



Federal Agency and Organization Element to Which Report is Submitted:

4900

Federal Grant or Other Identifying Number Assigned by Agency:

1209197

Project Title:

Structured Conversations and Re-imagined Spaces: Effecting Systemic Change for Women in STEM at UVA

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Recipient Organization:

University of Virginia Main Campus

Project/Grant Period:

10/01/2012 - 09/30/2017

Reporting Period:

11/19/2013 - 11/19/2013

Signature of Submitting Official (signature shall be submitted in accordance with agency specific instructions)

N/A

Accomplishments

* What are the major goals of the project?

U.Va. ADVANCE IT #1209197

July 1 – November 30, 2013

At the University of Virginia, the goals of the institutional transformation initiative are to increase the number of women, including African American, Latina, and Asian American women, on the faculty in the School of Engineering and Applied Sciences and in the College and Graduate School of Arts and Sciences. We seek to create an empowered collaborative, participatory form of community that draws on the collective capacity of women faculty, their male colleagues and administrative leadership allies to identify and ameliorate the structural and cultural barriers to women's full participation in academic STEM careers. There are five major

initiatives. For the current reporting period, the project goal was to continue implementation of the five major initiatives using the project planning worksheets to guide tasks and actions as well as to document changes/rationale.

Based on our logic model, we surmised that ADVANCE recruitment related projects and institutionalization trajectories would gain early traction if two main conditions held. If stakeholders perceived ADVANCE activities as significantly helping them in accomplishing their current goals. If ADVANCE initiatives related to STEM/SBE women faculty were recognized as beneficial to faculty as a whole and if advance goals for active recruitment and advancement could be woven into the fabric of the institutions' strategic plan with leadership responsibility for achieving well defined metrics.

An important goal for this reporting period was to involve ADVANCE in all aspects of faculty recruitment activities which started in the summer and is at its height through the fall semester. The university advertised over 100 new faculty positions: 30 STEM/SBE and 70 in other disciplines. This will be an important recruitment season after many years when resources for new and replacement hiring had been severely limited.

For all initiatives, goals are to establish and implement an internal evaluation process and to maintain ongoing communication with external consultant.

Social Science Research on the Physical Environment and STEM

Hypothesizing that cues in the physical environment may disinhibit women, especially, women of color from a sense of safety and belonging, social science research will investigate the physical environment as a signaling factor in the structuring of inequality.

In our original proposal, we outlined four critical aims/objectives for the Social Science Research Project:

- To document women's use of space in STEM-related spaces, focusing on racial/ethnic minority women and women from lower socioeconomic status (SES)
- To identify patterns of space use that may undermine these women's sense of belonging in STEM
- To test lab-based interventions aimed at increasing women's use of STEM-related spaces
- To develop longer-term interventions and test whether these interventions increase women's use of space and sense of belonging as well as participation and advancement in STEM

Evaluation

Update formative assessment plans that evaluate the effectiveness of the processes used to fulfill each initiative which will enable the UVa ADVANCE implementation team to make informed decisions and adjustments in order to optimize efficiency and effectiveness.

Data Tool Kit:

Operationalize the status of women faculty in STEM and SBE at UVa with the Tool Kit data to enable the University community to be more informed about the compositional diversity (or lack thereof) of its STEM and SBE fields. Further, provide space allocation data by gender and grants brought to the university to assist institutional leadership to ascertain equity in space allocation processes.

*** What was accomplished under these goals (you must provide information for at least one of the 4 categories below)?**

Major Activities:

Initiative #1a Departmental Diversity and Action Transformation

Joanne Cohoon (co PI) finalized a 17 items assessment instrument that identifies key best practices to recruit and retain STEM/SBE women faculty and asks departments to identify those they already use, rate the feasibility of implementing best practices in their department and then indicate which practices departments members could endorse as strategies they wanted to implement. Cohoon piloted a beta instrument at the search committee symposium and further refined it. Participation rates were in the high 60% for all those attendees to the symposium who completed the instrument. The survey instrument is used both to assess need and readiness and also to promote and increase awareness that the ADVANCE program will partner with departments in achieving their stated goals via trained equity consultants. Because search committees are a primary target of ADVANCE during this period which overlaps with the early stages of faculty recruitment, the implementation team endorsed the plan to focus equity consultant efforts in departments on search and recruitment and candidate identification. Cohoon adapted her training to focus more heavily on recruitment. She devised additional tools based on responses to the survey which indicated a need for rubrics and spreadsheets to facilitate transparent evaluation and criteria for candidate dossiers. Utilization of external search equity consultants was a foreign idea to most department and search committee chairs. The team contacted deans, department and search committee chairs to explain this resource.

Initiative #1b Departmental Structured Dialogue

Activities this period focused on refining the introductory process and pitching the dialogue process. Getting feedback and engagement either led to another meeting; commitment to schedule; or a declination. An important aspect of the logic model is gaining stakeholder ownership and engagement whether as a shared value or as a solution or action related to an intrinsic goal. We understood from the literature and also from efforts in other ADVANCE programs that there would be initial skepticism and perhaps resistance from departments to hosting a small group process that was so much focused on face to face dialogue about diversity and inclusion. To ameliorate this problem: First we identified departmental or school insiders to liaison with departments and provide first introductions. Success of those efforts depended on designing a process that was highly relevant to participants and focused on their own experiences and with data and trusted

others to advocate for their participation. Second, we designed an approach to dialogue that would resonate with participants, testing with a small group of insiders to get feedback on language and approach. Previous work with this narrative approach indicated that STEM faculty and administrative leaders expressed initial skepticism but did participate and rated the experience highly. A significant amount of progress was made on this initiative. Dr. Fraser, Dr. Holmes and Dr. Pocanic made introductions or provided suggestions to consultant Dr. Jeff Galbraith on how to approach identified departments to offer the structured dialogue to them. Five departments participated in at least one introductory meeting. 4 agreed to schedule dialogue sessions. Insider liaisons are crucial in easing access to departments.

Initiative #2 Voices and Visibility: 2a. (Lived Experiences: Oral History); 2b) Social Science Study

2a: Lived Experiences; Oral Histories (of Faculty Women)

Identified 4 graduate students trained in qualitative research. Research group for the project includes Fraser, four graduate students and Dawn Hunt, project coordinator. Fraser trained interviewers on the adapted Foley Life History Interview protocol. Revised the instrument based on mock interviews among the researcher/interviewer group. Tested the instrument via pilot interviews with faculty and administrative volunteers and further revised. Final modified interview protocol to be submitted to institution review board. Consulted with Don McAdams at the Foley Center for Life History. Will ask him to be an external research project advisor. Based on recommendations of research group, the project lead established an oral history advisory board made up of qualitative researchers at the university.

2b: Social Science Study

For Year 1, we proposed a set of observational and survey studies to document how women and men use and experience STEM and non-STEM spaces at the University. These studies provide the foundation for our experiments and longitudinal studies in Years 2-5. These studies have yielded two insights, which we outline in the results section below because they are guiding some of our research endeavors:

For Years 2 and 3, we proposed a set of experiments. These studies will provide evidence for the causal relationship between space and sense of place in STEM.

Initiative 3 A&B: Recruitment, Search and Selection

3A: Outreach and Travel Grants

This year, we announced the availability of funding early in the hiring season, and invited search committee chairs and department chairs to apply at the September 25th Search Symposium. A review panel was formed and they have approved four funding requests

from Chemistry (1), Physics (1), and Politics (2). Applications will continue to be received and reviewed on a rolling basis throughout the hiring season.

3B: Academic Search Portal: Design and Vision

Dr. Mary Lou Soffa developed a trial website. For this first phase of the portal, content focused on search committee procedures related to committee formation; candidate cultivation and outreach. Initial work on the portal surfaced the importance of vision and goal clarification on exactly what role the portal could have in the broader context of the university's existing resources for search committee training and what was already available in the ADVANCE community. A main theme for this discussion focused on where the initial emphasis should be on content aggregation for the trial website or on portal design that would innovate on the user-interface especially in terms of influencing search committee behavior. These pragmatic and philosophical issues emerged even as decisions about time-lines for delivery of the website to users were being defined. Again, these discussions were not unexpected in the frame of the grant logic model that identifies the actual portal or website as a technical challenge, whereas issues of user acceptance; underlying philosophies of how behavioral change occurs point to complex adaptive challenges that have implications for the portal design.

At the same time, P.I. Gertrude Fraser invited Tim Songer, the founder of Interactive Knowledge, the company that designed the, "Race and the Power of Illusion," which is the aspirational website for the academic portal, to meet with the ADVANCE program. His highly informative presentation focused on design and user interface priorities and decision-making that contribute to the kind of innovative learning portal that we seek to create. This approach moves beyond content to planning for a high touch, highly interactive, website designed to encourage multiple use by a range of audiences—search committee members, candidates, other ADVANCE programs. The first step in this direction is to develop a plan for the wire frame and interactive story boards that will be the website's blueprint.

Initiative 5: Enhancement Funds for Individual Faculty

August 2013-A five person faculty panel reviewed 15 fund requests and four of these received awards. The research of the fund recipients spans the birth of stars, gender and globalization, waste water treatment, and surface reactions of nanostructures. The deadline for the current call is November 25, and the review panel will review these applications and award the next round of funds in December.

Specific Objectives:

Create synergies and Leverage Opportunities

1. With the increase in the numbers of open faculty positions due in part to the generational turn-over, there is intensified workload at every institutional level. Department search committees, academic administrators, school human resources

administrators seek partnerships to create content and deliver training on ways to create more effective and efficient search processes which incorporate emergent evidence-based best practices. The university is in the active development of a strategic plan that would include innovative approaches to recruiting the next generation of tenured and tenure track faculty. For the half year 6-13 to 11-13 the ADVANCE leadership team leveraged synergistic activities that were aligned with current emphasis at the university on faculty hiring and strategic planning. We identified leveraging areas cluster around: recruitment; engaging departments, allies and change agents; leadership and institutional planning. These are core areas that need improvement in order to: 1) increase the number of women who apply for positions at the university; 2) ensure that these dossiers are reviewed by search committee members trained to recognize and take steps to mitigate implicit bias (gender, race) in their candidate evaluations; 3) establish the groundwork for the institutionalization of successful ADVANCE strategies; 4) create ongoing partnerships to extend the goals and reach of the grant beyond implementation team activities.

2. Recruitment focused activities: “Recruiting the Most Qualified Candidates Using Effective, Fair Searches to Hire Excellent Faculty.”

U.Va. ADVANCE and the Office of the Vice Provost for Faculty Recruitment and Retention organized a university-wide program of events in a day-long two-part symposium focused on faculty recruitment. The first three hours provided resources relevant for all searches and the second three hours presented a program specifically tailored to STEM/SBE search committees and including information on available ADVANCE resources. Other institutional partners on the symposium planning team included Human resources; College of Arts and Sciences recruitment specialists and the Office of Equal Opportunity Programs. In addition to providing practical guidance and tools for faculty searches, the planners wanted to bring search committee members together in the same room to highlight the collective importance of the service provided by all those serving on search committees; to encourage information sharing among seasoned and new search committee members; to surface the emerging issues facing search committees as they got involved in the complexities of dual career recruitment; reading professional dossiers when there are many applicants and interpreting institutional rules and requirement. One hundred and nineteen participants attended the symposium, the majority of whom, search committee and department chairs, are directly involved in the faculty recruitment enterprise.

The SEAS and STEM/SBE (Arts and Sciences) Associate Deans encouraged department chairs and search committee chairs and members to attend. Due to their efforts, the room was filled to capacity with standing room only.

3. ADVANCE will use the occasion of academic deans reading Sheryl Sandberg’s Lean-In text to raise institutional wide dialogue about women’s presence and experience in leadership at U.Va.

4. Communicate how search equity consultants will enhance the search process and yield 3-5 departments signed up to work with consultants.

5. Schedule 5 departments to participate in the structured dialogue process.
6. Establish a candid working relationship between the EAB members and the implementation team. Expect the EAB to review the progress of each initiative, to identify challenges and remedies to optimize the chances of success for ADVANCE at U.Va., and to ask for guidance and recommendations from the EAB members. Focus themes: leadership engagement, strategies for creating institutional allies, and maximizing recruitment especially of under-represented minorities.
7. Build a trial Academic Search Portal website with an emphasis on search committee procedures related to committee formation; candidate cultivation and outreach. Align with ADVANCE goals to capitalize on the current wave of STEM and SBE hiring. Emphasize practices shown to be consequential for recruiting women and under-represented candidates. Conduct focus group feedback with faculty from the schools of engineering and arts and sciences to preview the beta website, give input on content and function, and provide feedback as to what elements would be most helpful in the short and long term (focus group participants included current/former search committee members and chairs). ensure that implementation team members also preview the site.

Evaluation

To ensure that accurate data can be distributed to key stakeholders.

Significant Results:

Social Science Study

A. Women (but not men) think that campus is too dark at night and report that they do not like to use public spaces including libraries and labs at night for that reason. This gender difference is likely quite consequential for faculty and students in STEM, who have to use public spaces (e.g., labs) to succeed in their field. They cannot conduct some of their work in private spaces (e.g., their home office, their dorm room).

B. For women (but not for men), concerns about safety are related to their sense of place at the University. In other words, concerns about safety may hinder women's productivity in two ways. First, these concerns may keep women from the spaces where they can get their work done and second, these concerns may make women feel "out of place," which may undermine their motivation.

We are just beginning data analysis of our archival data. As with our survey data, we have some interesting preliminary findings, some expected and some unexpected:

1. Relative to male faculty, female faculty are significantly less likely to have the closest restroom be an own-gender restroom. This is especially true in STEM

departments. This finding is important because the distance to an own-gender restroom could serve as a cue that the department does not welcome women. Anecdotally, female graduate students in the Psychology Department have often complained that they have to go to another floor to use the women's restroom; it is a reminder that the department was founded by and for men.

2. Proximity to female faculty offices is related to significant decreases in productivity (i.e., lower h-index) among male faculty in STEM but it is related to increases (albeit non-significant ones) among female faculty in STEM. Proximity to other female faculty is unrelated to productivity among male and female faculty in non-STEM fields.
3. These preliminary findings are not yet controlling for seniority/rank and other variables. These analyses are forthcoming.
4. In a recently completed archival study, proximity to female faculty was a predictor of productivity for male and female faculty in STEM but not in non-STEM fields.

Initiative 1A Structured Dialogue

To date, three dialogic sessions have been held in two departments, Mechanical and Aerospace Engineering and in Chemical Engineering. Physics, Electrical and Computer engineering are scheduled for Spring 2014. One department declined participation.

Initiative 1B Equity Consultants

Three department chairs contacted Dr. Cohoon to request consultants for assistance in various stages of the search process.

U.Va. ADVANCE Alignment with Institutional Planning

U.Va. ADVANCE and the Office of the Vice Provost for Faculty Recruitment and Retention (VPFRR, PI Fraser) provided three proactive hiring-related planning recommendations to the University's Cornerstone Strategic Plan 2013 – 2018. Specifically, U.Va. ADVANCE and the VPFRR recommended three hiring - related initiatives for the strategic plan. These are: continuous active recruitment, dual career support, and the institutionalization of the academic portal. "Continuous active recruitment" (C.A.R) will be a strategy employed by U.Va. to address faculty proactive recruitment and hiring. Active recruitment is an industry norm and now recommended by academic search experts (Bilimoria and Buch, 2010; Dyer, Montelone, Rezac and King, 2006; Stewart, LaVaque-Manty and Malley 2004; Turner, 2003; Vicker and Royer, 2006), to systematically identify high-potential faculty candidates (potential applicants), build stronger relationships with targeted candidates, and "close" recruitment efforts successfully. This process will be crucial to address hiring efforts in the next 5 – 7 years to replace retirements and to build the community of scholars. This is a continuous strategy to cultivate long term relationships and connect to those who may potentially become applicants (or possibly refer others) for immediate and/or long term faculty openings and to specifically reach those who are underrepresented at U.Va. – women and

underrepresented women/men minorities. This requires a departmental leadership focus at all times on the short and long term process of outreach (networking), and cultivation of professional working relationships to develop and maintain these contacts often assisted by technology platforms. Known as Driver #2 in the Plan, this strategy establishes the direction for the academic division of the university under Pillar 4 to, “Assemble and support a Distinguishing Faculty” because “high quality faculty is essential to missions of teaching, research, patient care, and public service.”

U.Va. ADVANCE Academic Portal and Institutionalization

As part of the Cornerstone Plan (strategic plan) the academic portal (U.Va. ADVANCE Initiative #4b) will be expanded (institutionalized) after it is developed (content, and technically) and piloted as a U.Va. signature project to include content relevant for all disciplines. A major goal is to dispense information, tools and resources particularly focused on successful outreach, career development, climate transformation, and search processes to recruit and hire underrepresented women and majority women.

Evaluation

All Tool Kit tables for Year 1 were revised, except for the Salary Study, which is pending. Data were collected from institutional offices regarding space allocation and P.I. grants won.

Key outcomes or Other achievements:

Dual Career NSF Career Life Balance Hire Grant Award Announcement

Ensured that the search committees knew about additional dual career resources available through the ADVANCE program. At the STEM/SBE search symposium, announced availability of the Dual Career Partner award (NSF #1346652) from the Career Life Balance (CLB) NSF initiative. This award will fund the dual career hire for one year of salary plus all benefits at \$249,139 for the spouse/partner hire of one female STEM faculty hire this coming year.

EAB (External Advisory Board) Meeting

To accommodate external advisory board (EAB) members' schedules, we arranged a web-based virtual meeting. Information with updates and key accomplishment were sent to board members. We also provided a power-point to guide the meeting agenda. Dr. Chris Comer agreed to serve as chair. The implementation team members convened in a conference room and we linked to individual board members via a WEB-EX virtual meeting tool. There were a few technical matters that were resolved with the hard work and quick thinking of colleagues. Everyone agreed that the virtual meeting provided for a surprising depth of interaction and that it is an idea worth keeping as a way to have ongoing feedback from the EAB to complement site visits. We are in the process of

scheduling an on campus spring full-day 2014 EAB meeting led by the provost. The EAB drafted a report with recommendations for delivery to the provost and president.

Institutional Leaders Town Hall meeting with STEM/SBE Women

ADVANCE organized a meeting for STEM/SBE women with President Teresa Sullivan and Provost John Simon. Forty-one female faculty (tenure track/tenured and non-tenure track). Goals of this milestone event were to communicate ADVANCE objectives to the women faculty (major stakeholder group), and to create a venue for President Teresa Sullivan and Provost John Simon to share their views on a range of issues, respond to questions that had been submitted in advance, and engage in an open question and answer session with women faculty. Both the president and the provost said that they also wanted to get ideas from the attendees about how to increase the numbers and advance women faculty in these core disciplines. Guest speaker, April Brown, endowed professor of Electrical Engineering at Duke University participated by SKYPE. The event provided an opportunity for women faculty to bring their voices to the institutional leaders on matters of importance. Before the meeting, participants including the president and provost) were provided with demographic data on women in STEM/SBE, disaggregated according to the ADVANCE toolkit format-race/ethnicity, department and rank. The numbers can be discouraging so the organizers also used the theme suggested by Diana Bilimoria's analysis of ADVANCE-IT programs and effective change efforts. That is, she found that successful programs identified incremental gains while focusing on long term change. During the program we asked women to identify their allies and institutional change agents. At key moments during the program recent positive changes and next important action steps were noted. Guest speaker April Brown described the specific actions taken at Duke to implement the goals of the women's initiative. She noted that individuals could be empowered to make significant changes. President Sullivan and Simon affirmed their commitment to giving high priority to both hiring women and to improving the percentage of tenure-track female faculty. Provost Simon announced that a top-level committee will be formed to review work-life utilization policies (there is already a task-force charged with examining non-tenure track policies.) The president noted the importance of departmental context (what she termed departmental micro-culture) on the climate for individual women faculty.

Initiative 1a stakeholder communication excerpt:

Sent a follow-up email to school deans in Engineering and Arts and Sciences and to department and search committee chairs and encouraged them to request a meeting with Joann Cohoon. We asked the deans to forward our message to departments. We also sent direct emails to search committee members involved in active searches. The email described the consultancy as a 3-step process; consultants' expertise pitched as enhancement and complementary to available resources with a focus on disciplinary candidate outreach. This increased number of queries and requests for consultants.

“Intense competition for candidates, more searches, many applications to review and the time crunch associated with the hiring cycle place many demands on already busy search

committee members. ADVANCE search consultants can help you bring U.Va. to the attention of the candidates you want to reach and recruit; identify tools for effective evaluation; reduce the potential for implicit bias; enhance the candidate campus-visit experience. Whether you are just about to start applicant outreach, you are already into candidate interviews, want to do a great job in on-boarding a new faculty colleague, or prepare for a search in the near future, consultants can help at every stage..."

Post October 7th. Town Hall Outcome

Provost Simon announced that the president instructed him to convene a university-wide task-force to review work-life utilization policies with a focus on patterns of utilization. Overall participants positively responded to event; however, many in evaluation responses indicated being uncomfortable asking questions.

Women's Leadership Development

Annually (two semesters) we dedicate 10 spaces for STEM/SBE women faculty to participate in the LAM (Leadership in Academic Matters) program after their nomination by their Chair and the Provost. In the first semester (August – December), two full professors (1- Physics and 1- Politics) participated in LAM achieving 20% of our annual goal.

Internal Advisory Board

Several IAB members served on review panels for Initiative #5 Enhancement Fund applications. Service on this panel allows chairs or associate deans to find or suggest other viable funding sources if an applicant does not receive an award.

*** What opportunities for training and professional development has the project provided?**

Initiative 4: Recruitment, Search, and Selection

Part C: Department Demographic At –a Glance Profile (Data Sheets)

Dr. Norris attended two chair and two department meetings, and found this to be a very effective way to convey the goals and objectives for U.Va. ADVANCE. Dr. Norris also took the individual departmental data sheets to the chairs which described their current faculty by rank and gender, the available pool of women PhDs, and the percentage of women by rank at comparable universities. These sheets were also distributed at the September 25th search symposium to each of the hiring departments.

Search Symposium Information Sharing and Outreach Program

The symposium titled, "Recruiting the Most Qualified Candidates Using Effective, Fair Searches to Hire Excellent Faculty." <http://news.virginia.edu/content/faculty-focus-recruiting->

[strategies-attracting-new-colleagues-uva](#) contributed to the university's efforts to hire diverse, excellent faculty a mix of faculty peers, ADVANCE implementation team members; an invited expert on implicit bias and staff and administrators involved in administering the search process presented and fielded questions and comments. The program included a special session for STEM/SBE search committee members and department chairs. The symposium was endorsed at the university's most senior level. In opening the program, President Teresa Sullivan emphasized the importance of faculty hiring and the symposium's relevance to the Cornerstone plan (U.Va.'s strategic plan). The President called upon the participants to find the best candidates to ensure U.Va.'s future excellence. These opening remarks were made to 119 department chairs, search committee chairs/members, and allies at the On September 25th, President Sullivan emphasized the importance of faculty hiring and the symposium's relevance to the Cornerstone plan (U.Va.'s strategic plan). This training and development program should enhance search committees' knowledge of recruitment and evaluation best practices. How to implement change? Rather than calling for a total overhaul of search routines, search committees were encouraged to adapt incremental changes to mitigate implicit bias.

Invitations to all members of faculty search committees included practical tools such as evaluation rubrics and research-based evidence for bias reduction strategies such as Bohnet, Iris, Max H. Bazerman, and Alexandra Van Geen. "When performance trumps gender bias: Joint versus separate evaluation." (2012).

Symposium divided into two parts:

Part 1: All Disciplines

Invited search committee members from all current or projected 2012 faculty searches. Program divided into three main sections: 1) Gender bias using a case-based approach. A case developed by P.I. Gertrude Fraser provided illustrative anchor for discussion of gender bias patterns by featured presenter, Professor Joan Williams, founding director of the Center for Work Life Law at University of California Hastings College of the Law. Professor Williams presented her research on the "four patterns of gender bias" (prove it again, double bind, maternal wall, and gender wars) that may emerge in search committee processes, and how to identify and address them. 2) Broadening the applicant pool: Chair of Physics and Professor Joe Poon, Sim Galazka, School of Medicine, and Archie Holmes, Professor of Electrical and Computer Engineering (U.Va. ADVANCE Implementation team member). 3) Ask the expert with panelists from Human resources and Equal Opportunity Programs).

Part II: STEM/SBE

Twenty-six department chairs, search committee chairs and members attended. PI and Vice Provost, Gertrude Fraser opened this event, and Owen R. Cheatham Professor Mary Lou Soffa, Computer Science, provided information on ADVANCE initiatives, and introduced members of the implementation team. Professor Joan Williams summarized how gender bias patterns relate to STEM/SBE hiring and committee decisions followed by, "Know Your Faculty Data (NSF Tool kit) presented by Associate Professor Karen Inkelas (Internal evaluator, U.Va. ADVANCE). Associate Dean and co-PI, Pam Norris provided hiring support information on the

Outreach Travel grant, and the new Dual Career NSF Supplemental Award. Interim Program Manager, Linda Siebert, introduced the new Faculty Life Friendly Guide and examples of candidate evaluation rubrics from other ADVANCE programs. The participants received data on last year's hiring results and open jobs for the upcoming hiring season. Departmental data sheets provided current faculty demographics by rank and gender, the PhD pool of women (potential applicants), comparative national data on the percentage of women by rank at other leading universities, and the percent of women applicants by position compared to their availability for each open position. These were presented and search committee teams were asked to review and discuss their departmental data. As the data sheets were presented, comments were fielded about data quality. We subsequently revised the departmental data. During the second half of the program, focus shifted to faculty peers' recruitment and hiring strategies and advice. Professor Fred Epstein, Biomedical Engineering and VPFRR Gertrude Fraser discussed the steps taken to create a successful dual career hire. At the program's concluding panel, Professor and Chair of Biology, Laura Galloway discussed the challenges and complexity of recruiting STEM women, including the importance of proactive outreach during the hiring process. Professor of ECE, Archie Holmes, discussed the scope of searches; Professor Mary Lou Soffa described early developmental stages of the ADVANCE interactive academic search portal. Associate Professor in Science, Technology and Engineering, Joanne Cohoon (co-PI, U.Va. ADVANCE) introduced the ADVANCE initiative sponsored search consultancies available to departments. She described the recruitment survey designed to assist search committees in assessing readiness and feasibility to adapt new search actions to complement or enhance current strategies. Dr. Cohoon invited the search committee chairs and department chairs to contact her for consulting assistance.

Initiative 1B: Structured Dialogue

Trained 4 structured dialogue moderators for initiative 1b. Moderators were trained to facilitate the dialogue sessions. Structured dialogue depends on an elicitation and query process to encourage participants to reflect on and expand their repertoires of actions and strategies in face of complex adaptive challenges or interactions. After each session they were debriefed by consultant Jeff Galbraith about. Debrief reflections were used to tailor and revise the dialogue for session two and moderator strategies for eliciting and structuring the dialogue. Each department agreed to two sequences sessions at least a week apart.

Team Building Workshop

A two-part team building workshop, "Charging our Vision for Change: Strategies for Leading and Playing in Successful Teams" was held on November 20 – 21. The workshop was facilitated by Dr. Jerry Brightman (President, Leadership Group) and coordinated by Dr. Dorothe Bach, a member of the U.Va. ADVANCE implementation team. Seventeen implementation team members, allies, and administrators participated. A 2-hour session for 10 implementation team members was also held on November 21.

This workshop was an opportunity to bring together the change agents and allies to re-charge their energy and re-focus on the work of change ahead. Building on the work begun in March, Dr. Brightman guided the group to create compelling visions for the next few months and years

to come. The workshop provided a series of experiential activities to avoid The Five Dysfunctions of a Team (Lencioni 2002) and to develop high performance teams of learners and leaders. Agreement that team needed to more fully discuss overall vision to complement expertise and focus on individual initiatives.

*** How have the results been disseminated to communities of interest?**

Faculty Life Friendly Guide

<http://www.advance.virginia.edu/life-friendly.html>

To support outreach and hiring efforts, U.Va. ADVANCE and the VPFRR developed the new Faculty Life- Friendly Guide and unveiled it at the September 25th Search Committee Symposium. We saw a need to communicate worklife resources at the university and signal the many powerful reasons for diverse candidates to join the university faculty.

<http://www.advance.virginia.edu/life-friendly.html> .

The guide was designed with direct input from a cross section of STEM/SBE faculty members. The final guide product is meant to be shared and used broadly by potential applicants, by candidates during on-grounds interviews, by search committees, department chairs, and faculty. We designed the guide to communicate that U.Va. is distinctive among its peers and offers a system of career success supports and services to allow faculty members to have a productive, creative life at work, at home and in the community.

U.Va. ADVANCE Synergy – Place to ask about Female and Male Behaviors

There are several ways we think that U.Va. ADVANCE has served as a catalyst for and had an impact on institutional thinking about gender within STEM interactions.

For example, U.Va. ADVANCE is a place where questions about female and male gender behaviors are submitted and addressed. An engineering faculty member observed that women and men students routinely organized themselves into consistent roles within self-organized teams. The women students consistently became the managers and organizers, while the men typically became the technical doers (wiring). The faculty asked Pam Norris, co-PI, and she in turn sent an email to colleagues who could address this issue within U.Va. due to their own work or were able to reference other's work on this issue. Within a few days several scholars sent their research, article citations or provided an analysis of the issue to the ADVANCE co-PI. Here is a sample of what the faculty members provided to address this topic:

“Some research has shown that stigmatized group members will sometimes self-stereotype to avoid conflict and/or to be liked. This ensures smoother group dynamics but it also has costs for the stigmatized group members (e.g., internalization of negative stereotypes, frustration, maintenance of the status quo).” I should also note that this kind of self-organization has other benefits to the group (other than avoiding conflict). Research has shown that having women in

work groups can improve group outcomes because of their social/emotional intelligence. In other words, without the girls taking on the management/organizational role, the projects might not have gotten done! See paper published in Science.”

- ADVANCE co-PI, Assistant Professor of Public Policy and Psychology, Frank Batten School of Leadership and Public Policy

“Andrea Hollingshead and Sam Fraidin have some work about assumptions of expertise in gender typed tasks and what it takes to overcome them and Heilman and Hayes have some work on credit taking in mixed sex groups. I have attached the Heilman pieces. I’d need to dig more for the Hollingshead and Fraidin work. I think it is published in Journal of Experimental Social Psychology. Some of my own work about use of female expertise is attached.”

- Associate Professor of Business Administration, Darden Graduate School of Business)

“I have seen some work advocating for the faculty member assigning roles. There may be power dynamics shaping choice in these small student groups.

See this pdf with a section on what determines leadership behavior in gender diverse groups

<http://highered.mcgraw-hill.com/sites/dl/free/007091091x/79496/KreitnerSmampleCh.pdf>. Think also that if women students are in the minority overall that might shape their decision-making-wonder what things would look like in all women teams?”

- ADVANCE PI, VPFRR, and Associate Professor of Anthropology

“Yes, this is typical and problematic behavior. It likely happens because these are "appropriate" gender roles, so everyone feels most comfortable and competent in them. It's a problem because neither gender gets to develop the other skills they need.”

- ADVANCE co-PI, Associate Professor, Science, Technology and Society

Another example is that P.I. Gertrude Fraser who is a member of the AIM-NETWORK (national network of ADVANCE IT professionals) recommended Professor Yael Gruska-Cockayne who is an assistant professor in the Darden School at U.Va. for her expertise on project planning. Subsequently, Professor Grushka-Cockayne has offered to webinars on this topic to the AIM-NETWORK. Plans for collaboration on grants are underway.

Conference Participation

Associate Dean Pam Norris participated in the 2013 American Society of Mechanical Engineering Congress and Exposition in San Diego, CA. on November 19. Dr. Norris was a panelist for, “The National Science Foundation Institutional Panel”, and organized the workshop, “Strategy Workshop for Women: Get Your Career Accomplishments Recognized.”

Social Science Study

Dr. Sophie Trawalter submitted a poster to the annual meeting of the Society for Personality and Social Psychology.

*** What do you plan to do during the next reporting period to accomplish the goals?**

No change.

Supporting Files

	Filename	Description	Uploaded By	Uploaded On
(Download)	UVA Toolkit Revised Year 1 12-13 original submission 7-13.pdf	This is a corrected version of the UVA toolkit to address revisions in the departmental data.	Gertrude Fraser	12/09/2013
(Download)	UVa ADVANCE NSF Interim evaluation report 11-13.pdf	U.Va. This is the extended version of the interim evaluation report that includes overall assessment of each initiative and analysis of participant responses to surveys and questionnaires.	Gertrude Fraser	12/09/2013

Products

Websites

Title:

Draft--UVA Faculty Practices Survey

URL:

<https://www.surveymonkey.com/s/757VGRW>

Description:

Needs assessment and feasibility draft survey that will be used to assess respondents' orientation to faculty recruitment best practices along the following dimensions.

Likelihood of positive impact	Viability in your department	Priority this initiative deserves	Frequency Dept already does this
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Title:

New Logo and Name for UVA program

URL:

<http://advance.virginia.edu/>

Description:

This website carries the new name and logo for the UVa program --this was the winning contest entry.

Title:

UVa ADVANCE Life Friendly Faculty Guide

URL:

<http://advance.virginia.edu/life-friendly.html>

Description:

Brochure Guide prepared by the U.Va. ADVANCE program to support the recruitment, development, and career success of diverse tenure-track/tenured faculty. Sponsored by the NSF ADVANCE AWARD #1209197. Disseminated to search committees, candidates, current faculty members.

Other Products

Product Type:

Databases

Description:

Internal evaluation team collects and updates all requirements for the NSF ADVANCE toolkit. Most recently they have collected space and grant data. Toolkit is attached. Toolkit is shared with stakeholders and university leaders.

Other:

Impacts

What is the impact on the development of the principal discipline(s) of the project?

Social science study accomplishments thus far have substantial intellectual merit. As we noted in the proposal, the social science research is grounded in theory from social psychology and human geography. It offers innovations in both practice and theory. First, in practice, it opens up new avenues for interventions—interventions that are practicable and that can redirect the onus on “architects” of STEM spaces, not the women who feel “out of place” in these spaces. In terms of theory, it expands our characterization of women’s underrepresentation in STEM, looking beyond the social features of STEM environments to the physical features of STEM-related spaces. To date, these features have not received systematic attention. The correlational (survey) and observational studies we conducted in Year 1 advanced our knowledge on this matter; they

showed that, indeed, features of our physical environment (e.g., how safe the environment is and feels, where students sit) are associated with sense of belonging in STEM among women.

Further Impact

If our poster submission is accepted, we will have the opportunity to share our research findings at the annual meeting of the Society for Personality and Social Psychology. We think that doing so will encourage other researchers to look at physical—not only social—features of STEM environments.

Internal evaluation for 5 initiatives:

The updating of the worksheets for each initiative or sub-component has helped to elucidate the steps needed to complete each task, as well as make clear the formative assessment efforts that will guide and propel forward our progress. It has also helped to form a closer collaboration between the Internal Evaluation team and the leads of the individual initiatives. Assessing and learning from our own processes may assist other ADVANCE units as well as other units interested in gender equity issues in optimizing their own processes.

Data Tool Kit:

The analysis of baseline data related to Space Allocation by gender will allow us to assess impacts of the ADVANCE-IT initiatives on these processes at U.Va. and will be disseminated through publications and sharing with ADVANCE programs.

What is the impact on other disciplines?

Social Science Study

Work in human geography and feminist geography has long recognized the importance of felt safety on sense of belonging. Of note, this work tends to be qualitative and descriptive. Our current ADVANCE work provides converging empirical evidence and, in time, it may provide causal evidence that felt safety leads to sense of belonging (rather than vice versa, for example). It also provides evidence that features of the physical environment (such as felt safety) extend to sense of belonging in STEM, not just the University.

In addition, our partnership with the Office of the Architect and the Department of Computer Science is raising awareness; the physical context matters and we, as an institution, need to attend to it more.

As noted above, our current findings expand our characterization of women's underrepresentation in STEM, looking beyond the social features of STEM environments to the physical features of STEM-related spaces. To date, these features have not received systematic attention. The correlational (survey) and observational studies we have conducted advance our knowledge on this matter; they show that, indeed, features of our physical environment (e.g., how safe the environment is and feels, where students sit) are associated with women's sense of

belonging in STEM. Our archival study adds to this; in this study, we find that proximity to female faculty was a predictor of productivity for male and female faculty in STEM but not in non-STEM fields. Our experimental studies in the next two years will test whether features of the physical environment *lead to* a sense of belonging in STEM (or lack thereof).

What is the impact on the development of human resources?

U.Va. ADVANCE Dual Career

Dual Career support services was the third U.Va. ADVANCE – VPFRR recommendation for the Cornerstone Strategic Plan. The recommendation is to expand dual career services and support with a reallocation or addition of staff in a dual career operational service area.

Outreach Fund

ADVANCE funds departments in STEM/SBE who have demonstrated active recruitment strategies including inviting additional STEM-SBE finalists to campus so that they may be given opportunities to compete for faculty positions. ADVANCE funds may be used to pay for travel and other expense related to late candidates' visit.

Internal Evaluation

Sharing toolkit data and with institutional leadership in preparation for the Dialogue event encouraged our Provost to assign Sheryl Sandberg's [Lean In: Women, Work, and the Will to Lead](#) as a shared read to a book club made up of the University's academic deans.

What is the impact on physical resources that form infrastructure?

Social Science Study

As this work progresses and as we disseminate our findings, we think this research will (1) provide compelling evidence that STEM spaces (i.e., physical spaces in STEM-related buildings and departments) need to look and feel different to be inclusive, and (2) provide specific guidelines or at least examples of how STEM spaces need to look and feel. Our experimental and longitudinal studies in Years 2-5 will address the latter.

The fact that the Office of the Architect is interested in our work suggests that changes to the infrastructure (e.g., lighting on campus) can and will happen as a result of this work. These changes, however, require funding.

What is the impact on institutional resources that form infrastructure?

U.Va. ADVANCE and the Office of the Vice Provost for Faculty Recruitment and Retention (VPFRR, PI Fraser) provided three proactive hiring-related planning recommendations to the University's Cornerstone Plan 2013 – 2018. All three of these recommendations subject to approval of the Board of Visitors to be instituted as Cornerstone Plan “pillars – strategies” in the university's (broader impact and institutionalization) strategic plan. Specifically, U.Va. ADVANCE and the VPFRR recommended three hiring - related initiatives for the strategic plan which were accepted by the Board of Visitors. These are: continuous active recruitment, dual career support, and the institutionalization of the academic portal. “Continuous active recruitment” (C.A.R) will be a strategy employed by U.Va. to address faculty proactive recruitment and hiring. Active recruitment is an industry norm and now recommended by academic search experts (Bilimoria and Buch, 2010; Dyer, Montelone, Rezac and King, 2006; Stewart, LaVaque-Manty and Malley 2004; Turner, 2003; Vicker and Royer, 2006), to systematically identify high-potential faculty candidates (potential applicants), build stronger relationships with targeted candidates, and “close” recruitment efforts successfully. This process will be crucial to address hiring efforts in the next 5 – 7 years to replace retirements and to build the community of scholars. This is a continuous strategy to cultivate long term relationships and connect to those who may potentially become applicants (or possibly refer others) for immediate and/or long term faculty openings and to specifically reach those who are underrepresented at U.Va. – women and underrepresented women/men minorities. This requires a departmental leadership focus at all times (and dedicated time) on the short and long term process of outreach (networking), and cultivation of professional working relationships to develop and maintain these contacts often assisted by technology platforms. Known as Driver #2 in the Plan, this strategy establishes the direction for the academic division of the university under Pillar 4 to, “Assemble and support a Distinguishing Faculty” because “high quality faculty is essential to missions of teaching, research, patient care, and public service.”

Changes

Changes in approach and reason for change

Due to difficulty coordinating External Advisory Board (EAB) schedules, the planned site visit in the Fall occurred virtually. This gives us more time to coordinate the on-campus visit in Spring 2014.

Three new members have joined the EAB. They are: Christopher Comer, Dean, College of Arts and Sciences, Professor of Biology and Neuroscience, University of Montana (Chair, U.Va. ADVANCE EAB) and a former co-PI, ADVANCE IT, UIC; Samuel Mukasa, Dean, College of Engineering and Physical Sciences, Professor of Geology, University of New Hampshire; William E. Walden, Professor of Microbiology and Immunology, and Associate Dean for Diversity and Inclusion, College of Medicine, University of Illinois at Chicago; former Special Assistant on Diversity to the Provost and Chancellor, UIC.

<http://www.advance.virginia.edu/images/ADVANCE%20Organizational%20Chart.pdf>

Challenges for the Structured Dialogue Initiative

In some cases, the chairs needed the structured dialogue meetings to occur in several small groups simultaneously during regularly scheduled faculty meeting times to cover the entire department. This was unforeseen and PI Fraser quickly identified several new facilitators (renamed “moderators” to define their active role in questioning and narrative elicitation to structure and frame the group conversation). Dr. Galbraith met with each moderator (to acquaint them with the structured dialogue model, and debriefed each after every session. One discovery from the debriefing meetings was the need for more concrete, less hypothetical examples to encourage conversations in the engineering areas. Therefore, a series of case studies will be developed for this purpose.

Objective #3 Tournament of Ideas

Dr. Archie Holmes will be transitioning out of the lead role of this initiative due to his added responsibility in the Office of the Provost. Several ideas were developed to launch this initiative in Project Year 2, and once a new leader is identified this initiative will proceed on time.

New Logo and Name for U.Va. ADVANCE

At the February U.Va. ADVANCE launch, we initiated a naming and logo contest. The successful entry would communicate our program objectives and impact. Contest entry reviewers agreed that “U.Va. CHARGE” was an appropriate new identity because it denotes motion, action, and forward movement. On November 15th, a permanent sign with the new U.Va. CHARGE logo/name was installed at Rice Hall to identify ADVANCE office space dedicated by SEAS Dean, Jim Aylor. The marquee (virtual sign) in the Rice Hall front lobby displays the five ADVANCE initiatives for hundreds of students, faculty, and visitors who enter Rice Hall daily.

Actual or Anticipated problems or delays and actions or plans to resolve them

Actual or Anticipated Problems or Delays and Actions or Plans to Resolve Them

IAB (Internal Advisory Board)

It was difficult to schedule an Internal Advisory Board (IAB) meeting in Fall 2013. We are working on a December 2013 IAB meeting. We have also developed a better idea of how the IAB members can support ADVANCE. At the December meeting we will seek members’ ideas about how each may serve ADVANCE and ask for their assistance as policy and diversity leaders for the content review subcommittee for the academic portal development. Secondly, we will ask the members to identify key challenges for the Tournament of Ideas (Initiative/Objective #3) in Project Year 2 and ask for their recommendations of new implementation team members, allies and affiliates.

Social Science Study

In our original social science research proposal, we proposed 3 experimental studies (Studies 3a-3c). In Study 3a, we proposed to manipulate how students *use* STEM spaces to see how use of space affects sense of place in STEM. In Study 3b, we proposed to manipulate *perceptions* of

STEM spaces to see how perceptions of spaces affect sense of place in STEM. In Study 3c, we proposed to manipulate STEM *spaces* to see how physical features of the space affect sense of place in STEM. For each study, we proposed a specific manipulation (e.g., randomly assign students to sit in the front vs. in the back of the classroom; randomly assign students to perceive space as relatively small and private or relatively large and public; randomly assign students to wear earplugs to “shrink” the space they are in vs. not). We will change some of the manipulations for some of these studies. Specifically:

1. Study 3a will remain unchanged. We will randomly assign participants to sit in the front or back of the class. We are currently considering how to best do this, which is not easy because of ethical concerns. Based on our survey and observational data, we think that there may be positive consequences to sitting in the front of the class and negative consequences to sitting in the back.
2. Study 3b has changed. We are still manipulating students’ perceptions of space but we are not randomly assigning them to think of STEM spaces are relatively small and private vs. relatively large and public. Instead, we are investigating how the masculinity and femininity of the space, and how the perceived safety of the space affect sense of place in STEM spaces. This change is based on our preliminary survey data from Year 1. In addition, we would like to conduct a study in which students are randomly assign to use a smartphone app aimed at empowering students to use space and test whether increased use of space boosts students’ sense of place. This latter study will require the participation of a team of 4th year Computer Science majors. We are currently recruiting such a team.
3. Study 3c may change. We would still manipulate students’ space. However, rather than asking participants to wear earplugs, we would change the physical space more directly. Specifically, we would like to conduct a natural experiment, testing whether increased lighting on campus affects students’ and faculty members’ sense of place at the University. This study would require the participation of the Office of the Architect and funding from the University for the lighting project. We are currently in conversations with the Office of the Architect and Student Housing about procuring that funding.

Note that these changes do not change the scope of the work. We are still planning on manipulating the physical environment, perceptions of the physical environment, and use of the physical environment. We are simply building on our current data, to create better, more informed interventions to boost students’ sense of place in STEM.

Evaluation

The only delay is in the reporting of a regression analysis on faculty salaries. There is an ongoing study taking place currently at the university, and the results have not yet been released. When the results become public, we will complete that report.

As the plans and progress for the 5 initiatives changed over time, so did the formative assessment of those initiatives. Those changes are described in detail in 10 worksheets outlining the tasks necessary for completion of the initiatives and their accompanying formative assessment plans.

Changes that have a significant impact on expenditures

Costs associate with planning and designing the academic search portal are more than initially budgeted. The P.I. will revisit the budget and may seek readjustments.