

**Award ID: 0548311**

Annual Report for Period: 08/2008 - 06/2009

Submitted on: July 6, 2009

Principal Investigator: G. Tayhas R. Palmore

Organization: Brown University

Submitted By: G. Tayhas R. Palmore

Title: ADVANCE Institutional Transformation Award: Investing in Leadership Potential and Faculty Opportunities at Brown University

**Project Participants**

Name: Palmore, G. Tayhas

Worked for more than 160 Hours: Yes

Contribution to Project: Tayhas Palmore is a Professor of Engineering at Brown University and assumed Directorship responsibilities in March 2009 and was approved by the NSF to become Principal Investigator of the grant in May 2009. She oversees program implementation and supervises the Managing Director and Research Opportunities Coordinator. Prof. Palmore maintains relationships with Administrative Partners of ADVANCE (University President, Provost, Deans of Faculty and Biology/Medicine). Prof. Palmore did not receive financial support from the ADVANCE grant for the period 08/2008-06/2009.

Name: O'Neil, Pamela

Worked for more than 160 Hours: Yes

Contribution to Project: Pamela O'Neil, Associate Provost at Brown University, was the Principal Investigator of the ADVANCE Program at Brown until March 2009. She oversaw program initiative implementation and supervised the Managing Director and Research Opportunities Coordinator. Dr. O'Neil received no financial support from the ADVANCE grant.

Name: Fennell, Mary

Worked for more than 160 Hours: No

Contribution to Project: Mary Fennell is a Professor of Sociology at Brown University and serves as a Co-PI for ADVANCE. Mary was on leave for the academic year 2008-09, however, she contributed to ADVANCE data collection efforts and evaluation processes. Dr. Fennell receives no financial support from the ADVANCE grant.

Name: Schmitt, Johanna

Worked for more than 160 Hours: No

Contribution to Project: Johanna Schmitt is a Professor of Ecology & Evolutionary Biology at Brown University and serves as a Co-PI for ADVANCE. Dr. Schmitt receives no financial support from the ADVANCE grant.

Name: Fischer, Karen

Worked for more than 160 Hours: No

Contribution to Project: Karen Fischer is a Professor of Geological Sciences at Brown University and serves as a Co-PI for ADVANCE. Dr. Fischer receives no financial support from the ADVANCE grant.

Name: Briant, Clyde

Worked for more than 160 Hours: No

Contribution to Project: Clyde Briant is the Vice President for Research at Brown University. Clyde participated in both rounds of Career Development Awards Review Committee and moderated the first ADVANCE department chairs workshop entitled, Mentoring Faculty on Proposal Writing. Dr. Briant receives no financial support from the ADVANCE grant.

Name: Cyr, Michelle

Worked for more than 160 Hours: No

Contribution to Project: Michele Cyr is the Director of Internal Medicine at Brown University. Dr. Cyr receives no financial support from the ADVANCE grant.

Name: Hawrot, Edward

Worked for more than 160 Hours: No

Contribution to Project: Ed Hawrot is Associate Dean for the Program in Biology in the School of Medicine and Biological Sciences. He joined the ADVANCE Steering Committee in March 2009, and worked with the Faculty Mentoring Program. Dr. Hawrot receives no financial support from the ADVANCE grant.

Name: Dean, Carolyn

Worked for more than 160 hours: No

Contribution to Project: Carolyn Dean is Associate Dean of the Faculty. She joined the ADVANCE Steering Committee in March 2009, and has been the central liaison with the Office of the Dean of the Faculty since the grant's inception. Dr. Dean receives no financial support from the ADVANCE grant.

Graduate Student: Majumdar, Shruti

Worked for more than 160 hours: No

Contribution to Project: Shruti Majumdar is a graduate student in Sociology at Brown. She performed data analysis for ADVANCE during the summer of 2008. She received (hourly) financial support from the grant for the period of June 2008-July 2008.

Name: Love, Elizabeth

Worked for more than 160 Hours: No

Contribution to Project: Elizabeth Love is the Database and Website Manager in the Office of the Provost. She provides data management support for some program evaluation, helped prepare PowerPoint presentations, and addresses computer hardware and software needs. She receives no financial support from the ADVANCE grant.

Name: Robb, Amy

Worked for more than 160 Hours: Yes

Contribution to Project: Amy Robb is the Research Opportunities Coordinator for ADVANCE at Brown. She works closely with Brown's Office of the Vice President for Research; Corporate, and Foundation Relations; and university administrators to identify important research opportunities for faculty, to notify appropriate faculty of awards, and to facilitate application

processes. Amy manages the ADVANCE Career Development and Scientific Leadership Awards, and authors ADVANCE program communications including program and event announcements and the website. 100% of her time is allocated to the Brown ADVANCE Program.

Name: Murphy, Lynda

Worked for more than 160 Hours: Yes

Contribution to Project: Lynda Murphy served as Executive Assistant to Pam O'Neil in the Provost's Office, and supported the ADVANCE grant until March 2009. Lynda coordinated large scale events such as the external evaluator interviews and focus groups, prepared meeting materials, contacted vendors for office supplies and catering. Lynda manages the financial records of the grant and processes receipts. Ms. Murphy received no financial support from the ADVANCE grant.

Name: Overton, Susan

Worked for more than 160 Hours: Yes

Contribution to Project: Susan Overton serves as Managing Director and is responsible for the implementation of program initiatives, compiling institutional data and conducting data analysis, writing interim and annual reports to NSF, and collaborating with Brown faculty and administrators to further the goals of the program. She supervises the work of the Program Coordinator. 100% of her time is allocated to the Brown ADVANCE Program.

Name: Hedderich, Krista

Worked for more than 160 hours: Yes

Contribution to Project: Krista Hedderich serves as Program Coordinator for ADVANCE, and is responsible for scheduling meetings and programs, coordinating all program logistics, preparing meeting materials, and processing grant financial transactions, and conducting data analysis. Krista is 66% time employee and 100% of her time is allocated to the Brown ADVANCE Program.

**Web/Internet Site**

ADVANCE at Brown URL: <http://www.brown.edu/Administration/Provost/Advance/>

The site is organized around the program's four initiatives: Faculty Development, Leadership Initiatives for Women Scientists, Academic Department Transformation, and Visiting Scholars. Requests for Proposals (RFPs) for ADVANCE grants are available here, as well as Award Recipients' project descriptions and award outcomes. The website advertises upcoming lectures and events, relevant campus and, funding opportunities, University policies and procedures that support women faculty and faculty members who are parents, campus resources, and national reports and data.

In Spring 2009, the ADVANCE launched a wiki for initiative resources. This site includes presentations and additional reading materials from Visiting Scholars and presenters at ADVANCE-sponsored peer mentoring groups. It also contains information on funding opportunities. University policies and resources for issues such as dual career hiring and dependent care support are also available here.

### **Other Specific Products**

- Research Experience for Undergraduates

  - Activities and Findings

    - Research and Education Activities:

    - Findings:

    - Training and Development:

    - Outreach Activities:

    - Journal Publications

    - Books or Other One-time Publications

- Contributions

  - Contributions within Discipline:

  - Contributions to Other Disciplines:

  - Contributions to Human Resource Development:

  - Contributions to Resources for Research and Education:

  - Contributions Beyond Science and Engineering:

- Special Requirements

Special reporting requirements: None  
Change in Objectives or Scope: None  
Animal, Human Subjects, Biohazards: None

### **Administrative Partners**

Ruth Simmons, University President  
David Kertzer, Provost  
Rajiv Vohra, Dean of Faculty  
Ed Wing, Dean of Medicine and Biological Sciences  
Brenda Allen, Associate Provost and Director of Diversity Initiatives

### **I. Program Overview**

The overarching goal for Brown’s ADVANCE Institutional Transformation Award is “to increase the retention and advancement of women faculty in science and engineering by facilitating the path to career success for all faculty members. The ADVANCE Program at Brown develops and administers formal programs that make explicit the ingredients for faculty success, thereby guaranteeing access for women faculty. The ultimate goal is not simply to recruit more female faculty, nor to increase the rate at which they receive tenure, but to ensure that once recruited, women faculty members have a working environment that will allow them to achieve their full potential and ultimately assume positions of power in their discipline or in academic administration.”

The ADVANCE Program at Brown has four components:

Leadership Program for Women Science Faculty  
Faculty Development Programs  
Transforming Academic Departments  
Visiting Scholars.

The program has six “targeted outcomes”:

- To reduce faculty attrition

- To increase the number of women promoted to full professor
- To decrease time in the rank at associate professor level
- To increase the number of women rising in leadership positions
- To prevent mid-career burnout by encouraging and brokering collaborative projects
- To increase the amount of funded research for women faculty at Brown

## **II. Participation in Brown ADVANCE programs between August 2008 and May 2009**

511 faculty, students, and staff participated in programs and/or attended events:

Nine of 13 ADVANCE/STEM department chairs attended at least one training session or ADVANCE event during the year.

Twenty-one (21) of 48 women scientists in the physical sciences, life sciences, and biomedical sciences participated in Peer Mentoring Groups.

Fourteen (14) faculty members received ADVANCE Career Development Awards. See below for full description.

Three faculty members received ADVANCE Scientific Leadership Awards. See below for full description.

38 senior and junior faculty members across all disciplines were matched for the inaugural semester of the (ADVANCE administered) Faculty Mentoring Program, a collaborative project with the Offices of the Deans of the Faculty, and of Medicine and Biological Sciences.

10 faculty members and 10 graduate/medical students attended a Networking Reception for women of color, sponsored by ADVANCE and the Office of Medical Minority Affairs.

Approximately 37 faculty members in Arts and Sciences, and the School of Medicine and Biological Sciences were invited.

## **III. Year Three Activities**

Year Three was marked by successful implementation of all program initiatives; leadership and Steering Committee changes to facilitate greater awareness of ADVANCE goals and institutionalization of ADVANCE programs; and increased data collection and analysis. This report will outline our activities and accomplishments in the context of our four program components listed above.

## **Leadership Program for Women Science Faculty**

Leadership Awards from ADVANCE at Brown support women faculty who are interested in furthering their careers by assuming a leadership role within inter/national scientific communities or as academic administrators. There are four award categories: Career Development, Administrator Shadowing, Scientific Leadership, and Leadership Support.

Career Development Awards help women and men faculty access senior colleagues at other institutions who can serve as collaborators, role models, and sponsors. Award plans must explicitly address how the project impacts the careers of women scientists. These awards target assistant professors who are beginning to build their research program and midcareer faculty who want to work more collaboratively or make contacts in a new area of research. Since the ADVANCE Program at Brown began in 2007, we have conducted 3 award cycles and given 28 grants for a total of \$614,000. Faculty members have used their awards to seed further grant opportunities, cultivate mentors, and publish their research.

### *2009 Career Development Award Recipients:*

Ruth Colwill, Associate Professor of Psychology, \$15,000

Dr. Colwill is working with two female graduate students to collect data on the social behavior, communication, and cognition of the Eastern coyotes. Ruth will develop an NSF grant proposal to support this new research program and develop a peer network to enhance her competitiveness for further NSF funding in this area.

Sarah Delaney, Assistant Professor of Chemistry, \$15,000

Dr. Delaney is creating a collaboration between her own laboratory and that of Professor Eric D. A. Stemp from Mount Saint Mary's College. Their research focuses on the crosslink of DNA to proteins for the purposes of probing how OGG1 interacts with DNA within different structural contexts. Sarah will also travel to the 238th American Chemical Society National meeting to present the results of this research program.

Paja Faudree, Assistant Professor of Anthropology, \$15,000

Dr. Faudree will organize and host two interrelated initiatives: a seminar series featuring extended visits by very prominent senior figures in the field of linguistic anthropology and a day-long symposium feature both senior colleagues and junior women in the field who would benefit from mentoring opportunities. These proposed alliances represent an innovation in linguistic anthropology studies, which has been relatively slow to move in the direction of cross-disciplinary, collaborative research models.

Richard Freiman, Assistant Professor of Molecular Biology, Cell Biology, & Biochemistry |

Mary Hixon, Assistant Professor of Pathology & Laboratory Medicine, \$15,000

Professors Freiman and Hixon will establish a mentoring relationship with Dr. Barbara Vanderhyden, Corrine Boyer Chair in Ovarian Cancer Research and Professor at the University of Ottawa, in the area of ovarian cancer biology. Rich and Mary will undertake a change in the direction of their own work towards the arena of translational ovarian cancer research. One of the main objectives of this mentoring relationship is to jointly organize a one-day ovarian cancer symposium.

Amy Greenwald, Associate Professor of Computer Science, \$15,000

Having obtained tenure, Dr. Greenwald is changing the direction of her research to take advantage of her previous work as a member of the Electronic Commerce (E-Commerce) Research Group at IBM Research. Amy will work to build collaborative relationships with e-commerce research labs with such corporation as Google, Microsoft, and Yahoo! The end result of these collaborations is to broker funding opportunities through these companies' university relations programs.

Meredith Hastings, Assistant Professor of Geological Sciences, \$15,000

Dr. Hastings will develop collaborations with Professors Lonnie Thompson and Ellen Mosely-Thompson of the Byrd Polar Research Center at the Ohio State University. The aim of this work will be to identify and obtain an initial collection of tropical ice core samples. With this initial sample set, Meredith will complete a "proof of concept" project, showing her ability to make isotopic measurements on these unique samples and analyzing the variability of nitrogen oxide sources in the recent past based on the nitrogen isotopic composition of nitric acid.

Heather Leslie, Assistant Professor of Environmental Studies, \$15,000

Dr. Leslie will work with a range of colleagues and mentors on a variety of projects having to do with her research focus of the ecology, policy, and management of coastal marine ecosystems. Collaborators include Dr. Steve Gaines at UC Santa Barbara, a senior marine ecologist with interests in marine community ecology, biogeography, and reserve design. Dr. Chris Harley of University of British Columbia will work with Heather on heat stress and substrate effects. Dr. Miriam Fernandez is an evolutionary biologist at Pontificia Universidad Católica de Chile in Santiago, who has an interest in working collaboratively in the area of marine conservation biology.

Crystal Linkletter, Assistant Professor of Community Health, \$15,000

Dr. Linkletter will build collaborations with mentors and establish herself nationally and internationally in the areas of spatial modeling of social networks and contact-based disease transmission modeling. Crystal's collaborators include researchers at the Center for Statistics and the Social Sciences (CSSS) at University of Washington. She will also meet with Dr. Stanley Wasserman, Indiana University; Dr. Hugh Chipman, Acadia University; and Dr. Tom Britton, Stockholm & Dr. Tom Snijders, University of Oxford and University of Groningen.

Tayhas Palmore, Professor of Engineering, \$15,000

Dr. Palmore seeks to support two goals: (1) gain visibility in the field of synthetic biology through new research in her lab and as a consequence of this new research, (2) introduce synthetic biology to her own research community of bioelectrochemists and materials scientists.

James Russell, Assistant Professor of Geological Sciences, \$15,000

Dr. Russell will use these funds to develop larger collaborative frameworks around research programs on El Niño-Southern Oscillation (ENSO) in Indonesia. Colleagues with whom Professor Russell will work include Delia Oppo, at Wood's Hole Oceanographic Institution; Amy Clement of the University of Miami; Rosamond Naylor at Stanford; and Meredith Kelly at Dartmouth. Jim will also develop international collaborations within Indonesia.

Tricia Serio, Associate Professor of Molecular Biology, Cell Biology, & Biochemistry, \$19,500  
Dr. Serio will work with Dr. Suzanne Sindi, Prager Assistant Professor in Applied Mathematics, to develop and experimentally validate a stochastic model for the competition between different conformations of a single prion protein in live yeast cells. Using their established experimental approaches, Tricia and Suzanne will validate this model and then use it to predict more complex events in prion biology that lead to loss of the pathogenic form, including changes in chaperone levels and prion protein sequences.

Leah VanWey, Associate Professor of Sociology, \$15,000

Dr. VanWey will work with Dr. Cheryl Palm of the Earth Institute at Columbia University, to expand her influence in both in the broad field of human-environment science and in policy debates about development and environment. Leah will schedule her visits to coincide with meetings for the Millennium Villages Project in order to meet a variety of influential interdisciplinary researchers studying environment, human well-being, and development.

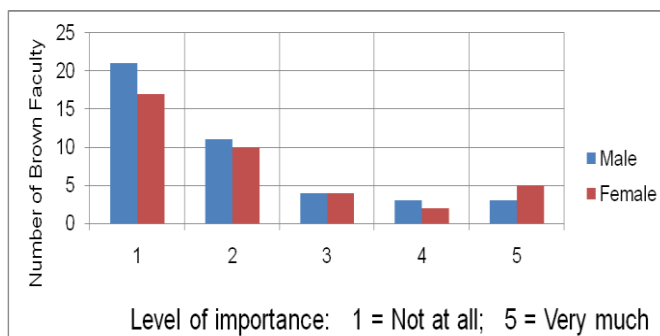
Anastasia Volovich, Assistant Professor of Physics, \$15,000

Dr. Volovich will host senior leaders in the field of twistor string theory and its applications to QCD, which has benefited greatly from the close interaction between mathematicians, string theorists, and collider physics experts. She will attend the Strings 2009 in Rome and co-organize a one-day annual "New England String Meeting" at Brown University.

The Administrator Shadowing Program was designed to give women faculty who are interested in pursuing an administrative career in higher education the opportunity to work with a senior level administrator at Brown to identify and implement a project that would have an institution-wide impact. The program provided financial support for teaching release time for the faculty member. Following the advice of our External Advisory Board, we changed the name of the program to "Advancing Leaders," and a Request for Proposals was released to all 32 tenured women faculty members in STEM fields in October 2008. Three senior administrators expressed interest in mentoring a faculty member's work on an institutional project: the Dean of the Graduate School, an Associate Dean of the College, and the Dean of Medicine and Biological Sciences. No faculty members responded to the call for proposals. The Steering Committee

took into consideration receipt of some corroborating data from our External Evaluator (see chart below) to re-evaluate the goals of this award. We will modify the “Advancing Leaders” Awards to facilitate a Brown “pre-department chair” leadership training (release time, purchase of resources and speakers) for interested faculty. Components of pre-chair training would include understanding issues of gender/race equity in the academy, negotiation and conflict management skills, and recruitment/overseeing faculty searches.

In response to this survey question from our External Evaluator, “How important to you is having a leadership role in the University through administrative positions?” 70% of the female faculty members surveyed responded that it was not important; only 6 female faculty members said it was important or very important.



The Scientific Leadership Development Awards were developed to facilitate women faculty members’ opportunities to assume positions of leadership within scientific disciplines. The awards provide teaching release time or other support so that women faculty will be able to take on leadership responsibility for a scientific society or editorship of a journal without jeopardizing their own ongoing research. Three Brown women scientists were awarded grants that will ensure continued support of their research agendas while they assume leadership roles in professional societies and organization.

*2009 Scientific Leadership Award Recipients:*

Johanna Schmitt, Professor of Ecology & Evolutionary Biology, \$28,942.37

Professor Schmitt has been awarded funding for her leadership activities as Past President of the Society for the Study of Evolution. Additionally, as the first Brown University woman elected to the National Academy of Sciences, Annie will use this support to continue her research as she works to promote the number of women nominated to the Academy.

Andrea Simmons, Professor of Psychology, \$3,807

Professor Simmons has been awarded funding to continue her research as she pursues activities as an elected member of the Executive Council for the Acoustical Society of America (ASA), a member organization of the American Institute of Physics.

Anita Zimmerman, Professor of Molecular Pharmacology, Physiology, & Biotechnology, \$5,000

Professor Zimmerman has been awarded research support during her tenure as a member of the Editorial Board of the *Journal of General Physiology*. This funding will also allow her to accept previously declined invitations to serve as a regular member of an NIH study section, to chair scientific meetings, and to run for office in the scientific societies to which she belongs.

The Leadership Support Fund provides women scientists with the means to attend administrator training or leadership programs provided by other institutions or professional organizations (e.g., HERS Institutes, COACHE workshops). This program encourages women scientists to assume positions of academic leadership, and provides access to networks of other leaders in academic and scientific fields. Requests for Proposals were released in the fall of 2008, and the spring of 2009; there was nominal interest, but no proposals. We will continue to cultivate awareness of this award with more information about discipline-related programs and seminars.

### **Faculty Development Programs**

Faculty Development Programs sponsored by ADVANCE at Brown offer faculty members opportunities for informal and formal mentoring; access to resources that support career success at Brown and in the wider scientific community; and greater awareness and understanding of University policies and practices that impact tenure and promotion at Brown.

#### *Mentoring*

The Faculty Mentoring Program (a cross-departmental one-on-one matching program) was implemented in the spring of 2009; 19 new and 19 senior faculty members participated in the inaugural semester of the program. This initiative is a collaboration between the Offices of the Dean of the Faculty, Dean of Medicine and Biological Sciences, and ADVANCE. Our immediate goals were

- to establish this program as an “opt out” program for all new faculty members;
- to situate ADVANCE as the primary administrator for the program (making matches, initiating training sessions, becoming the “go to” office for problem-solving and advice about mentoring, and evaluating the program); and

- to solicit the endorsement of the Provost and Deans of the “opt out” program.

All goals were met.

The Provost issued a call to all senior faculty members to become Mentors: 21 males and 6 females responded, with equal representation from the Humanities, BioMed, and the Social and Physical Sciences. 19 of 25 new faculty members chose to participate as “mentees.”<sup>1</sup> Matches were made in February 2009; all participants were notified and received the ADVANCE-created “Faculty Mentoring Program Guide.” Mentors were expected to initiate the first meeting. ADVANCE offered a training session for Mentors entitled, “Generational Differences Among the Faculty” which was presented by Dr. Sharon Hostler, Vice Provost for Faculty Development at the University of Virginia; 8 mentors attended the session.

Mentees’ evaluations (20 out of 22 responses) of the Faculty Mentoring Program are very positive; Mentors’ evaluations (10 out of 22 responses) are tempered, but generally positive. Between mid- February and mid-May 2009, 50% of the pairs met once and 25% met twice. Four of the pairs did not meet.

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<sup>1</sup> Three additional junior faculty members were matched with Mentors in the fall of 2008 by the Associate Dean of the Faculty; they are included in this “cohort” for programmatic and evaluation purposes. The total number of Mentoring pairs for which ADVANCE offered support was 22.

13 out of 16 Mentees who had met with Mentors reported that the relationship was beneficial; 3 mentees did not respond to this question. Five mentees noted that their experiences with a cross-departmental mentor were very helpful; that their mentors were “excellent,” “genuinely interested,” a “great sounding board,” “helpful in understanding University structures” and making sense out of department policies that were “opaque.” 8 out of 10 Mentors requested to continue meeting with their Mentee, and would volunteer to be Mentors again. 9 Mentors used the *Faculty Mentoring Program Guide*: 11% found it “very helpful”; 33% found it “helpful”; 44% were “neutral” (1 no response).

Topics most often discussed were:

- Criteria for tenure and promotion

- Publications and writing

- Committee/service work

- Identity and development of career goals

- Organization of the University

More mentees than mentors reported discussing work/life balance; Brown family care policies; and Brown funding resources, perhaps reflecting different generational priorities among faculty members, and, in the case of funding resources, the limitations on shared knowledge of funding sources across departments.

Challenges for next year include making mentoring matches early in the fall semester; offering Mentors to all junior faculty (not just new faculty members); training Mentors about issues that impact the retention of women faculty and faculty of color; and sensitizing (male) senior faculty members to the importance of problem-solving around work/life issues.

Three Peer Mentoring Groups began meeting in October 2008, providing women STEM faculty members with opportunities for group problem solving and topical discussions. Eight faculty members (1 full professor; 7 associate professors) participated in the peer mentoring group for MidCareer Women in the Sciences; eight faculty members (3 full; 1 associate; 4 assistant professors) participated in the group for Women in the Biological Sciences; and six faculty members (3 full and 3 assistant professors) participated in the group for Women in the Physical

Sciences. The participants represent 20 of the 48 women faculty in STEM fields at Brown, or 42%.

The groups were peer-led and informal, loosely based on UC- Berkeley peer mentoring groups as detailed by Ellen Daniell in *Every Other Thursday* (Yale University Press, 2006). Two of the three groups met monthly; the third group met five times over eight months. Topics addressed (either by facilitated discussion or group problem solving with an individual faculty member) were work/life balance; difficult department dynamics; exclusion based on gender; negotiating with your department chair; how and when to say no; tenure and promotions policies and practices; and lab management. 55% of the Mentoring Group participants evaluated the program. Noteworthy are all participants' agreement that they would recommend the groups to others, and that topical discussions were worthwhile (and more valuable than free-floating problem solving or discussion). 90% of the participants who responded in the evaluations reported a decreased sense of isolation. The Mid-Career Mentoring Group will meet throughout summer.

Next fall, we will continue these Mentoring Groups, opening them to new members, and offer new groups for women faculty of color (in all disciplines, due to a lack of "critical mass" of women faculty of color in the sciences) and a mixed gender group for assistant professors. Additionally, ADVANCE will co-sponsor with the Sheridan Center for Teaching and Learning a monthly Career Development Series for women faculty in STEM fields. Our eight session topics are based on the experiences of the women in the mentoring groups, and workshop series for women faculty at other ADVANCE institutions: lab management; gender in the lab/classroom; funding your research, managing your funding; translating your portfolio for your chair; gender bias in promotion processes; utilizing family friendly policies at Brown; defining and managing a "chilly" departmental climate; and saying no/getting to yes.

### **Research Support**

The Research Opportunities Coordinator, Amy Robb, provides specialized assistance for faculty engaged in sponsored funding. The ROC brokers new collaborations among faculty, notifies faculty of opportunities for sponsored project support, and helps faculty negotiate the funding process. The underlying goal of this initiative is to increase external research funding for faculty,

thus promoting their success at Brown as well as within their own scientific discipline. This service is particularly helpful to Assistant Professors who do not yet have tacit knowledge of negotiating the funding process. Mid-career faculty also find it helpful to work with the ROC as they develop new collaborative research initiatives or topics of interest.

*Research Opportunity Announcement Activities: July 2008-June 2009*

The Research Opportunities Coordinator managed a total of twenty-six (26) restricted opportunity award announcements, both federal and private foundation grant opportunities, between July 2008 and June 2009. Federal and private foundation opportunities that require a limit on the number of institutional applications or nominations, referred to here as restricted submissions, are managed by the ROC in cooperation with the Office of the Vice President for Research (OVPR). Private foundation awards call for a letter of nomination so the opportunity announcements are sent to department chairs with a request to nominate appropriate faculty from their departments. Federal agencies call for applications rather than nominations. For this reason, announcements for federal opportunities go out directly to faculty in relevant disciplines. A breakdown of those announcements and the resulting activities is as follows.

The ROC managed three (3) federal single-investigator award opportunities. Two of these opportunities required no internal competition with three (3) men applying internally and being put forward directly to the funding agencies. The final opportunity received four (4) applications, two women and two men. The two men were selected to go forward with their proposals. Between July 2008 and June 2009, women represented 29% of internal candidates for federal single-investigator restricted opportunities managed but represented 0% of candidates selected to apply.

The ROC managed four (4) federal multi-investigator award opportunities. A total of two (2) internal pre-proposals with women as primary investigators and twenty-one (21) internal pre-proposals with men as primary investigators were submitted. Multiple women were listed as co-PIs on all of the federal multi-investigator internal pre-proposals. Eleven (11) men were chosen to go forward with their applications. Both women candidates were unsuccessful and ten (10) of the men were unsuccessful in the internal competition process. Between July 2008 and June

2009, women represented 9% of primary investigators for federal multi-investigator restricted opportunities but represented 0% of candidates selected to apply.

The ROC announced fifteen (15) private foundation restricted-submission opportunities. Of these, six (6) received no internal nominees. Four (4) opportunities did not require an internal competition and a total of five (5) male candidates went forward directly to the foundations. Five (5) private foundation opportunities required an internal competition. Of these, a total of seven (7) women and five (5) men were nominated internally. Three (3) women successfully competed in the internal competitions and were put forward to the foundations. Three (3) men were also successful in the internal competition. Women represented 41% and men represented 59% of candidates to be put forward for an internal competition to a private foundation restricted opportunity. Women represented 27% and men represented 73% of nominees who were put forward to the foundations for these opportunities.

Based on External Advisory Board recommendations, the day-to-day management of restricted submissions has reverted back to the Office of the Vice President for Research, beginning February 2009. This work was deemed a conflict of interest by board members as the Vice President for Research sits on the ADVANCE Steering Committee. The ROC will continue to track gender data for the restricted submissions process.

The Research Opportunities Coordinator continues to work with OVPR and university stakeholders to develop outreach strategies for faculty funding opportunity success. As an example, in the summer of 2009, she will launch a wiki site that includes detailed information on private foundation award programs targeted at new investigators in the physical sciences as well as university offices that work to help faculty prepare successful grant proposals. This project has been undertaken in collaboration with Corporate and Foundation Relations.

#### *Transparency of Departmental Policies*

This year, University policies covering departmental Tenure and Promotion Standards and Criteria and those promoting Work/Family balance (Dual Career hiring protocol, dependent care provisions et al) received heightened visibility as a result of the efforts of the Office of the Dean

of the Faculty, discussions of the ADVANCE Steering Committee and Peer Mentoring Groups, and sessions led by ADVANCE Visiting Scholars. The ADVANCE website now hosts current Tenure and Promotion Standards and Criteria from all 13 STEM departments, as well as links to the University's "Family Friendly" policies and practices.

Members of the ADVANCE Steering Committee called attention to Brown's dual career hiring practices by hosting discussions with our External Advisory Board (who made specific recommendations to senior administrators in their June 2008 Report) and Associate Provost for Institutional Diversity Brenda Allen. ADVANCE Visiting Scholars Virginia Valian and Joan Williams led discussions with faculty members, department chairs, and members of the Dean of the Faculty's office that highlighted "best practices" and research around this issue. In the spring of 2009, the offices of the Provost and Dean of the Faculty issued this statement regarding Dual Career Hires at Brown:

#### Policy on Job Placement Assistance for Dual Career Partners

Brown University recognizes that recruiting and retaining excellent faculty requires that we offer job placement assistance for dual career partners. Brown does not have a specific dual career partners program. But the University does offer resources to address concerns and questions for dual career partners. Staff members in both the offices of the Dean of the Faculty and the Office of Institutional Diversity may be helpful in offering advice and assistance. We encourage department chairs to contact the Dean of the Faculty and the Dean of Biology and Medicine for advice on dual career partner job placement assistance.

The Associate Provost for Institutional Diversity and an Associate Dean of the Faculty also developed the University's website to include a section entitled, "Family Friendly Policies for Faculty" (<http://www.brown.edu/Administration/ffpf/>). The site includes policy statements and resources for work/life programs (statements regarding leaves and dependent care benefits); parenting a new child; child care; tuition aid; dual career partner placement; and faculty housing. ADVANCE Program Coordinator Krista Hedderich capitalized on this initiative, linking the ADVANCE website to that of the Dean of the Faculty and enhancing ADVANCE's resources to include information on local schools and universities, as well as

other institutions' reports and practices for recruiting and retaining faculty members and graduate students who are parents or family caretakers

(<https://wiki.brown.edu/confluence/display/advance/Dependent+Care> and <https://wiki.brown.edu/confluence/display/advance/Dual+Career>).

ADVANCE Managing Director Susan Overton consulted with students and deans in the Office of Postdoctoral and Graduate Studies to assist in the development of their "Graduate Student & Postgraduate Parent Resource Website" (<http://biomed.brown.edu/traineeparents/>).

### **Transforming Academic Departments**

Recognizing this program component as crucial to the success of Brown's ADVANCE grant, we changed the composition of our Steering Committee to increase institutional awareness and impact. This spring, Associate Dean for the Program in Biology (in the School of Medicine and Biological Sciences) Ed Hawrot, Associate Dean of the Faculty Carolyn Dean, and Associate Dean of the College Jim Valles joined Vice President for Research Clyde Briant as senior administrators on the ADVANCE Steering Committee. Dr. Tayhas Palmore, Professor of Engineering, took over the Director's role (from Pamela O'Neil) to provide more designated time and attention to the program.

Brown's original ADVANCE proposal outlines the goal of providing leadership training sessions for Department Chairs that impart "best practices" for promoting women faculty. This year, nine of 13 ADVANCE/STEM department chairs attended at least one training session or ADVANCE event. We provided two training sessions for Department Chairs, utilizing the expertise of Visiting Scholars Virginia Valian and Joan Williams: "Recruitment and Retention Guidelines that Enhance Diversity in Faculty Searches," and "Stealing the Best Talent in an Era of Tight Budgets." Discussion at these sessions focused on best recruitment strategies for attracting women and minorities in to Brown faculty candidate pools, and the important statement dual career hiring policies can make to potential faculty members. The value of the training sessions was in engaging department chairs in thinking through the implications of institutional policies and departmental practices when recruiting women for positions in male-dominated departments/disciplines, and in stimulating examination of Brown's current practices for conducting faculty searches and making offers.

Our challenges lie in getting access to all chairs to engage them in productive discussion of the ever-increasing ADVANCE literature and experience with “what works” when it comes to recruiting, sustaining, and promoting women faculty and faculty of color. It seems unlikely that Brown’s senior academic administrators will mandate any form of training around these issues. However the ADVANCE team is developing approaches that will allow us to access schedules and agendas, and participate in meetings and orientation sessions for department chairs.

We are designing a Department Chair Training Manual for inclusion in the Chairs’ Orientation Packet in the fall of 2009. Topics will include:

*Recruitment Tools*

Supplementing the Hiring Plan (gender issues in faculty recruitment)

Utilizing Brown’s Dual Career Protocol

*Supporting Faculty Members in your Department*

Career Hires at Brown:

Leading a “Research-Productive Department”

Insuring preparation for tenure and promotion of faculty members

Avoiding Bias in Letters of Recommendation

Sustaining a Departmental Mentoring Program

Publicizing Department Members’ Successes

Negotiations

Conflict Mediation

Encouraging Collaborations and Interdisciplinary Research

Utilizing University policies for faculty members’ success

Considerations for women and minority faculty members

We are assessing Department Chair training needs by canvassing current and former Chairs, soliciting feedback from Chairs who have attended ADVANCE sessions, and surveying women faculty. Department Chairs have told us that they appreciate hearing the perspectives of junior

faculty members and learning from other Chairs in training sessions; we will incorporate these elements into our training sessions next year. Women STEM faculty have suggested the following topics for Chairs' Training:

Negotiating

Understanding and utilizing University policies

Conflict resolution

Cultivating women as department leaders

Understanding the experiences of women faculty in male-dominated departments and fields (including parenthood)

Playing the role of Advocate

Equitable delegation

Chairs (and senior male faculty who have volunteered to be Mentors) have told us that they do not need or have time for training or discussion sessions; that it is junior faculty who need an understanding of the ways the academy works. Without a mandate for training, we will need to develop incentives to entice Chairs' and Mentors' engagement with these issues, perhaps on the model of our Leadership Awards for women faculty: for example, Chairs who participate in ADVANCE training sessions and implement a new departmental practice or policy as a result might receive a departmental grant for faculty/professional development.

### **Visiting Scholars Program**

The purpose of the Brown Visiting Scholars program is to provide in-house consultation regarding best practices for recruiting and retaining women in the sciences. This year, our Visiting Scholars were: Dr. Virginia Valian (September 2008), Joan Williams (October 2008), and Dr. Sue Rosser (January 2009).

Dr. Valian's sessions were:

“Effectiveness in Influencing Decisions” -- 75 Attendees: Women Faculty in Biological and Medical Sciences

“A Conversation with Assistant and Associate Professors” -- 13 Attendees: Assistant Professors from Science, Social Science, and Humanities fields

“Recruitment and Retention Guidelines that Enhance Diversity in Faculty Searches” -- 6

Attendees: Department Chairs and Associate Provost

“Making Smart Choices as a Young Woman in the Sciences” -- 30 Attendees: Students from WISE and G-WISE

“Why So Slow?” Public Lecture and Reception -- 90 Attendees including Department Chairs, Faculty, Graduate Students, Undergraduates, Alumnae & Staff

Dr. Williams’ sessions were:

“Unbending Gender: Differences Between Generations of Women Scientists” -- 35

Attendees: Women Faculty in the Biological & Medical Sciences

“Four Patterns of Gender Bias and How to Handle Each” -- 4 Attendees: Women Assistant and Associate Professors in Life & Physical Sciences

“Stealing the Best Talent in an Era of Tight Budgets” -- 6 Attendees: Department Chairs, Members of the Offices of the Dean of the Faculty & the Office of the Provost

“Double Standards, Double Binds, and Double Jeopardy: Solutions on an Individual and Institutional Level” Public Lecture -- 25 Attendees

Dr. Rosser’s sessions were:

Discussion with Undergraduate & Graduate WISE Students about Dr. Rosser’s Career Path -- 12 Attendees

“Institutional Transformation and Women in the Sciences” Public Lecture -- 30 Attendees: Administrators, Faculty, & Students

“Issues Commonly Faced by (Women) Scientists” -- 8 Attendees: Faculty members in physical & biological sciences, including 1 Department Chair

The value of the Visiting Scholars Program lies in the campus-wide visibility it creates for ADVANCE. In sessions with various campus constituents, Visiting Scholars’ research and expertise reinforce the importance of mentoring for all faculty, networking for women faculty, and demographic data that reveals the equity work that remains to be done in the academy. Discussions among faculty members, department chairs, and the Visiting Scholars prompted examination of Brown’s Dual Career Hiring protocol and the fine points of our “family friendly”

policies, and greater awareness of recruitment and retention practices that impact the satisfaction of women faculty and faculty of color.

### *External Evaluation*

In March 2008, Dr. Janet Mancini Billson of Group Dimensions International (GDI) contracted with ADVANCE as the Program's External Evaluator. This year, Dr. Billson conducted one on one interviews, faculty focus groups, and a faculty survey to measure awareness of ADVANCE programs and goals, and faculty members' perceptions of gender equity issues at Brown. She has issued two reports to us.

Dr. Billson's July 2008 report found that:

As the program finished its second year and moved into a phase of new leadership and increased activity, respondents—faculty award winners, faculty in general, department chairs, administrators, and program leaders—characterized it as important, necessary, and moving closer to achieving its primary goal...[R]espondents of all types also cautioned that the overarching goal of institutional transformation would be difficult to realize without even more commitment and support from the most senior administrators. Respondents also called attention to the unique difficulties faced by women in the School of Medicine, where departments have historically had a lower proportion of women faculty. Finally, they saw ADVANCE programmatic efforts as critical to creating an environment of collegiality and equity, not only in relation to gender but also in relation to other types of minority status.

Dr. Billson's May 2009 report of faculty survey data concluded:

While the survey did not provide data to reveal obvious differences in the way that men and women are promoted within departments and at Brown University as a whole, the survey did reveal the perception by women that they are treated differently than men and that they do not enjoy the same leadership and advancement opportunities as their male counterparts.

### *Networking Reception for Women Faculty of Color*

This spring, the ADVANCE Program and the Office of Minority Medical Affairs co-sponsored a Networking Reception for women faculty of color in Arts and Sciences, and Medicine and Biological Sciences. Attendees included three FAS faculty members, three BioMed faculty members, 2 residents, 10 medical students, 1 graduate student, and President Ruth Simmons. Taken at the reception, a written survey revealed the following needs/experiences for the women faculty of color who attended the reception: a sense of isolation, and that race “matters” more than gender in their day-to-day lives at Brown. Awareness of the ADVANCE program was polarized: attendees either knew a lot about ADVANCE, or nothing. The survey responders felt that departmental dynamics, to a greater degree than institutional dynamics, hindered progress in their academic careers.

Because Brown’s numbers of women faculty of color are so small (less than five people in each of the racial categories of Asian, Black and Hispanic, as reported to the office of the Dean of the Faculty), the ADVANCE Program will work with other departments and offices to help create a sense of “critical mass” for women of color. We will offer lunches for these populations (across divisions), as well as a peer mentoring group for women of color in the 2009-’10 year.

#### *External Advisory Board*

The External Advisory Board met in late May, 2009. Members of the Board who attended are:

Elizabeth Bradley, Professor at the University of Colorado at Boulder in the department of Computer Science and the department of Electrical and Computer Engineering.

Molly Carnes, Professor in the Departments of Medicine, Psychiatry, and Industrial & Systems Engineering at the University of Wisconsin at Madison and a Co-PI of their ADVANCE Grant.

Alice Hogan, a consultant and former ADVANCE Program Director at the National Science Foundation.

Britt Holmen, an Associate Professor of Engineering at the University of Vermont.

Maria Zuber, E.A. Griswold Professor of Geophysics and Head of the Geophysics Department at MIT, and a member of the National Academy of Science Committee that produced the “Beyond Bias and Barriers” report.

The day's agenda included an introduction by Brown Provost David Kertzner; a summary of program initiatives and progress by ADVANCE Working Group members Krista Hedderich, Susan Overton, Tayhas Palmore, and Amy Robb; lunch with ADVANCE Steering Committee members; and an afternoon working session for the Board. We designed this meeting to prepare us for our NSF Site Visit, and look to the Board for their feedback on our accomplishments and challenges thus far, and their recommendations on how to best inform and engage the Site Visit team.

#### **IV. Year Four Activities**

Our top priority for the upcoming year is Department Chair Training. In addition to developing a Training Manual for distribution during the Dean of the Faculty's Chairs' Orientation in September (see Section 3, "Transforming Academic Departments" above), and inviting Chairs to use resources on the ADVANCE website, we will continue to work with the offices of the Provost, Dean of the Faculty, and Associate Dean for the Program in Biology to create worthwhile sessions that address findings from our assessments of Chairs and women faculty. Chairs have told us that they appreciate opportunities to learn from each other and from the experiences of successful junior faculty members. They are interested in sessions on dual career hiring, recruiting women faculty, and negotiation skills.

Some women faculty and current department chairs have expressed a need for leadership training for faculty members who are interested in, or likely to be tapped for department chair roles. We are planning to offer workshops, readings, materials, resources for "pre-chair training," targeting senior women STEM faculty. This will address our goal of increasing the number of women in leadership positions at Brown: currently two of the 13 STEM department chairs are women. We may offer leadership awards (to replace the Administrator Shadowing/Advancing Leaders Awards) that will support women faculty as department leaders, for attendance at national conferences such as the University of Washington's Leadership Excellence for Academic Diversity. (We offered all current Brown STEM chairs the opportunity – via full funding – to attend the final LEAD Conference this June; there were no takers.)

We will approach the Visiting Scholars program differently next year. To promote the work of Brown women scientists, 8 to 10 women faculty (at any rank) will be given the opportunity to invite a mentor or colleague (within or outside of Brown) to have a dialogue with them, either about their research or about the status of women in STEM fields. This will be the Brown Women Scientists' Speaker Series. The September kickoff event will present Dr. Anne Fausto-Sterling (Professor of Biology and Gender Studies in the Department of Molecular and Cell Biology and Biochemistry, and Chair of the Faculty Committee on Science & Technology Studies at Brown) and Dr. Evelyn Hammonds (Dean of Harvard College, and Professor of the History of Science and of African and African American Studies at Harvard University) in dialogue about issues of gender and race in the academic sciences.

We will continue to support three ongoing peer mentoring groups next year (with new members invited), and will add a group for women faculty of color (across divisions) and a mixed-gender groups for Assistant Professors. In addition, ADVANCE will co-sponsor a Career Development Series for Women Faculty with the Sheridan Center for Teaching and Learning. This will be a monthly series; topics will be:

- Lab Management
- Gender in the lab/classroom
- Funding Your Research, Managing Your Funding
- Translating your portfolio for your chair
- Gender Bias in Promotion Processes
- Utilizing Family Friendly Policies at Brown
- Defining and Managing a "Chilly" Departmental Climate
- Saying No/Getting to Yes

These topics were identified based on assessments of women in the peer mentoring groups and faculty members who attended a networking reception for women faculty of color.

The one-on-one, cross departmental Faculty Mentoring Program will continue next year. We will call for Mentors late in the summer, and attempt to match all new faculty with a Mentor by the end of September or early October. We will expand the program to include any tenure-track faculty member who wants a Mentor (provided we are able to solicit enough tenured faculty

members who are willing to be Mentors). We will provide one Mentor and Mentee training session each semester. Stacy Blake Beard, Associate Professor of Management at the Simmons College School of Management. Her research focuses on the challenges and opportunities of mentoring relationships; how mentoring relationships may be changing as a result of increasing workforce diversity; and the issues women face as they develop mentoring relationships (see <http://www.stacyblakebeard.net/index-1.html>).

We will continue to encourage applications for ADVANCE Scientific Leadership and Leadership Support Awards. We will canvas women STEM faculty members to find out how many are in leadership positions in professional organizations or have taken on journal editorship. We will make them aware of the purpose of the awards: to build collegial networks and to promote their research through involvement with professional organizations and scholarly publications.