



NSF Annual Report, U.Va. ADVANCE IT #1209197, Project Year 1: October 1, 2012 – June 30, 2013

What are the major goals of the Project?

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 and 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.

Accomplishments

Major Activities

New STEM/SBE Women Faculty Hires

As of May 2013 we report that there are 10 new STEM/SBE women tenure- track/tenured faculty joining STEM/SBE departments.

The 5 new SEAS (School of Engineering and Applied Sciences) faculty:

Systems & Information (SIE): 2 assistant professors

Chemical (CHE): 1 assistant professor

Computer Science (CS): 1 assistant professor

Biomedical: 1 assistant professor

The 5 new women faculty STEM/SBE in Arts and Sciences:

Astronomy: 1 assistant professor

Chemistry: 1 assistant professor

Politics: 1 chaired professorship

Statistics: 1 chaired professorship

Sociology: 1 assistant professor

Accomplishments:

Key Outcomes or Other Achievements

Dissemination

PI Gertrude Fraser provided the closing remarks at the "Accelerating Change for Women of Color in STEM: Policy, Action, and Collaboration" conference on May 10th at the Institute for Women's Policy Research conference in Washington, DC. The conference addressed the identification of promising policy and programmatic changes for increasing the representation of women of color faculty in STEM disciplines, to define areas of action for different audiences invested in accelerating the progress of women of color in STEM, and to develop new relationships among individuals and organizations committed to the advance of women of color in STEM academic careers.

Accomplishments

Key Outcomes or Other Achievements

Opportunities for Professional Development

As part of our dedicated institutionalization efforts, we reserve five to ten slots annually for STEM women in LAM, Leadership in Academic Matters program, the U.Va. hallmark leadership development program. We met our annual goal in 2012-2013. Five STEM women completed LAM this year: 3 Engineering and Applied Sciences: 1- Civil and Environmental, 1- Mechanical and Aerospace and 1- Biomedical; 2 STEM/SBE: 2- Politics. STEM women were 16.6% (5/30) of the available program slots this year while STEM men were 6% (2/30) of the available slots. LAM is open to those who have demonstrated leadership characteristics and future potential. It offers concrete resources, access to expertise and experiential learning opportunities in one-half day workshops over several months, and is facilitated by leading experts in academic leadership. Workshops address: dimensions of leadership, appreciative practices and leading positive change, financial decision-making, leveraging difference, negotiation skills, media training, mindfulness, writing, emotional and social competency inventory, difficult conversations and leading across generations, emotional intelligence, team-building, balance and renewal, networks, influence in organizations, and servant leadership.

Accomplishments

Results

Evaluation Summative Plans

Ten detailed formative assessment plans were developed for all five initiatives and their subcomponents. A series of fourteen tables (tool kit) were developed to establish a baseline of indicators of institutional and departmental level data for the three years prior to the award and where applicable the results of the first year of the ADVANCE IT award action.

Evaluation Process Check

In this past quarter, the PIs agreed to a consistent project planning review and evaluation planning process for each of the five initiatives. This has had a dual benefit: by delineating the steps it will take to successfully implement each initiative, this process has provided the opportunity for the evaluator to become highly aware of the details of each initiative and for all team members to discuss and provide their feedback on each initiative during the important early planning process. In April and May, Dr. Inkelas, the evaluator, met with each initiative leader. From these meetings, detailed, specific formative evaluation plans were designed for each initiative for the duration of the five year grant period. These plans were also used to help design the external evaluation tasks.

Process Check (insert in the “Challenges” or “Problems” section of research.gov)

At the May 22nd Evaluation meeting, there was a discussion on the Enhancement Fund call about to be issued to all women faculty. The evaluator asked how we would collect applicant demographic data to see, if in fact, URM women were applying. The collection of applicant demographic data had not been built into the process, but once it was raised the group agreed that it should become a part of evaluation process. Based on this discussion, the co-PI drafted an email to send to applicants after their application had been received. The draft email thanked the applicant for applying and requested that she voluntarily complete and submit a demographic survey. The team reviewed the email draft, offered comments, and within 48 hours the email design was agreed upon to capture demographic applicant data and was added to the initiative’s evaluation tasks.

Evaluation Team-building Capacity

The project planning process for each of the initiatives has helped to form a closer collaboration between the internal evaluation team and the leads of each of the initiatives. The process of meeting one- to- one with the evaluator and each initiative leader has benefited both and the entire team. These meetings and the close involvement of the evaluator in each team meeting has built a greater understanding of the role

of evaluation in successful implementation and challenged us to think more broadly and creatively about assessment and how and when to measure the impact and outcomes of each initiative. This was an important step to happen in our first project year and we will continue this interactional process throughout the term of the grant as a best practice.

Products (or Impact)

Evaluation Worksheets

An evaluation worksheet template was designed to detail the tasks and formative assessment plans for each of the five initiatives and their subcomponents. The worksheets include these elements: a description of the initiative or subcomponent of an initiative, the goal(s) for the initiative or subcomponent, a line-by-line task list of activities to complete the initiative or subcomponent, the expectations for the task, the primary point person for the task, an estimated timeline for the activities associated with the task, any accompanying formative assessment plans associated with the task, and an overall description of the summary assessment. The worksheets include the summative external assessment plan as well. A series of 14 tables (tool kit) were developed to establish a baseline of indicators of institutional and departmental level data for the three years prior to the ADVANCE IT award and where applicable the results of the first year of the ADVANCE IT grant action.

Changes/Problems

Internal Evaluation Process for 5 Initiatives (Objectives)

Each initiative and its subcomponents evolved due to more detailed development discussions at weekly implementation team meetings. To address these evolutions the internal evaluator naturally evolved the internal and external evaluation plans as well. The discovery and documentation of these evolutions was accomplished in April and May from meetings between each initiative leader and the evaluator, and from the May 22nd evaluation team meeting. From these meetings, detailed, specific formative evaluation plans were designed for each initiative for the duration of the five year grant period. These plans were also used to help design the external evaluation tasks.

Broader Impact

Assessing and learning from our own project planning for each initiative may assist other ADVANCE programs and other internal or external units interested in gender equity issues and in optimizing their own processes. The development of the project planning 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 our progress forward throughout the grant period.

Major Activities

Objective #1 (Initiative #1 DDAT Departmental Diversity and Action Transformation)

Structured Dialogic Background information was prepared to use in introductory meetings with volunteer selected department chairs to offer consulting on departmental climate. A team was formed to approach department chairs to offer structured dialogic consulting to four departments. Departments were identified because they will be hiring next year. The team members were: Dr. Gertrude Fraser, Dr. Archie Holmes and Dr. Galbraith (external consultant). In April, May, and June the team met with four department chairs from: Politics, Computer Science, Mechanical Engineering, and Chemical Engineering. Various ways of interfacing with the chairs were developed through a 3-4 step process to engage chairs in considering the use of structured dialogic intervention to address departmental level climate issues. The consultant worked through many dialogic designs and reviewed these with colleagues to find an appropriate design.

Gender Equity Consultants

Three experienced gender equity consultants were identified and have been provided with training by Dr. Joanne Cohoon. Each consultant is committed to serving one department in Project Year 1 and to serving other departments in subsequent project years with the possibility of identifying one volunteer faculty member from within U.Va. A draft research-based list of “Equity Practices” to specifically improve women faculty’s recruitment, retention, and advancement was created to fast-start the equity consulting process. The practices were selected based on a familiarity of the literature and experience with departmental level change, and were reviewed with the implementation team members. Departments that will be hiring next year will be identified early this summer and will be contacted to volunteer to engage in this consulting process. Once engaged, the department will work with the consultant (with assistance from Dr. Cohoon) and select at least two practices likely to have a positive impact starting in fall 2013.

Objective #2 (Reimagined Spaces: Voices and Visibility)

Lived Experiences: Oral Histories

Dr. Gertrude Fraser will conduct the documentation of oral histories of STEM and SBE women faculty at U.Va. This process will make their lives and contributions visible to increase awareness, and to better understand the collective issues related to women and the process of U.Va’s organizational change. Two interviewers are currently being recruited and they will be trained in a McAdams prototype instrument relevant to U.Va this summer. The interviewers will undergo extensive interview training through a pilot or mock interviews. The goal is to recruit current and senior women in 4 cohorts of 10 women (5 STEM and 5 SBE) hired in each decade from the 1960/1970s until the present. Interviews will begin in the fall of 2013.

Photography Project

This project, led by PI Fraser, will increase the number of images and physical representation of STEM/SBE women faculty to make them known as scholars in their fields and in ways that each prefers to be known. A goal (hope) is that women, who are photographed, as well as other women, will increase their sense of belonging to U.Va. Some photos were taken earlier this year and prominently displayed at the U.Va. Launch on February 7, 2013. This project will officially start in Project Year 2. The first step in the fall of 2013 will be to hire photographer and provide information on the aesthetic that is sought in working with the women participants.

Physical Environment (Social Science Project)

This project investigates the sense of belonging via the physical environment with regard to safety and inclusiveness. This project investigates the physical environment as a signaling factor in the structuring of inequality.

Major Activities

Dr. Sophie Trawalter, co-PI, made significant progress on the first two objectives of the study: (1) to document women’s use of space in STEM-related spaces and (2) to identify patterns of space use that may undermine these women’s sense of belonging in STEM. Dr. Trawalter conducted two major surveys: one with undergraduate students (Study 2a), one with faculty members (Study 2b). Specifically, survey data was collected from over 1000 students and approximately 250 faculty members. Observations were also conducted of students’ use of space in STEM and non-STEM classrooms—observations that were able to be linked to the students’ survey data (Study 1a). Currently, observations are starting of faculty members’ (women and men) use of space (Study 1b). This endeavor will require extensive coding of archival data (e.g., blueprints of office spaces). A team of undergraduate research assistants has been assembled for this purpose, and they will be doing coding this summer.

Significant Results (including major findings, developments, or conclusions -- both positive and negative):

Preliminary data analyses suggest a number of things—some of which we predicted, some of which we anticipated, and some of which we did not:

1. Compared with men at the University, women at the University reported feeling less at home in STEM/SBE. This is consistent with much previous research and, of course, the reason ADVANCE is such an important endeavor.
2. Compared with men, women reported being significantly more concerned about their physical safety on campus
3. These safety concerns are likely to have major consequences; e.g., compared with men, women reported they were less likely to use STEM (and non-STEM) spaces at night due to safety concerns. In other words, their use of STEM (and non-STEM) spaces is constrained by their concerns about safety.
4. Concerns about safety were associated with women's but not men's sense of belonging in their field/major
5. Compared with men, first-year female undergraduates taking STEM classes were more likely to sit in the back of the class; by their fourth year at the University, female undergraduates taking STEM classes were more likely to sit in the front of the class. These data are observational and, thus, it is difficult to interpret these findings. It is not clear whether fourth-year men were choosing to sit in the back of the class, leaving the women sitting in the front; or, whether fourth-year women were choosing to sit in the front, leaving the men sitting in the back. It is also unclear whether first-year women were moving from the back to the front of the class as they progressed from first to fourth year; or, whether the (few) first-year women who sat in the front of the class were the ones who stayed in STEM (who took STEM in their fourth year). These questions notwithstanding, it is clear that gender is associated with patterns of space use, as we predicted.
6. Where women sit in STEM classrooms seems to matter. Students who sat in the front of classrooms reported feeling more at home in their major relative to those who sat in the back.

Key Outcomes or Other Achievements (including a discussion of stated goals not met)

Generally speaking, we met our research goals for Year 1. We conducted observational and survey studies (Studies 1a and 1b, 2a and 2b) that will serve as the foundation for Year 2-5 experimental and longitudinal studies.

Changes/Problems

Below, we note some small changes and additions to our Year 1 research (see Changes/Problems section). These changes and additions, however, do not change the scope of our work

Change 1: Coding for **Study 1A** has been completed though note that we restricted our coding to classrooms spaces. Identifying other spaces (i.e., study spaces) was more difficult than anticipated as many study spaces are not technically or officially study spaces (e.g., Einstein's Bagel area in the new Computer Science building).

Change 2: Survey data collection for **Study 2B** was undertaken. Originally, we had aimed for 400 faculty respondents. In retrospect, this was probably too ambitious; it would have required a 46% response rate from our faculty. We did collect data from 250 faculty respondents. We are pleased with this number as it represents a 29% response rate.

Addition 1: Coding for **Study 1B** is currently under way. We are supplementing these data with coding of faculty members' websites and CVs, to link faculty members' use of space (e.g., their use of office and lab spaces) with their productivity. These data will then dovetail nicely with Study 2B data.

Addition 2: Survey data collection for **Study 2A** was completed. We collected observational data in addition to these survey data (i.e., for Study 1A). Specifically, we assessed students' use of space in the classroom (for Study 1A) and are linking these data to our survey data; in other words, we are now able to examine whether students' sense of place at the University and in their major predicts their use of classroom space.

Major Activities

Objective #3 (Tournament of Ideas)

Dr. Archie Holmes reviewed a preliminary design of several tournament program elements this quarter to prepare for the Tournament implementation in Project Year 2. A draft of the tournament guidelines/rules, challenge ideas, and problem statement were vetted with the implementation team in three meetings. Feedback was also gathered on tournament organization with other U.Va. tournament organizers. A team will be assembled to draft the problem statement, establish judging criteria, and to create an advertising plan with a website to collect Tournament of Ideas submissions by early fall 2013.

Major Activities

Objective #4 (Recruitment, Search and Selection)

Outreach and Travel Fund

Co-PI Pam Norris oversees the fund application and review processes. The first annual call for fund requests was issued on May 13th to Dean Woo of A&S (STEM/SBE), Dean Aylor (SEAS), and Chairs. The announcement, guidelines, and request forms were developed in March and April and reviewed with the implementation team. The fund's purpose is to support the recruitment of women (especially underrepresented women) and to increase the number of women in STEM and SBE interviewing on the Grounds each year, and to see an increase from the prior year. The fund assists departments with outreach and travel to assist with identifying and recruiting highly qualified women tenure track faculty candidates, especially underrepresented women candidates, in science, technology, engineering and math (STEM) and social, behavioral and economic (SBE) departments. These funds, up to \$1,500 per search, are meant to supplement and leverage other resources, such as existing candidate travel funds. Funds could be used, for example, to make it possible to bring an additional candidate to the Grounds when a travel budget may be limited, or to bring a candidate back for a second visit to convince them to accept an offer. The funds could also be used for targeted recruiting trips for outreach to underrepresented candidates. This announcement came very late in the recruiting period this year, but we plan to make this fund available and advertise at the very start of the academic year, in subsequent years. Requests are currently being accepted and will be reviewed by a panel of stakeholders who can tap funds within SEAS and CAS to supplement ADVANCE funds.

Major Activities

Academic Search Portal

Dr. Mary Lou Soffa is overseeing the development of an interactive website with resources relevant to the recruitment of women (in particular underrepresented women) in STEM/SBE for search committees and others beyond STEM. In this regard the portal plan of development is addressing institutionalization and broader impact. The portal will offer additional information on onboarding, welcoming new hires, transitions, and dual career considerations. The portal will fundamentally change the search process and is intended to support the increase in diverse pool by gender and underrepresentation. Dr. Soffa and the

two graduate computer science students have already conducted research of existing search portals, processes, and documents. A design “look” has been completed and a mockup of a web page has been constructed.

Strategic Plan

The (ADVANCE) Academic Search Portal has been provisionally recommended as a university-wide resource in the U.Va. 5-year strategic plan. The university is also in the process of developing a plan to recruit distinguished and diverse faculty. ADVANCE has defined a goal to include active recruitment in the university’s plan which we have named, “C.A.R. at U.Va.” which stands for **C**ontinuous **A**ctive **R**ecruitment.

Department Demographic Profile and Pool Availability

PI Gertrude Fraser and interim Program Manager Linda Siebert developed At-a-Glance data sheets in April that summarize the SEAS U.Va. current faculty in each of the 9 departments by gender, underrepresentation (URM), and rank. This objective intensifies face-to-face education and outreach with search committees and to hiring authorities, and addresses hiring plans, outreach and recruitment plans. The goal of providing these data sheets which include diverse candidate pools (women of color and majority women) is to stimulate departments to be more proactive in their outreach to diverse applicants and to encourage them to become candidates and eventually to be hires at U.Va. The data sheets also allow departments to benchmark their current faculty diversity against their peers, and to identify specific targets to address.

For departments with open positions this year, we also summarized their applicant statistics. Dr. Pam Norris scheduled meetings with each of the SEAS chairs to share the presentation and to discuss the data, which shows the actual applicants to our SEAS departments are less diverse by gender than the available applicant pool. These department “snapshots” and data tables will now be updated annually and shared with search committees, chairs, and deans, at the start of the recruitment session. The goal of this activity is to have the Chairs understand that increasing the number of female faculty will require active recruitment and that some will follow-up with specific actions, perhaps using our outreach travel fund as a mechanism. Snapshots of each of the STEM/SBE departments in A&S are begin created now and will be offered to chairs and deans at the start of the new fall 2013 hiring season.

Dr. Pam Norris piloted the use of these data sheets in meetings with two SEAS chairs (MAE and MSE) in April. All other SEAS chairs will receive these data snapshots this summer in one- to- one meetings. At the start of the new hiring season, there will be active discussions by Dr. Fraser and Dr. Norris with chairs to review their department’s snapshots and to discuss active recruitment and outreach strategies.

Intellectual Merit

The value added by having the actual data presented and visible is powerful. This activity takes this truth and applies it to diversity data as well, with the information shared among respected/credible peers.

Major Activities

U.Va. Life-friendly Brochure

Dr. Fraser, Dr. Norris, and Ms. Siebert have developed a brand new brochure, “U.Va. Faculty Life-Friendly Workplace At –A-Glance.” This brochure is aimed to applicants, candidates, current faculty, chairs, deans, and search committees. It consolidates the “U.Va system” of career success programs, work-career flexibility, and life-friendly programs into one place. The brochure will be unveiled at the new

fall 2013 workshop on ways to improve searches. The brochure covers: faculty recruitment and retention (dual career couples, GAHERC (Greater Atlantic Higher Education Recruitment Collaboration); welcoming new faculty (relocation, U.Va. quick facts, new faculty orientation; career development (Leadership and educational benefits, promotion and tenure (clock stoppage, faculty handbook, family leaves, modified service leave), child and elder care, back up child and elder care, child care centers; fitness, exercise and wellbeing, and benefits.

Major Activity

Dual Career CLB Supplemental Proposal Submitted

On June 17, we submitted a Career Life Balance (CLB) Dual Career proposal to request a supplemental grant for a one-year full-time salary and fringe benefits for the dual career partner of a STEM female faculty to be hired in the 2013-14 hiring year. The process of applying for this supplemental grant has provided us with a new lens to frame and explore dual hiring as it relates to career-life balance, and to the overall institutional goals of recruiting women in STEM. We have provisionally added the Dual Career Partner issue into the University's 5-year Strategic Plan with recommended metrics described in our supplemental proposal to position dual career as a strategic university wide recruitment and retention issue going forward.

Dual Career Metrics

There is a need for more rigorous and systemic collection of data about the demand for dual career academic employment at U.Va. Therefore, questions about each new hiring cycle on the numbers of dual career employment requests disaggregated by race, ethnicity, gender and discipline, and whether those hires were within or across departments or schools, will now be added as a routine part of institutional reporting on faculty hiring. These additional data points will provide critical information to support strategic decision-making on resource allocation and support services for dual career hiring. We see the supplemental funds as catalytic to our ongoing plan to roll out an institution-wide set of powerful and engaging training programs for deans, department chairs and search committees on recruiting diverse faculty, including women and underrepresented minorities in STEM, with a specific focus on career-life balance. Assessment of impact will include integrating questions on the new dual career hiring activities into an ongoing longitudinal study on the factors influencing candidate decision-making to accept or decline faculty positions at U.Va. Benchmark data on faculty perceptions of dual academic hiring and career-life practices has been collected via the Clayman Institute Study, the Collaborative on Academic careers in Higher Education (COACHE) and a Faculty Senate survey. We will conduct follow-up surveys to discern any changes as a result of involvement with or exposure to the dual career initiatives emerging from activities related to this supplemental funding. Feedback from 2011-2013 search committee members (obtained as part of an ongoing initiative at U.Va.) also indicates that dual career is a critical dimension for recruitment. Search committee members have reported that as we are increasingly competing with top schools for elite candidates, U.Va. needs to showcase our strengths and best practices for dual hiring. The call for more dual career services co-exists alongside institutional ambivalence about the value of dual career academic hiring. Findings from the U.Va. Clayman Institute study indicate that only 8% of respondents strongly agreed that academic couples benefitted the department by adding something valuable. In addition, only 10% of U.Va. respondents strongly agreed that dual hiring increased the proportion of underrepresented minority faculty.

Major Activities

Objective #5 (Enhancement Fellows Fund)

This fund provides small grants for women in STEM/SBE to support their career development and to complete a legacy project. Underrepresented women and mid-career faculty are strongly encouraged to apply. As data suggests that time to full rank may be longer for women compared to men tenured faculty

in SBE departments, SBE faculty are especially encouraged to apply for resources to enhance their advancement from associate to full professor.

The UVa ADVANCE Enhancement Fellowship Program has been established. The review committee has been established. A call for proposals was developed and issued to all women STEM and SBE faculty, as well as the chairs of all STEM/SBE departments, on May 28th with a first deadline of June 28th, 2013. The review committee will consist of one representative each from A&S and SEAS with fiscal responsibilities that may make additional resources available, along with 1 additional representative each from A&S and SEAS, 1 ADVANCE Implementation team member. Three of these members have been identified: John Hawley (Assoc Dean A&S), Pam Norris (Assoc Dean SEAS), and Laura Galloway (Chair, Biology).

Accomplishments

Provost Simon agreed to augment the NSF funds to enable this initiative to be expanded to non-tenure track women. There is a commitment for each year of the 5 years of the ADVANCE program. The announcement of the “UVa ADVANCE Enhancement Fellowships” was sent via email to Dean Woo, Dean Aylor, All Chairs in STEM and SBE Disciplines, and all women STEM and SBE faculty on May 28th. The announcement is posted on the ADVANCE website and will be added to the University Facebook account. In June Dr. Norris will finalize membership in the application review committee. In June a survey will be developed to collect applicant demographic data, along with additional voluntary information to be provided for assessment purposes. By July we will distribute all applications to the review committee. By July we will distribute a survey to all applicants asking for their voluntary participation by July 30. By August 1 we will announce the winners of the initial round of funding for Enhancement Fellowships.

Changes/Problems

The use of the term “fellows” in the Enhancement Fund Fellows will be changed to remove gender-laden terminology and replaced with a gender-neutral name for the fund which supports women faculty’s career development. We will explore using the new fund title, Enhancement ADVANCE Scholars Fund.