for fellow researchers; and two others served as reviewers for federal grants.

The number of products were higher in the follow-up survey than in the final project reports, which implies that protégés continued the projects after the end of the funding. Protégé #7 stated “I have cultivated a career-long relationship with my mentor, who is excellent at introducing me to people and getting people interested in my work.”

Benefits

Benefits are the affective constituents of social capital: 1) Efficient research practices; 2) Robust networks; 3) Job satisfaction, and 4) Positive reputation. These qualitative items captured what it felt like when protégés experienced social capital. Benefits enhanced the practices of both sponsors and protégés that led to currencies, which could in turn catalyze additional benefits, leading to more currencies, and so on. Practices included opportunities for professional development, options for collaborations, promotion and tenure help, network building, shared ideas and guidance, an increased visibility of their scholarly work, and recognition within their fields.

Efficient Research Practices. Protégés discussed setting scholarship priorities and managing their time. Some protégés had teaching/service relief, allowing them to focus on research projects. To secure this the ADVANCE Center negotiated directly with department chairs as a condition of awarding the funds. Programming provided information relevant to research productivity, especially writing skills, setting priorities and time management. Protégé #18 noted that they "learned to work more efficiently and communicate more effectively as a result of attending the workshops organized by the ADVANCE sponsorship program." Protégé #23 affirmed that, "I found this workshop on time management to be incredibly useful. I implemented a number of suggestions from this workshop into my summer work schedule to great success." The campus NCFDD membership was noted as a particular source of information about these practices, especially pertaining to writing skills and time management: "I have used a lot of the NCFDD resources and have added the daily writing habit and generally am more aware of how I allocate my time (#13)." Other protégés used funds to secure information needed for their research, in this case in the form of training: "The cost of the methods training—tuition and maintaining a temporary residence out of state—would have been prohibitive without the grant […] The new methods skills I have learned will continue to inform my research and allow me to do higher quality work, hopefully placing it in higher impact outlet (#2)."

Collaboration impacted protégé research practices. Intellectual guides collaborated directly with protégés—partnering in research projects or grant applications, providing feedback on products or training on techniques. Sponsor feedback enhanced ideas and writing both for content and style in developing manuscripts and proposals, and in some cases co-authored papers, articles, and proposals (#23, #30). Protégé #3's sponsor provided four roles (information source, intellectual guidance, friendship and career guidance). Protégé #3 highlighted their sponsor's field specific expertise and networks as especially beneficial to starting research in a new area. In addition, this protégé learned new methodological techniques from their sponsor:

> She was also crucial in helping me to develop my interviewing skills. My

> research projects in the past had been primarily archival and discursive analyses, while this new project has a major interviewing component. [redacted] has been performing interviews with migrants and refugees for at least 15 years. Her methodological experiences were immensely important in helping me to write my interview guides and to prepare myself for this type of field work.

Additionally, sponsors supported protégés to prioritize their own research and to do what was needed for career advancement, specifically, to focus on fulfilling the requirements stated in their promotion and tenure guidelines, while integrating their work within family life (#29, #3).

Robust Networks. The sponsor relationship was critical for network building. Career guides provided introductions to other researchers (#13, #7, #3, #29), invitations to present at conferences, workshops, and symposia (#13, #29, #30), and access to professional and funding groups (#30). For some protégés, this networking opened doors for collaboration in high-profile projects and new research areas (#3, #30), contact with other researchers with similar interests (#29, #23, #3, #13), projects and/or editors (#29, #13), and consulting and working with experts and more senior scholars to whom the protégés would not have access otherwise (#3, #7). Sponsors provided career guidance around identifying external reviewers (#23, #29) and understanding how to structure their portfolios for the reviews (#2, #3). Further, the networking was grounded in trust between sponsor and protégé. Protégé #29 spoke about the integration of these functions of their sponsor:

> Through my sponsor I met the now editor of an influential journal in my field, to whom I've just sent a manuscript, actually. This person is really important in my field and a possible external reviewer. Through my sponsor I also connected with other [discipline redacted] scholars that are up and coming in my field. One of them invited me to be a discussant in a panel at a major conference.

Job Satisfaction. In addition to research productivity, to remain in the field, faculty have to maintain and strengthen their emotional resiliency. Friendship

provided comradeship, emotional support, and confidence. In the case of one protégé, “My mentor, and my relationship with her was very beneficial. I went through a very difficult tenure case [redacted], and she was very good at giving me advice on how to handle it. After it was over, she was very supportive at helping [me] move on (#7).” Peer engagement during programming and meetings provided an additional source of peer learning and comradery which increased the connections protégés felt with other faculty on campus (#7, #18).

Several protégés indicated they shared with others the knowledge and experiences learned through their participation in the program. Protégé #42 formalized this by “[…] working on an ADVANCE proposal to support women in STEM across all public liberal arts colleges (COPLAC institutions).” Protégé #13 highlighted the integrated nature of the outcomes in the context of application to mentoring relationships with students and peers,

> “The ADVANCE sponsorship program was career-altering. Without the financial support to work with [sponsor name redacted], my research would likely not be focusing on nonpharmacological interventions [subject area redacted]. By focusing my work in more applied areas, I have also been able to support other female scientists by including them as co-authors and co-investigators. Finally, I was able to take part in the NCFDD in conjunction with my ADVANCE experience, and that too, has enriched my work and is something that I can continue to pass on to my students.

Positive Reputation. The interaction between intellectual and career guidance raised protégés’ research profiles. For protégé #30,

> The projects we worked on during the award period, as well as the networking opportunities provided by my sponsor, have helped me develop a national reputation within my field. In addition to the funded grant and related research products, the relationship with my sponsor produced a featured interview in [title redacted], election to the executive board of my professional association, and an invited talk to

> NSF. This will be very helpful when applying for promotion to full professor.

Protégé #13 also perceived an increased reputation of her work, "[s]erving on grant review committees, an editorship, and running for leadership in a national group will raise my national profile, supporting my application to full [professor]."

Summary of Findings

The sponsorship program effectively facilitated faculty agency, enabling protégés to pursue new research opportunities, generate various academic outputs, and develop strategies for academic success, work-life integration, network building, and heightened scholarly profiles—all crucial aspects of social capital necessary for success in academia. By 2018, six protégés had achieved promotion and tenure, although two had subsequently left the institution for tenure-track jobs elsewhere.

The program's design—comprising structured sponsorship roles, accountability, and support—catalyzed different types of social capital, such as career and intellectual guidance, role modeling, and friendship. These forms of social capital were instrumental in protégés' career advancement, echoing findings by Cronley & Ravi (2021) that emphasizes the critical role of mentoring dynamics in fostering successful outcomes.

Implications

Our results reinforce the effectiveness of designing mentoring programs to consciously build social capital. Hunter College's Gender Equity Program (GEP) modeled this by replacing deficit-based approaches with proactive career building. The GEP matched underrepresented faculty with faculty with more power and access (Rabinowitz & Valian, 2022; Rabinowitz & Valian, 2007). By naming these faculty mentors Sponsors the GEP provided an explicit charge to provide sponsorship, a practice we also utilized. Attention to the dynamics of the mentoring relationship is a critical aspect (Cronley & Ravi, 2021). Centering the relationship between sponsor and protégé recognizes that mentees are also a source of social capital for mentors,

and both protégé and sponsor increase access to social capital by building skill in network development (Randel et al., 2021). Further, faculty participants share these benefits with their students and others (Carter-Sowell et al., 2019a).

Maximizing intersectional benefits requires attending to the experiences of the most marginalized and this includes less access to social capital through networks (Carter-Sowell et al., 2019a). We centered our programming design on best practices for minoritized faculty, using Sands, et al (2011) as the guiding framework, providing workshops that integrated material specific to racialized faculty experiences, and providing the NCFDD as a key resource. There was one significant exception—we did not identify mentors who shared minoritized racial identities with participants, a practice identified as effective in a program specific to the needs of women of color faculty (Carter-Sowell et al., 2019a). The institution did later implement an affinity group for faculty of color.

Developing an organizational or campus culture of mentoring is key, especially for successful mentoring outcomes for women faculty across disciplines (Carter-Sowell et al. 2019a&b; Gibson, 2006). Further, leveraging professional development to provide opportunities for on-campus network building offers social capital development from multiple points of interaction (Carter-Sowell et al, 2019a&b; Dell et al., 2019). In fact, a single workshop positively impacted both STEM and SBS women associate professors to seek promotion; the workshop emphasized time management, seeing example files, identifying external reviewers, and accessing a larger network of colleagues (Hutchins et al., 2022). Focusing on an external mentoring program for women in STEM, Garstein et al. (2018) identified a similar range of benefits to our findings (increased confidence, collaboration and network building).

Conclusion and Recommendations

The WVU ADVANCE Sponsorship Program not only imparted critical knowledge for career success but also fostered relationships that expanded social networks, increased research visibility, and provided the necessary support for academic

achievement. Structured attention to building these relationships can create a robust model for generating social capital, especially for women in social sciences and related fields. Based on the program and study findings, we created the following eight recommendations for future faculty mentorship programs.

1. **Center project-based outcomes**. Protégés self-defined what they needed to do to achieve their next career goal, designed projects, and selected sponsors to achieve those goals. The accountability support—reporting, meetings, contracts with communication plans and timelines—reinforced the outcomes-oriented approach.
2. **Consider pros and cons of protégés identifying mentors**. At member checking sessions, several protégés reflected that finding someone to agree to be a mentor was challenging. There is more difficulty for less-connected faculty, often minoritized, in forming partnerships (Randel et al., 2021). Yet, partnerships where the protégé is assigned a mentor may have more difficulties persisting (Garstein et al., 2018; Rabinowitz & Valian, 2007). One approach is to first partner protégés with internal mentors who identify external sponsors (Sowell et al., 2019a).
3. **Provide social capital for protégés to provide to potential mentors**. For many protégés, the sponsor honorarium and/or the prestige of a NSF funded project, empowered protégés to approach sponsors. During member checking, some protégés indicated they worked with mentors they met as a more senior graduate student or postdoc. Funding provided an incentive to start work on a long-planned project.
4. **Provide training about what to ask a sponsor or mentor to provide.** A protégé in our member checking session noted that knowing what other protégés got from their sponsor relationship would have inspired more asks.
5. **Expand access to resources**. Underrepresented and systemically disadvantaged faculty across the institution were invited to submit applications to the WVU ADVANCE sponsorship program. The institution provided separate funding for those outside of the NSF-funded group. The ADVANCE

grant was promoted as a place to test approaches that would later be extended to others, given that broadening the scope of mentoring initiatives can address systemic disparities across campuses (Rabinowitz & Valian, 2022).

6. **Attend to culture and climate**. Departmental and institutional culture change is key to retention (Carter-Sowell et al., 2019a&b). Professional development opportunities do not fill all faculty needs. Faculty who left the institution were among the most satisfied with the sponsorship program and other initiatives.
7. **Use resources for community building**. Encourage faculty to engage with other attendees in addition to speakers. Protégés appreciated the opportunity to connect with others on the campus.

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Lindsay Jouben received her PhD. from West Virginia University in Political Science. As a multidisciplinary and diverse scholar her main research interests include institutional design in Microfinance and its impact on poverty alleviation efforts, and how development programs for the poor need to focus on local conditions and solutions. Dr. Jouben currently works as a Lecturer at Georgia Southern University, where her current research looks at how students learn by using interactive assignments across disciplinary fields to create engaging learning environments that allow students to apply new concepts to real world situations. As an educator in Higher Education, she has seen how issues of equity and belonging can impact student engagement and success and has focused on social capital creation in Higher Education. Dr. Lindsay Jouben believes that programs that foster mentorship and diversity among Professors is important because it promotes a sense of belonging that is essential for student achievement.

Susana Mazuelas Quirce received a doctoral degree in Higher Education from West Virginia University. She is a White Hispanic cisgender woman. As a non-traditional scholar, her interests gear towards justice, equity, and inclusion issues in education. She also holds a Master's degree in Foreign Languages, a Graduate Certificate in Women and Gender Studies. Dr. Mazuelas Quirce was part of the WVU ADVANCE

Center for three years as a graduate assistant and collaborated in the expansion of the Center and its offerings. After being involved in higher education for 13 years as a student and as an adjunct faculty member, Dr. Mazuelas Quirce currently serves as a senior researcher at an international consulting firm. She uses her analytical skills to help multidisciplinary teams to design and conduct program evaluation projects for a variety of federal and state funded programs aimed at supporting and improving learners,