

Annual Report for Period:08/2007 - 07/2008

Submitted on: 09/01/2008

Principal Investigator: O'Neil, Pamela .

Award ID: 0548311

Organization: Brown University

Submitted By:

O'Neil, Pamela - Principal Investigator

Title:

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

Project Participants

Senior Personnel

Name: O'Neil, Pamela

Worked for more than 160 Hours: Yes

Contribution to Project:

Pamela O'Neil, Associate Provost at Brown University, is the Principle Investigator of the ADVANCE Program at Brown. She oversees program initiative implementation and supervises the Managing Director and Research Opportunities Coordinator. She provides vital institutional connections with university administrators as well as knowledge of university structure and climate. Dr. O'Neil receives 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 participated in both rounds of Career Development Awards Review Committee and serves as the faculty liaison to our external evaluator, Janet Billson. 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. Annie presented the Steering Committee report to the External Advisory Committee. Dr. Schmitt receives no financial support from the ADVANCE grant.

Name: Palmore, G. Tayhas

Worked for more than 160 Hours: No

Contribution to Project:

Tayhas Palmore is a Professor of Engineering at Brown University and serves as a Co-PI for ADVANCE. Tayhas attended the 7th Annual ADVANCE PI Meeting in Alexandria, VA. Dr. Palmore receives no financial support from the ADVANCE grant.

Name: Chang, Mariko

Worked for more than 160 Hours: Yes

Contribution to Project:

Mariko Chang served as Managing Director until her departure from Brown University in November 2007. She was responsible for the implementation of all proposed initiatives, compiling institutional data and conducting data analysis, writing interim and annual reports to NSF, as well as collaborating with Brown faculty and administrators to further the goals of the Program. 100% of her time was allocated to the Brown ADVANCE Program. Susan Overton joined the Brown ADVANCE team as Managing Director in June 2008; 100% of her time will be allocated to the ADVANCE program.

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. Karen participated in the latest round of Career Development Awards Review Committee and presented the Steering Committee report to the External Advisory Committee. 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 hosted the first ADVANCE department chairs workshop entitled, Mentoring Faculty on Proposal Writing. Dr. Briant receives no financial support from the ADVANCE grant.

Name: Overton, Susan

Worked for more than 160 Hours: Yes

Contribution to Project:

Susan is the new Managing Director of Advance, replacing Mariko Chang. Susan began work on June 8, 2008.

Name: Cyr, Michelle

Worked for more than 160 Hours: Yes

Contribution to Project:

Michele Cyr is the Director of Internal Medicine at Brown University. Shelley participated in the latest round of Career Development Awards Review Committee. Dr. Cyr receives no financial support from the ADVANCE grant.

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

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 developed and maintains the ADVANCE website, helped prepare powerpoint presentations for outreach events and the poster for the PI meeting, 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 became the ADVANCE program's Research Opportunities Coordinator in September 2007. 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 these awards; and to facilitate application processes. Amy also manages the ADVANCE Career Development 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 is the new Executive Assistant to Pam O'Neil in the Provost's Office. Lynda coordinates large scale events such as the external evaluator interviews and focus groups, prepares meeting materials, contacts vendors for office supplies and catering. Lynda also manages the financial records of the grant and processes receipts. Ms. Murphy receives no financial support from the ADVANCE grant.

Other Participant

Name: Wildman, Ana Karina

Worked for more than 160 Hours: No

Contribution to Project:

Ana Karina Wildman is the staff assistant to Pam O'Neil. Her contributions to the grant include the following tasks: scheduling Steering Committee Meetings and other meetings among key personnel, photocopying of materials, and phone calls and emails pertaining to general office matters related to the ADVANCE program. She receives no financial support from the ADVANCE grant.

Research Experience for Undergraduates

Organizational Partners

Other Collaborators or Contacts

Activities and Findings

Research and Education Activities: (See PDF version submitted by PI at the end of the report)

see attached file

Findings: (See PDF version submitted by PI at the end of the report)

see attached file

Training and Development:

see attached file

Outreach Activities:

see attached file

Journal Publications

Books or Other One-time Publications

Web/Internet Site

URL(s):

www.brown.edu/Administration/Provost/Advance/

Description:

Other Specific Products

Contributions

Contributions within Discipline:

see attached file

Contributions to Other Disciplines:

Contributions to Human Resource Development:

see attached file

Contributions to Resources for Research and Education:

see attached file

Contributions Beyond Science and Engineering:

Special Requirements

Special reporting requirements:

Indicator data provided in attached file.

Change in Objectives or Scope: None

Animal, Human Subjects, Biohazards: None

Categories for which nothing is reported:

Organizational Partners

Any Journal

Any Book

Any Product

Contributions: To Any Other Disciplines

Contributions: To Any Beyond Science and Engineering

Appendix 1. Year 2 Financial Report and Year 3 Funding Request

Year 2 Financial Report

Table A1 provides the financial report for the second year of the grant. It lists the approved amounts in each category, the actual expenses incurred from August 1, 2007 through July 31, 2008, and any residual amounts remaining in each category. We did not spend as much as anticipated because we were without a managing director of the program from December 2007 through May 2008, and because the Participant Support visiting scholars were unable to schedule visits to Brown until the fall of 2008. We have arranged for Virginia Valian and Joan Williams to come to campus this fall and expect to spend the residual funds this year. Our new managing director joined the program in June, 2008, and we recently hired a program coordinator. The program now has three full-time staff members. Having a third full-time staff member will help us to gain some lost time in program implementation.

An explanation of funds spent for each category is provided below.

B2. Other Professional Personnel:

Managing Director Mariko Chang left her position in November, 2007. After a lengthy search we hired Susan Overton in June, 2007. Coordinator of Research Opportunities Amy Robb began her position in September, 2007. With the addition of Program Coordinator Teresa McCrann in August, 2008, we now have three full-time staff positions and will need the surplus funds to pay for the additional staff member.

D. Equipment

At this point our durable equipment needs are minimal.

E. Travel

In year 2 we spent more than expected on travel with 4 members of the program attending the PI meeting, previous managing director Mariko Chang attending a conference, and Research Opportunities Coordinator Amy Robb attending a conference.

F. Participant Support

Last year we had a surplus in this category because it took longer than expected to schedule visits from prominent scholars. We will be hosting two visiting scholars this fall, Virginia Valian and Joan Williams. We plan to bring in

additional visiting scholars to help plan and implement the initiatives of the program, in particular the Mentoring Program and Department Chair Workshops.

G.1 Materials and Supplies

General office supplies were supplied by the Office of the Provost at the beginning of the award period, but other supplies are necessary on a continuing basis for implementing the initiatives of the program.

G.3 Consultant Services

We have hired Janet Billson as our external evaluator and \$14,000 was spent in Year 2 as part of the program evaluation. We are committed to an additional expenditure of \$66,000 over a 2 year period. Funds from this category are also used for expenses related to the External Advisory Board. The Board met in May, 2008 and will meet again in March, 2009.

G.6 Other

Funds in this category were spent on the Career Development Awards in Year 2. We also intend to fund other Leadership Initiatives in Year 3 of the program.

Residual Funds

\$190,507 remains unexpended in Year 2. Most of the residual funds are a result of the following factors (1) the managing director left the program in November, 2007 and a new director was not hired until June, 2008; (2) many of the Visiting Scholars were not able to schedule visits to Brown until this fall; (3) programs other than the Career Development Awards were not able to be fully implemented because of the lack of staff. We expect to fully implement these initiatives in Year 3. We now have a managing director and have added a Program Coordinator to aid in the implementation of these programs. We request that our remaining unexpended funds be carried over to Year 3 to be used for the same purposes as originally planned in Year 1.

Year 3 Funding Request

Our funding request for Year 3 is identical to that which was submitted in our proposal, except that in several categories we request that our remaining unexpended funds from Year 2 be carried over to Year 3. These unexpended funds will be used for the same purposes as originally planned and to fund an additional full-time staff member to support the activities of the ADVANCE Program. Table A2 provides the financial report for the third year of the grant. An explanation of each category is provided below:

B2. Other Professional Personnel:

We request \$198,277 to cover the combined salaries and fringe benefits of three project personnel: Susan Overton (Managing Director), Amy Robb (Coordinator of Research Opportunities) and Teresa McRann (Program Coordinator).

E. Travel

We request \$4,000 in Year 3 to allow the Managing Director and PI to travel to the annual PI meeting in Washington DC and to allow for the Managing Director to attend at least one other conference.

F. Participant Support

We were unable to bring in two Visiting Scholars in Year 2 who will be coming to campus in Year 3 --- Virginia Valian and Joan Williams. Therefore we will need the unexpended funds from Year 2 to pay for these visits. Also, we intend to bring in experts in Year 3 for the mentoring program and department chair workshops.

G.1 Materials and Supplies

We are requesting \$4,000 for materials and supplies as necessary for the implementation of the initiatives and program goals.

G.2 Publication costs / Documentation/ Dissemination

Our budget for Year 3 includes \$2,000 for dissemination of information about the program and the cost of producing and mailing a newsletter, etc.

G.3 Consultant Services

We have contracted with Janet Billson to evaluate the program. This will cost \$80,000 over a two year period. We have paid her \$14,000 to date, leaving a \$66,000 commitment to be paid during Year 3 and Year 4.

G.6 Other

In Year 2 we funded 9 Career Development Awards for a total of \$124,923. In Year 3 we would like to carry over \$25,077 to increase the budget to \$175,077 to fund the Career Development Awards and other Leadership Initiatives (Leadership Support Fund, Administrator Shadowing Program, and Awards to

Develop Scientific Leadership.) With the additional unexpended funds we will be able to increase the number of awards made in these categories.

Table A1.- Year 2 Budget Analysis (August 1, 2007-July 31, 2008)

	Year 2 Approved	Year 2 Spent	Difference- Approved/Spent
A. Senior Personnel			
B. Other Personnel			
Managing Director		\$46,499	
Coordinator of Research		\$54,422	
Opportunities			
Total Salaries	\$145,950	\$100,921	\$45,029
C. Fringe Benefits	\$48,164	\$33,902	\$14,262
TOTAL SALARIES & FRINGE	\$194,114	\$134,823	\$59,291
D. Equipment	\$2,200	\$649	\$1,551
E. Travel (Domestic)	\$4,000	\$9,994	(\$5,994)
F. Participant Support	\$34,000	\$3,021	\$30,979
G. Other Direct Costs			
G.1 Materials and Supplies	\$4,000	\$18,077	(\$14,077)
G.3 Consultant Services	\$40,000	\$16,500	\$23,500
G.6 Other	\$150,000	\$124,923	\$25,077
H. Total Direct Costs	\$428,314	\$307,987	\$260,087
I. Indirect Costs (F & A)	\$231,347	161,167	\$70,180
J. Total Direct + Indirect	\$659,661	\$469,154	\$190,507

Table A2. Proposed Budget for Year 3 (August 1, 2008-July 31, 2009)

	Year 3	Unobligated Funds From Year 2*	Year 3 Budget Request
A. Senior Personnel			
B. Other Personnel			
Managing Director			
Coordinator of Research Program			
Coordinator			
Total Salaries	\$153,248	\$45,029	\$198,277
C. Fringe Benefits	\$50,572	\$14,262	\$64,834
TOTAL SALARIES & FRINGE	\$203,820		\$263,111
D. Equipment	\$0		\$0
E. Travel (Domestic)	\$4,000		\$4,000
F. Participant Support	\$0	\$30,979	\$30,979
G. Other Direct Costs			
G.1 Materials and Supplies	\$4,000		\$4,000
G.2 Publication Costs	\$2,000		\$2,000
G.3 Consultant Services	\$40,000	\$23,500	\$63,500
G.6 Other	\$150,000	\$25,077	\$175,077
H. Total Direct Costs	\$403,820		\$542,667
I. Indirect Costs (F & A)	\$238,253		\$301,253
J. Total Direct + Indirect	\$642,073		\$843,920

***We request to carry the unexpended funds from Year 2 to Year 3.**

Administrative Partners

Our Administrative Partners include:

- **Ruth Simmons, University President**
- **David Kertzer, Provost**
- **Rajiv Vohra, Dean of Faculty**
- **Brenda Allen, Associate Provost and Director of Diversity Initiatives**

Web/Internet Site

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

Research Opportunities Coordinator Amy Robb redesigned the Brown ADVANCE website to provide a more cohesive explanation of program initiatives. Website content was incorporated into PowerPoint presentations and Word documents as a way to brand the program.

The site is organized around the program's three focus areas: Faculty Development, Leadership Initiatives, and Institutional Transformation. Requests for Proposals (RFPs) for ADVANCE grants are available here, as well as Award Recipients' project descriptions. The website advertises upcoming lectures and events, relevant campus and inter/national news items, funding opportunities, University policies and procedures that support women faculty and faculty members who are parents, campus resources, and national reports and data.

Participation in Brown ADVANCE programs

Between August 2007 and July 2008, 120 faculty, students, and staff attended events.

Ten (10) of forty-three (43) department chairs in biology and medicine, life sciences and physical sciences attended the first ADVANCE Chairs Workshop entitled, "Mentoring Faculty on Proposal Writing."

Twenty-one (21) women scientists in the physical sciences, life sciences, and biomedical sciences attended a wine reception.

Fifteen (15) women graduate students in the sciences attended an ADVANCE sponsored lecture by Dr. Semahat Demir, the Program Director for Biomedical Engineering at the NSF, on peer-mentoring women in biomedical engineering.

Forty-five (45) staff members from across campus attended an ADVANCE sponsored lecture by Janet Bickel, career coach and consultant, on Tools for Improving Our Communications and Meetings.

Seventeen (17) staff members and graduate students attended a training session for SPIN, our subscription based database for finding research opportunities.

Nine (9) faculty members received ADVANCE Career Development Awards. See Section III, pages 7-8.

Attending the ADVANCE PI Meeting in Alexandria, VA were PI Pamela O'Neil, Co-PI Tayhas Palmore, and Research Opportunities Coordinator Amy Robb.

II. Program Overview

Initiatives

The overarching goal for our ADVANCE Institutional Transformation (IT) 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.

ADVANCE at Brown has three areas of focus: Faculty Development, Leadership Initiatives, and Institutional Transformation. Within these focus areas, our program has six major goals:

- 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

Faculty Development

ADVANCE supports new initiatives for formal Faculty Development Programs to ensure that all faculty—women and men—have access to the types of resources that cultivate opportunities for success at the highest levels in academic and academic leadership. Our faculty development initiatives seek to provide equitable and transparent access to the types of resources that support career success at Brown University and the wider scientific community.

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.

Mentoring Programs developed over the last year will be implemented in September 2008, and will provide formal opportunities for faculty members to speak candidly with each other about their experiences, and to learn to negotiate the academic environment at Brown. Our mentoring programs will include traditional, matched pair relationships between junior and senior faculty members (who are outside-of-department-but-within-field), and single- and mixed-gender peer mentoring groups targeting issues of concern to women faculty and faculty of color. Mentors will assist junior faculty with professional development by providing information about university policies, culture, and resources. Peer mentoring groups will provide support and problem solving with a goal of decreasing isolation for Brown faculty members at all stages of their careers.

Leadership Initiatives

The Leadership Program encourages women faculty who are interested in furthering their careers by becoming academic administrators or assuming a leadership role within inter/national scientific communities. The leadership initiatives provide avenues for the development and promotion of women faculty.

Career Development Awards help faculty access senior colleagues at other institutions who can serve as collaborators, role models, and sponsors. These awards are designed to be particularly useful for assistant professors who are beginning to build their research program, or for mid-career faculty to move in a more collaborative direction or to make contacts in a new area of research.

The Administrator Shadowing Program, to be implemented this fall, will give faculty who might be interested in pursuing an administrative career an opportunity to explore what it is like to be in a high level administrative position. Paired Brown administrators and faculty members will be asked to identify an institutional-level project which the faculty member could coordinate. The program provides financial support for teaching release time for the faculty member.

The Scientific Leadership Development Awards were developed to facilitate women faculty members' opportunities to assume positions of leadership within scientific disciplines. The awards will 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.

The Leadership Support Fund provides women scientists with the means to attend administrator training or leadership programs provided by other institutions (such as HERS et al). This program seeks to encourage women scientists to assume positions of academic leadership and provides access to networks of other leaders in academic and scientific fields. The faculty member may choose a program that best suits her career goals and schedule.

Institutional Transformation

ADVANCE seeks to transform the climate at Brown University by working with institutional partners to develop approaches that maximize opportunities for success for all Brown Faculty members.

We are cultivating an innovative program for department chair leadership development that capitalizes on “best practices” for retaining women faculty and faculty of color by paying attention to departmental climates, recruitment of new Brown faculty, peer and cross-department mentoring, individual and collaborative faculty successes, and prevention of mid-career burnout. The goal of the Department Chairs Workshops is to provide chairs with information and skills that will have a positive effect on faculty development; facilitate communication between chairs to share experiences and approaches; and to promote discussion about issues of diversity and gender to improve the recruitment, retention, and advancement of women faculty. We are collaborating with the Dean and Associate Dean of the Faculty, and the Associate Provost/Director of Institutional Diversity to create, deliver, and evaluate mentoring programs and faculty leadership development opportunities.

III. Year Two Activities

Year Two was marked by successful implementation of program initiatives during a period of staffing challenges. Our first Visiting Scholar, Dr. Lisa Frehill, came to Brown in August 2007 to help us with our Mentoring Program and Department Chairs Workshops. Amy Robb joined the ADVANCE team as Research Opportunities Coordinator (ROC) in September 2007. Managing Director Mariko Chang left her position in November 2007; incoming Managing Director Susan Overton began work in June 2008. We have also hired a new program coordinator to join the staff August 18, 2008. Activities that were already in the works moved forward with great success through the efforts of Program Director Pam O'Neil, ROC Amy Robb, and faculty and administrative partners. These programs included the second round of the Career Development Awards, our first Department Chairs Workshop, our first Visiting Scholar, initial work with our external evaluator, and a presentation on faculty mentorship. We convened our External Advisory Board in Providence in May 2008.

Inaugural Visiting Scholar

In August 2007, ADVANCE at Brown hosted **Dr. Lisa Frehill** as our first Visiting Scholar. Her visit included detailed planning sessions with Pam O'Neil and Mariko Chang; a presentation on mentoring program design for our administrative partners and Steering Committee members; and a working session to strategize about workshop offerings for department chairs.

Attendees at the Mentoring session included:

- Clyde Briant, Vice President for Research
- Mariko Chang, Managing Director of ADVANCE

- Michele Cyr, Director of the Division of General Internal Medicine
- Carolyn Dean, Associate Dean of the Faculty
- Mary Fennell; Professor and Chair of Sociology
- Karen Fischer, Professor of Geological Sciences
- Mary Hanifin, Associate Director of Development
- Pam O'Neil, Associate Provost
- Tayhas Palmore, Professor of Engineering
- Kathleen Shannon, Director of Research Initiatives
- Rajiv Vohra, Dean of the Faculty
- Anne Windham, Proposal Coordinator

Dr. Frehill's work with these participants centered around the Brown COACHE survey findings that "mentoring was one of the top five 'effectiveness gap' items for both men and women [faculty]." The discussion was productive with broad support for implementing a formal program at Brown University that includes

- information gathering from junior and senior faculty and department chairs;
- offering individual and group mentoring opportunities;
- evaluation of pairings and other mentoring activities;
- collaboration among key players/offices;
- provision of mentors for all new faculty members as an effort at "normalizing" mentoring;
- attention to the mentoring needs of mid-career faculty members at the Associate Professor level.

Attendees at Dr. Frehill's working session to design a faculty development workshop on "Grants(wo)manship" included:

- Clyde Briant, Vice President for Research
- Mariko Chang, Managing Director of ADVANCE
- Carolyn Dean, Associate Dean of the Faculty
- Pam O'Neil, Associate Provost
- Amy Robb, Research Opportunities Coordinator for ADVANCE
- Kathleen Shannon, Director of Research Initiatives
- Rajiv Vohra, Dean of the Faculty
- Anne Windham, Proposal Coordinator

This very successful workshop, "Mentoring Faculty on Proposal Writing," was presented in April 2008 by members of the ADVANCE office and the Office of the Vice President for Research, and two faculty members. See description below, on pages 8-9.

Dr. Frehill was instrumental in helping us organize working groups to identify department chairs who have been successful in promoting Brown faculty members for campus and intern/national awards and recognition, and to further develop mentoring programs that are tied to departmental success.

Dr. Frehill's expertise in working with department chairs included a suggestion that we "engage chairs in a more data-driven approach, ...[perhaps] by highlighting the gap between chairs' perceptions [of departmental climate] and those of faculty members." She emphasized the need for ongoing relationship building between ADVANCE staff members and individual department chairs.

Finally, Dr. Frehill suggested that the Brown ADVANCE program play a role in helping to design an institutional "research infrastructure" that "...encourages broad-based collaboration across disciplines and units without erecting boundaries to full participation by women and faculty of color in the research enterprise."

Research Opportunities Coordination and Activities

Research Opportunities Coordinator (ROC) Amy Robb works in close collaboration with the Office of the Vice President for Research and Corporate and Foundation Relations to identify faculty funding opportunities through government agencies, including NIH and the NSF, as well as private foundations. Research opportunities coordination is a need that was identified by many Brown constituencies. A goal of this position is to be sure that *all* faculty are aware of and encouraged to take advantage of opportunities that could be beneficial to their careers. Amy handles the management of restricted submissions, maintains a Funding Opportunities database, and provides training for the University's Sponsored Programs Information Network (SPIN).

With the support of the ROC, Brown University was awarded its first Doris Duke Foundation Clinical Scientist Development Award. The award will provide \$125,000 per year in direct costs and \$10,000 per year in indirect costs for three years. The University also received its first Burroughs Welcome Fund Investigator in the Pathogenesis of Infectious Diseases Award. The award is for a total of \$500,000 over a period of five years.

Between September 2007 and June 2008, the ADVANCE Research Opportunities Coordinator notified faculty of a total of fifty-eight (58) federal and private foundation award announcements. Private foundation awards call for a letter of nomination so the announcements are sent to department chairs in relevant disciplines with a request to distribute the notices to interested faculty members. Federal agencies call for applications rather than nominations; thus, announcements for federal opportunities go out directly to faculty members in relevant disciplines. 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). A breakdown of those announcements and processes follows.

The ROC coordinated eight (8) announcements for federal restricted-submission opportunities. Four (4) of these programs received no applications and one (1) was not tracked by ROC. Three (3) programs received applications in response to opportunity announcements. Two (2) of these did not require an internal competition. In both cases, only male faculty applied. One (1) research opportunity required an internal competition. For this program, we received seven (7)

applications for four (4) allowable slots. One of these applications was from a woman PI. The woman scientist's application was selected to go forward along with three other applications, one of which had at least one woman listed as co-PI.

The ROC sent out eighteen (18) private foundation restricted-submission opportunities. Five of these announcements received no nominations in response. Thirteen (13) announcements resulted in nominations and of these, three (3) required holding internal competitions. Of the thirteen programs where an internal competition was not held, four (4) women were nominated and nine (9) men were nominated by department chairs. The gender distribution of the three internal competitions is as follows:

- One internal competition was held between two men. One male faculty member went forward for foundation consideration.
- One internal competition was held between four men. Three male faculty members went forward for foundation consideration.

One internal competition was held between one woman and two men. The two men were put forward for foundation consideration. Ten (10) unrestricted federal research opportunities were sent out to faculty.

Eighteen (18) unrestricted private foundation research opportunities were announced.

Women and men researchers are equally likely to contact the ROC directly for help with funding opportunities. Eight (8) information requests were received from women and seven (7) requests were received from men.

One research funding resources workshop was held for faculty, graduate students, and staff in Spring 2008. Fifteen (15) participants attended with approximately ten (10) being women. Databases including SPIN and Grants.gov were demonstrated. This kind of training will now be provided exclusively through the ADVANCE Program and the Research Opportunities Coordinator.

Career Development Awards

The second round of the Career Development Awards was publicized in October 2007; award recipients were announced in January 2008. Outreach for the program included a range of activities: e-mail and campus listservs were utilized; department chairs and women scientists were contacted directly; and an information session invited faculty to drop by the ADVANCE offices to discuss their proposals and see examples of successful proposals.

We received twenty (20) proposals this year. Nine (9) recipients were chosen by an ad hoc committee of administrators and faculty. Our initial round for the CDAs garnered nine proposals and awarded six grants.

Of particular note are Career Development Award recipients Diane Hoffman-Kim and Ben Raphael. Dr. Hoffman-Kim proposed working with a career coach to enhance her leadership abilities to promote the effectiveness of other women scientists and engineers. Dr. Raphael

identified the need to provide training to his female computer science graduate students in a field where women are notably underrepresented.

Descriptions of the 2008 Career Development Award projects are provided here:

Marcy Brink-Danan, Assistant Professor of Anthropology & Judaic Studies, \$14,650

Professor Brink-Danan organized a day-long conference to bring together outstanding social scientists who study Jewish life through ethnographic methods. The conference will have three components including a presentation of new research, a discussion of disciplinary theory, and a major public presentation.

Erika Edwards, Assistant Professor of Ecology & Evolution Biology, \$11,010

Professor Edwards' work combines molecular phylogenetics with anatomical and eco-physiological field studies. She will utilize the award to initiate collaborations with two institutions in South Africa and Madagascar for a research project that will focus on succulent lineages of plants that are endemic to arid regions of South Africa. Erika will also travel to Brazil to speak at the Latin American Botanical Congress and the International Organization for Succulent Plant Study.

Diane Hoffman-Kim, Associate Professor of Molecular Pharmacology, Physiology, & Biotechnology, \$14,995

Toward the goal of being a multi-dimensional leader in academic biomedical engineering, Professor Hoffman-Kim proposes three interrelated aims: (1) increase the global visibility of her research program on nerve repair technology and tissue engineering; (2) expand her biomedical engineering teaching to the cutting edge of constructivist pedagogy; and (3) accelerate her leadership development to enhance the effectiveness of women scientists and engineers.

Kate Lapane, Associate Professor of Community Health, \$15,000

Dr. Lapane will host a multidisciplinary summit on off-label antipsychotic use. The aims of the summit include: (1) strengthening ongoing collaboration with investigators; (2) bringing together a network of concerned persons; and (3) fostering a mentoring and networking pipeline.

Carmen Marsit, Assistant Professor of Pathology & Laboratory Medicine, \$13,000

Professor Marsit will hold a day-long retreat focused on epigenetics beyond cancer. The goals of the event are to bring together members of the BUCKDM (Brown, University of California, Kaiser, Dartmouth, Minnesota) consortium and to expand this group of investigators to include individuals at Brown and its affiliated institutions.

Meenakshi Narain, Associate Professor of Physics, \$15,000

Professor Narain will start a new research and development program for future particle physics experiments, specifically for the development of advanced solid state tracking detectors to precisely measure trajectory of charged particles for the proposed super LHC (SLHC) and the International Linear Collider (ILC) projects.

Ben Raphael, Assistant Professor of Computer Science, \$11,453

Professor Raphael proposed a series of meetings with colleagues with the aims of: (1) developing mentoring and collaborative relationships with senior scientists; (2) training two female graduate students in a discipline underrepresented by women; and (3) continuing research collaborations.

Kristi Wharton, Associate Professor of Molecular Biology, Cell Biology, & Biochemistry, \$14,315

Professor Wharton will continue two multidisciplinary collaborations with a focus on obtaining preliminary data necessary to winning large external grants. The research areas include the visualization of signaling molecule movement in vivo in real time and elucidating the molecular underpinnings of a mechanism controlling cell signaling that appears to be at the crux of a crippling bone disease, Fibrodysplasia Ossificans Progressiva. Additionally, Kristi will attend the Keystone Symposia Conference and the EMBO Conference.

Jessica Whiteside, Assistant Professor of Geological Sciences, \$14,500

Professor Whiteside will bring together researchers whose work on lakes and related systems are at the forefront of current work in order to forge a scientific network of colleagues whose synergisms have the potential to catalyze a major leap forward of our understanding of ancient lake systems.

Future calls for Career Development Award proposals will go out in early in the fall semester with announcements of the recipients being made in January. This is a similar schedule to other University-sponsored award programs.

Department Chairs Workshop

An important aspect of the ADVANCE Program at Brown is the focus on innovative leadership development for department chairs.

Our first department chairs workshop was held in April 2008. “**Mentoring Faculty on Proposal Writing**” brought together colleagues from the Office of the Vice President for Research, Corporate & Foundation Relations, and Government Relations & Community Affairs. A working group including the following individuals developed the program for the workshop:

- Clyde Briant, Vice President for Research
- Ed Hawrot (Associate Dean for Research in the Division of Biology and Medicine)
- Regina White (Associate Vice President for Research Administration)
- Mary Hanifin, Associate Director of Development
- Kathleen Shannon, Director of Research Initiatives
- Amy Robb, Research Opportunities Coordinator
- Anne Windham, Proposal Coordinator

The workshop included information on grant sources and University resources for grant writing and submission and presentations on the national funding environment. Two faculty members – ADVANCE Career Development Awardee Associate Professor Diane Hoffman-Kim and Professor Ed Hawrot -- provided first-hand insight into the mentoring needs of faculty members

who are applying for funding as young and mid-career investigators. The messages of the faculty speakers were well-received and thought-provoking. Department chairs heard from a peer about the unique and essential role that chairs play in faculty success: Dr. Hawrot discussed a variety of mechanisms that he used, such as mock study sessions, to help faculty navigate through the funding process. These remarks were followed by a case study from Dr. Hoffman-Kim, who had been mentored by her chair. She spoke of applying for more than thirty-six awards as an assistant professor, and the strong foundation for her research and career advancement that was made possible by collaborative work.

Ten (10) out of forty-three (43) department chairs from the physical sciences, life science, and biomedical fields attended this workshop. Chairs suggested that the next workshop focus on grant proposal mentorship for mid-career faculty.

Reception for Women Scientists

Our hope for the ADVANCE space in Metcalf Chem Lab is that it will become a heavily-trafficked area where faculty members come for support, fun, and inspiration. To this end, we sponsored a wine and cheese reception in December 2007 for women faculty in the physical sciences and engineering, life sciences, and biomedical sciences. More than twenty (20) women from all ranks attended.

We scheduled the event from 4:00-6:00 PM so that mothers would have time to stop by before their picked up their children, and teaching faculty would be able to come by after class. We made no formal presentations but provided a welcoming space for faculty and colleagues to meet, talk, and enjoy each others' company.

The reaction was overwhelmingly positive. Several faculty members mentioned that these kinds of events are rarely held at times when they can attend. Attendants also remarked how unusual it was for them to have an opportunity to speak with colleagues from diverse departments. They were surprised to discover how many departments are dealing with similar issues, ranging from graduate student education to faculty job searches.

We plan to offer these kinds of events monthly and at different times of day to accommodate a wide range of schedules that may include family caretaking responsibilities. We will target different groups of faculty to invite -- female and male assistant professors across campus, women faculty in the physical sciences and engineering, and mid-career women across the disciplines.

Peer Mentoring for Women Scientists

Dr. Semahat Demir, NSF Biomedical Engineering Program Director, presented a talk for Brown ADVANCE on peer-mentoring women in biomedical engineering. Dr. Demir provided an exceptional presentation on her own experiences developing simultaneous mentoring programs that targeted women scientists separately and biomedical engineering faculty as a whole. The

talk was attended by women graduate students in a range of scientific fields. Dr. Demir's experiences and insights confirmed what our own work has revealed: there are important benefits to providing opportunities for faculty to dialog, seek advice, and offer support.

This presentation reinvigorated our interest in developing a peer mentoring component in our initiatives. Informal peer mentoring groups will be offered in the Fall of 2008 for:

- Women faculty in physical sciences and engineering
- Women faculty in biological sciences and life sciences
- Assistant Professors, both women and men
- Environmental scientists
- Brain scientists
- Biological/clinical faculty
- Mid-career women
- Faculty of color

Tools for Improving Communications and Meetings

In April 2008, the ADVANCE Program was asked by the Center of Excellence in Women's Health to co-sponsor a lecture by career coach and consultant, Janet Bickel. Ms. Bickel suggested the topic of "Shifting the Culture from Competition to Collaboration: Tools for Improving Our Communications and Meetings" as one that she has presented to other ADVANCE Programs. The event was open to the public and was well attended by faculty and staff from across campus.

External Evaluator

In March 2008, Dr. Janet Mancini Billson of Group Dimensions International (GDI) contracted with ADVANCE as the Program's external evaluator for the life of the grant. Dr. Billson will utilize a range of data collection methods including online faculty surveys; interviews with administrators, staff, award recipients, and other key stakeholders; and focus groups with steering committee members, department chairs, women faculty, various award recipients, and mentorship participants. In addition, Janet will evaluate Dean of Faculty tracking data including composition of the faculty by rank, years to promotion, career awards, grants, and leadership roles.

GDI will provide multiple deliverables including trend analyses of all tracking data provided by Brown University; rapid mini-reports on each data-gathering point; a semester debriefing of key findings from all data-gathering points at the end of each term; an annual report encompassing all data from the grant year and highlighting key themes that emerge across stakeholders; and a final report.

The first round of work began in April 2008 with interviews and focus groups with department chairs, administrators, Career Development Award recipients, and faculty in the sciences.

Additionally, Dr. Billson designed a faculty survey to assess department climate and work environment. The survey was announced to all tenured and tenure-track faculty in the sciences and engineering. The survey will remain up on the ADVANCE website through September to boost our response rate (currently 10%). See <http://www.brown.edu/Administration/Provost/Advance/facultysurvey/>.

Managing Director Search

Mariko Chang's departure in November 2007 was followed by a national search for the new Managing Director. Our job description focused strongly on program implementation experience; we wanted someone who could work collaboratively and creatively with faculty and administrators.

We received approximately seventeen applications. Following on-campus interviews, Susan Overton was offered and accepted the position. Susan most recently worked as Research Associate for the Yale University Women Faculty Forum. She is completing her Ph.D. from Syracuse University in Cultural Foundations of Education; she earned a Certificate of Advanced Study in Women's Studies there in 2003. Her academic interests center on women in American higher education, and feminist theory, pedagogies, and research methodologies. Susan has served as Director of the Princeton University Women's Center; Lobbyist and Executive Director for the New Hampshire Women's Lobby; sexual harassment and assault educator at the University of Rhode Island; and as a lecturer in Women's Studies. She began work in the Brown ADVANCE office in June 2008.

External Advisory Board

The External Advisory Board met in May 2008. Members of the Board include:

- Elizabeth Bradley is a Professor at the University of Colorado at Boulder in the department of Computer Science and the department of Electrical and Computer Engineering.
- Molly Carnes is a 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, which was funded during ADVANCE's first round of awards.
- Frank Dobbin is a Professor of Sociology at Harvard University and has expertise in research pertaining to the career advancement of women and minorities. (Not in attendance.)
- Barbara Grosz has recently been appointed the dean of the Radcliffe Institute for Advanced Study at Harvard University. She is also the Higgins Professor of the Natural Sciences at Harvard University and a member of the National Academy of Science Committee that produced the "Beyond Bias and Barriers" report.
- Alice Hogan is the Chief Administrative Officer of the Asian University for Women, and a former ADVANCE Program Director at the National Science Foundation.

- Britt Holmen is an Associate Professor of Engineering at the University of Vermont.
- Cathy Trower is the director of COACHE (Collaborative on Academic Careers in Higher Education) at the Harvard University School of Education.
- Maria Zuber is the E.A. Griswold Professor of Geophysics and Head of the Geophysics Department at MIT. She was a member of the National Academy of Science Committee that produced the “Beyond Bias and Barriers” report. She received her PhD from Brown University.

The day’s agenda included opening remarks from Provost David Kertzer; a program overview from ADVANCE Director, Pamela O’Neil; a description of the external evaluation program from Co-PI, Mary Fennell; a presentation by Career Development Award Winners including Kristi Wharton, Sharon Swartz, Vesna Mitrovic, and Ben Raphael; and a presentation by Co-PIs and Steering Committee Members, Karen Fischer & Johanna Schmitt, which focused on issues the Steering Committee has identified as areas of focus—including dual career policies, department chairs/climate, and childcare.

Key recommendations from the External Advisory Board’s June 26 Report include:

- Increase the visibility of ADVANCE programs, awards, and research in the context of University efforts in faculty development and retention.
- Work with the Dean of the Faculty’s office to make faculty mentoring at the department level an “opt out” program rather than an “opt in” opportunity.
- Collection and publication of institutional data that will benefit women scientists and promote their participation in our grant opportunities and programs. Establish questions we want to answer, and gather relevant data to answer them.
- Seek Office of Institutional Research support for data collection and analysis.
- Clear articulation of University policies on mentoring, automatic tenure clock extensions for faculty members with caretaking responsibilities, tenure and promotion standards and processes, etc. Make these “opt out” practices faculty and department chairs (i.e., the expectation is that all faculty will participate or make use of these practices and policies, rather than placing the burden on faculty members to request them).
- Examine faculty policies to assure gender neutrality and rigor.
- Designation of one “point person” in the Dean of the Faculty’s office for negotiation of dual career faculty issues for *all new faculty*. The University should provide support and information in this area as a matter of course; faculty candidates and new faculty members can “opt out” if they do not need dual career support.
- Cultivate faculty allies who understand gender equity issues in the academy.
- Address the issues and needs of women faculty of color at Brown.
- Concentrate on department chair leadership development on mentoring, gender bias in promotion and tenure processes, promotion of research opportunities.
- Offer an ADVANCE Retreat for those most closely involved with the program to plan, review data, and strategize about institutional barriers.
- Evaluate and document follow-up to all ADVANCE programs (grant awardees, etc).
- Re-name and improve Administrator Shadowing Leadership Initiative to promote mentoring.

IV. Quantitative Indicators

Pursuant to the guidelines established by the joint NSF-Advance grantee working group on institutional transformation indicators and presented in the Toolkit for Reporting Progress Towards NSF Advance Institutional Transformation Goals, our annual report for Year 1 will include the following indicators:

Research Question	Data Indicators
(1) What is the distribution of science and engineering faculty by gender, rank, and department?	1. Number of men and women tenured and tenure-track faculty by department, rank, and gender
	2. Number of non-tenured men and women faculty (e.g., Instructional, Research, Clinical, Postdoctoral)
(2) What are the outcomes of institutional processes of recruitment and advancement for men and women?	3. Number of faculty who submit tenure packets and number awarded tenure by gender and department
	4. Number of faculty who apply for promotion, and number promoted/denied by gender, department, and promotion transition
	5. Number of tenured associate professors by department and gender with years-in-rank, reported separately for those hired as Assistant Professors and those hired as Associate Professors
	6. Number of faculty who leave their departments (excluding died or retired), by rank, gender, and department

	7. Number of faculty hired by rank, gender, and department.
(3) What is the gender distribution of science and engineering faculty in leadership positions at the institution?	8. Number of men and women scientists/engineers in leadership positions.
(4) What is the allocation of resources for science and engineering faculty by gender at the institution?	9. Study of salaries of men and women faculty (with additional controls such as department, rank, years in rank)

NSF Indicator 1: Gender Composition and Rank of Tenure/track Faculty in Science, Technology, Engineering, and Mathematics Fields (Tables 1, 2, and 7)

There have been some gains for women faculty in STEM fields at Brown over the past two years: 29% of assistant professors are women (28% in 2005-06); 20% of associate professors are women (up from 16% in 2005-06); and 14% of full professors are female (13% in 2005-06). There remains much variation among STEM departments and between faculty ranks in each department.

Notable overall increases in women in tenure/track positions since the 2005-06 year were evident in the following departments: Ecology and Evolutionary Biology; Molecular Biology, Cell Biology, and Biochemistry; Molecular Pharmacology, Physiology, and Biotechnology; and Chemistry.

In Applied Mathematics, Mathematics, and Geological Sciences, overall progress toward gender equity – and, indeed, hiring opportunities – have remained static over the past 2 years. The presence of women in tenure/track positions remains below 15% in several departments: Physics, 8%; Applied Mathematics, 9%; Engineering 10%; Computer Science and Mathematics, 12% each; Chemistry, 14%; and Neuroscience, 15%. Neither the Physics nor Applied Math departments have a female full professor (out of 13 and 16 full professors, respectively). The Engineering, Computer Science, Chemistry, and Neuroscience departments each have one female full professor (out of 28, 15, 13, and 8 full professors, respectively); Mathematics has 2 women among its 17 full professors.

Brown's ADVANCE grant targets women faculty at mid-career, as represented by promotion through professorial ranks – from Assistant Professor to Tenure and Associate Professor rank, then from Associate Professor to full Professor rank. While we need qualitative data to tell the full story, our quantitative data suggests that in several STEM departments, women successfully moved through to the next rank: the Computer Science department promoted a woman from assistant to associate professor, and Engineering promoted a woman from Associate to full Professor. The Physics; Engineering; and Molecular Biology, Cell Biology, and Biochemistry Departments each hired a woman at the Associate Professor level. Applied Mathematics and Chemistry each hired a new female assistant professor, thereby increasing their percentages of women in tenure/track ranks by 1% and 4% respectively.

NSF Indicator 2: Number of Non-tenured Faculty by Gender

An additional perspective on gender imbalance is provided by statistics on numbers of women in non-tenure track positions at Brown. The AAUP's 2004-'05 Report on the Economic Status of the Profession indicates that, "At all types of institutions, women are 10 to 15 percent less likely than men to be in tenure-eligible positions." While that national disparity is not evident at Brown (in the fall of 2007, 21% of women faculty and 14% of male faculty in STEM departments held non-tenure track positions), some of the same departments that have notable gender inequities in their tenure/track positions show disparities in their non-tenure track positions: in Applied Mathematics, 60% of its female faculty members and only 22% of its male are non-tenure track; 40% of Chemistry's female faculty members and 5% of its male faculty members are not eligible for tenure; and 40% of the Mathematics Department's female faculty members and none of its male faculty members are not tenure track faculty. [See Table 2.]

NSF Indicator 3: Tenure Review Outcomes in Science and Engineering by Gender

Tables 3a and 3b summarize tenure review outcomes at Brown for the 2006-'07 and 2007-'08 academic years. No fields – STEM, Social and Behavioral Sciences, nor Humanities – reveal gender bias in tenure candidacy or tenure outcome decisions. The statistics do reveal Brown's commitment to promoting most of those faculty members its departments have hired in tenure-track positions: 100% of the women and men in STEM departments were granted tenure in 2006-'07; and 80% of the women and 66% of the men were granted tenure in STEM departments in 2007-'08. Of the faculty of color who underwent tenure reviews in these two years, both received tenure (one Asian female and one Black male).

NSF Indicator 4: Promotion Review Outcomes in Science and Engineering by Gender

Likewise, promotions from Associate to Full Professor were equitable for women and men in both academic years (2006-'07 and 2007-'08): 100% of faculty members who underwent reviews in STEM departments were promoted. There were fewer women than men who went through the review process in STEM departments: 2 women and 4 men in 2006-'07, and 5 women and 7 men in 2007-'08. As noted in last year's report, this could indicate that the pipeline continues to "leak" – fewer women are persisting to the Associate Professor level perhaps due to voluntary departures from the academy for family reasons or because of

dissatisfaction with institutional climate. (More research is needed.) Across all departments, four faculty members of color were reviewed and promoted from Associate to Full Professor during these two years: two Asian females, one Asian male, and one Black male.

NSF Indicator 5: Numbers of tenured Associate Professors by department and gender with years-in-rank

As noted in last year's report, time in rank at the Associate Professor level is of particular interest for the Brown ADVANCE program with our focus on mid-career women faculty: male and female faculty members can experience burn-out upon being granted tenure; others devote increased time to starting a family once they receive tenure. As a result, the time in rank at associate professor varies greatly. To examine whether there are gender differences in years in rank at the associate professor level, we present two tables of years in rank at the associate professor level. Table 5a includes faculty who were *hired as assistant professors*; Table 5b includes faculty who were *hired as associate professors*.

In 2007-'08, all Brown Associate Professors in STEM fields were promoted from within, hired to Brown as Assistant Professors. Of those 23 women and 28 men, about half of each (12 women and 13 men) have been in rank less than five years. Women's average years in rank is lower than men's in the STEM fields: 7.3 years as compared to 8.25.

In the Social and Behavioral Sciences, however, there are some notable gender differences. Men are far more likely to be hired by Brown at the Associate Professor level with any number of years of experience. And female Associate Professors who were hired as Assistant Professors by Brown are far more likely than men to "sit" at the Associate Professor level for significant periods of time – an average of 14 years for women as compared to 5.4 years for men.

NSF Indicator 6: Number of faculty (non-retirement) departures by gender

Table 6 shows voluntary departures from Brown over the past two academic years. These numbers were not weighted to give us an indication of percentages of women and men who left STEM, SBS, and Humanities fields, however it does not appear that there are gendered discrepancies in the STEM and SBS departments. Three of these 31 faculty members who chose to leave the University were Black (one female and two males), and 25 of the 31 faculty members who left Brown were in tenure track positions. Future data will include a breakdown by department, tenure vs. non-tenure track departures, and race and gender identifiers within departments.

NSF Indicator 7: New hires in STEM and SBS by department and gender

Table 7 indicates that Brown hired male and female Assistant Professors in the STEM fields and Social and Behavioral Sciences in equitable numbers for the 2007-08 academic year. However, significantly more male faculty members than female faculty members were hired at the Associate and Full Professor level in both STEM and SBS disciplines.

NSF Indicator 8: Number of men and women scientists and engineers in leadership positions

The goals of the ADVANCE program include creating an environment that ensures that women rise to leadership positions. Data on women science and engineering faculty in key leadership positions are presented in Table 8.

One of the key positions of leadership at a university is that of Department Chair. During the 2007-08 academic year, 15% of the Department Chairs in STEM fields were women and 10% of the Department Chairs in SBS fields were women. Only two STEM departments (Mathematics and Molecular Microbiology & Immunology) and only one SBS department (Sociology) had female department chairs.

Serving on the Tenure and Promotion Committee (TPAC) is also an important leadership position. Although both Associate and Full Professors are eligible to serve on this committee, positions are usually held by Full Professors. One of six STEM faculty on the TPAC committee were women (17%). One of three SBS faculty on TPAC in 2007-2008 were women (33%).

Because Deans are not always faculty, we did not organize them by discipline. Fifty percent of the Deans at Brown are women, including the Dean of the College and the Dean of the Graduate School, two of the most influential positions at Brown. Thirty seven percent of the Associate Deans are women. The highest ranking position of the university, university president, is held by a woman (President Ruth Simmons).

NSF Indicator 9: Salary levels of male and female faculty members

Tables 8 and 9 indicate salaries of male and female professors in STEM, Social and Behavioral Sciences, and Humanities disciplines at Brown. In the Life and Medical Sciences, the salaries of female Assistant and Associate Professors are slightly higher than those of their male peers (103%); and in the Physical Sciences at the Associate Professor level, the five female Associate Professors average slightly higher salaries than their 27 male peers (102%). In both the Physical Sciences, and Life and Medical Sciences, mean salary inequities between male and female faculty members are greatest at the Full Professor rank: male Professors in the Physical Sciences make, on average, \$9634 (7%) more than their female counterparts; and male Professors in the Life and Medical Sciences make, on average, \$6715 (4%) more than their female peers.

Across all disciplines and faculty ranks at Brown, women faculty members make, on average, 85% of what their male peers make. Women faculty in the Humanities make 92% of their male peers' salaries; women in the (Life, Medical, and Physical) Sciences, Technology, Engineering, and Mathematics departments make 84% of their male colleagues' salaries; and women faculty in the Social and Behavioral Sciences make 77% of male faculty members' salaries.

A 2006 AAUP report (the most recent year for which this report was issued) entitled “Faculty Gender Equity Indicators” (West and Curtis) provides some national comparison data.

In 2005-06, across all ranks and all institutions, the average salary for women faculty was 81 percent of the amount earned by men. This comparison has remained virtually unchanged since the AAUP began collecting separate salary data for women and men faculty in the late 1970s... Among all full professors at all types of institutions in 2005- 06, women earned on average 88 percent of what men earned. For associate and assistant professors, the overall national figure for women was 93 percent. However, these numbers are actually slightly lower than they were thirty years previously, down from 90 and 96 percent respectively. The overall salary disadvantage for women is a combination of two primary factors: women are more likely to have positions at institutions that pay lower salaries, and they are less likely to hold senior faculty rank...

V. Year Three Activities

Faculty Development and Leadership Initiatives

The Mentoring Program is an initiative that has not been implemented as quickly as we expected because we lost our Managing Director in December of 2007. The expectation is that initiative will go forward in full force during the summer and fall of 2008.

The Leadership Initiatives will provide mechanisms for women faculty interested in administrative or scientific leadership position. Requests for Proposals (RFPs) for the leadership initiatives were completed in Fall 2007 with the expectation that they would be released once the new Managing Director was in place. Summer 2008 will see the release of the following programs:

- Administrator Shadowing Program
- Awards to Develop Scientific Leadership
- Leadership Support Fund

Program Coordinator Search

In August of 2008, a Program Coordinator joined the ADVANCE team at Brown. She will work closely with the Managing Director and other administrative partners to implement program initiatives and offer administrative support. The majority of her time will be spent coordinating the mentoring program.

Visiting Scholars

Our Visiting Scholar Program will continue in Year Three, with two distinguished scholars scheduled for fall 2008: Hunter College's Gender Equity Project Director and Professor of Psychology **Virginia Valian** will spend a day at Brown in September 2008. She will focus on gender schemas that hinder the promotion of women in academia. University of California Hastings Law Professor **Joan Williams** will be on campus in October 2008 to discuss ways in which discrimination based on family responsibilities impacts women faculty. We anticipate that both Visiting Scholars will engage with institutional partners, department chairs, women faculty and graduate students, and ADVANCE Steering Committee members.

Exploring Interactive Theatre as Faculty Development Tool

The ADVANCE PI, Managing Director, and Steering Committee are interested in exploring the possibilities of an interactive theatre presentation as a vehicle for faculty leadership development at Brown. We are examining the offerings of the University of Michigan's Center for Research on Learning and Teaching (CRLT) Players, and Cornell University's Cornell Interactive Theater Ensemble via other ADVANCE institutions' evaluations of faculty members' responses to these presentations on their campuses.

Further Website Development

One goal for the website is the addition of ADVANCE annual reports and institutional baseline

data. Recent Steering Committee recommendations include incorporating more information about Brown women scientists and their research for the purposes of creating faculty networks for peer mentoring and interdisciplinary collaboration. We will include statements of Brown University policies that promote gender and racial equity in faculty ranks. We will offer tools for senior faculty members to consult in writing letters of recommendation for junior colleagues, and in participating in or leading search committees or promotion reviews. We will offer Mentoring how-to's and resource. We will include links to data and literature that demonstrate progress on gender equity issues in American higher education. The Research Opportunities Coordinator is working closely with the Office of the Vice President for Research to provide a more central location for campus resources for grant seekers, as well as a glossary and guidelines for grant development.

Table 1. Number and Percent of Tenured and Tenure Track Faculty in STEM Fields and Social and Behavioral Sciences (SBS) by Gender, Rank, and Department 2007-2008 Academic Year

	Assistant Professors			Associate Professors			Full Professors		
	Women	Men	%W	Women	Men	%W	Women	Men	%W
STEM									
Applied Mathematics	2	3	40%	0	2	0	0	16	0%
Biology									
Ecology and Evolutionary Biology	1	3	25%	1	1	50%	3	5	38%
Molecular Bio, Cell Bio & Biochemistry	3	9	25%	1	0	100%	4	11	27%
Molecular Microbiology & Immunology	2	1	67%	0	2	0	1	1	50%
Molecular Pharmacology, Physiology & Biotechnology	1	1	50%	1	1	50%	3	5	38%
Neuroscience	1	3	25%	0	2	0%	1	7	13%
Chemistry	2	2	50%	1	4	20%	0	12	0
Cognitive and Linguistic Sciences	0	1	0%	1	2	33%	4	7	36%
Computer Science	1	4	20%	1	4	20%	1	14	7%
Engineering	1	4	20%	2	5	29%	1	27	4%
Geological Sciences	1	3	25%	0	4	0%	3	9	25%
Mathematics	1	6	15%	0	2	0%	2	15	12%
Physics	2	4	33%	1	6	15%	0	13	0%
STEM TOTAL	18	44	29%	9	35	20%	23	142	14%
SBS									
Africana Studies	2	1	67%	1	1	50%	2	6	25%
American Civilization	0	1	0%	1	4	20%	1	2	33%
Anthropology	1	0	100%	1	3	25%	4	7	36%
Economics	3	7	30%	0	2	0%	1	18	5%
Environmental Studies, Center for	1	1	50%	0	1	0%	0	1	0%
History	3	3	50%	4	6	40%	4	8	33%
Political Science	3	2	60%	3	4	43%	1	8	11%
Psychology	0	0	0%	2	2	50%	2	3	40%
Sociology	2	0	100%	3	5	38%	1	6	14%
SBS TOTAL	15	15	50%	15	27	36%	16	59	21%

Data Source: Office of the Dean of Faculty

Table 2. Gender Composition of STEM and SBS Departmental Faculty (Tenure and non-Tenure Track), Fall 2007

	Tenured & Tenure Track			Non-Tenure Track ¹			Non-Tenure Track as % of Women	Non-Tenure Track as % of Men
	Women	Men	%W	Women	Men	%W		
	STEM							
Applied Mathematics	2	21	9%	3	6	33%	60%	22%
Biology								
Ecology and Evolutionary Biology	5	9	36%	0	1	0%	0%	10%
Molecular Bio, Cell Bio & Biochemistry	8	20	29%	2	5	29%	20%	20%
Molecular Microbiology & Immunology	3	4	43%	0	2	0%	0%	33%
Molecular Pharmacology, Physiology & Biotechnology	5	7	42%	1	2	33%	17%	22%
Neuroscience	2	12	15%	0	2	0%	0%	14%
Chemistry	3	18	14%	2	1	67%	40%	5%
Cognitive and Linguistic Sciences	5	10	33%	2	2	50%	29%	17%
Computer Science	3	22	12%	0	1	0%	0%	4%
Engineering	4	36	10%	1	13	7%	20%	27%
Geological Sciences	4	16	20%	0	1	0%	0%	6%
Mathematics	3	23	12%	2	0	100%	40%	0%
Physics	2	23	8%	0	1	0%	0%	4%
STEM TOTAL	49	221	22%	13	37	26%	21%	14%
SBS								
Africana Studies	5	8	38%	2	2	50%	29%	20
American Civilization	2	7	22%	1	1	50%	33%	13
Anthropology	6	10	38%	2	1	67%	25%	9
Economics	4	27	13%	2	8	20%	33%	23
Environmental Studies, Center for	1	3	25%	3	1	75%	75%	25
History	11	17	39%	3	5	38%	21%	23
Latin American Studies Center				0	1	0%		

¹ Non-tenure track includes the faculty titles/ranks of Adjunct, (Research) Professor, Investigator, Lecturer, and Visiting Professor. Note that this is a different data set from that used in Brown's initial NSF Annual Report; it excludes Postdocs and Fellows.

Pembroke Center for Research on Women and Gender								
Political Science	7	14	33%	0	1	0%	0%	7%
Population Studies & Training Center				1	3	25%		
Psychology	4	5	44%	2	4	33%	33%	44%
Taubman Center for Public Policy				3	7	30%		
Race & Ethnicity Center								
Sociology	6	11	35%	1	1	50%	14%	8%
Urban Studies Program				0	1	0%		
Watson Institute				3	10	23%		
SBS TOTAL	46	102	31%	23	46	33%	33%	32%

Data Source: Office of the Dean of Faculty and Office of Institutional Research

Table 3a. Tenure Review Outcomes in Science and Engineering, Social and Behavioral Sciences, and Other (Humanities) by Gender, 2006-07

	# of Reviews		# Approved		# Denied		% Approved	
	Women	Men	Women	Men	Women	Men	Women	Men
STEM	2	2	2	2	0	0	100%	100%
SBS	0	3	n/a	3	n/a	0	n/a	100%
Non-STEM/SBS	1	3	1	2	0	1	100%	66%
Total	3	8	3	7	0	1	100%	87.5%

Racial categories broken out by the Brown University Dean of the Faculty Office are Asian, Black, and Hispanic. There were no women of color in the tenure review pool for academic year 2006-07. There was one Black male, who received tenure.

Table 3b. Tenure Review Outcomes in Science and Engineering, Social and Behavioral Sciences, and Other (Humanities) by Gender, 2007-08

	# of Reviews		# Approved		# Denied		% Approved	
	Women	Men	Women	Men	Women	Men	Women	Men
STEM	5	6	4	4	1	2	80%	66%
SBS	2	1	2	1	0	0	100%	100%
Non-STEM/SBS	3	2	2	1	1	1	66%	50%
Total	10	9	8	6	2	3	80%	66%

There was one Asian woman in the tenure review pool for academic year 2007-08; she received tenure.

Data Source: Office of the Dean of the Faculty

Table 4a. Promotion Review Outcomes from Associate to Full Professor, 2006-07

	# of Reviews		# Approved		# Denied		% Approved	
	Women	Men	Women	Men	Women	Men	Women	Men
STEM	2	4	2	4	0	0	100%	100%
SBS	1	3	0	3	1	0	0%	100%
Non-STEM/SBS	2	5	2	4	0	1	100%	80%
Total	5	12	4	11	1	1	80%	91%

One Asian female and one Black male were in the promotion pool; both were promoted to full Professor.

Table 4b. Promotion Review Outcomes from Associate to Full Professor, 2007-08

	# of Reviews		# Approved		# Denied		% Approved	
	Women	Men	Women	Men	Women	Men	Women	Men
STEM	5	7	5	7	0	0	100%	100%
SBS	2	1	2	1	0	0	100%	100%
Non-STEM/SBS	2	0	2	n/a	0	0	100%	100%
Total	9	8	9	8	0	0	100%	100%

One Asian female and one Asian male were in the promotion pool; both were promoted to full Professor.

Data Source: Office of the Dean of the Faculty

Table 5a. Years in Rank at the Associate Professor Level for STEM and SBS Faculty *Hired as Assistant Professors*

Years in Rank	STEM Departments				SBS Departments			
	# women	% women	# men	% men	# women	% women	# men	% men
0-2 years	2	9%	4	14%	0		8	42%
3-5 years	10	43%	9	32%	0		4	21%
6-8 years	3	13%	4	14%	1	16%	3	16%
9-11 years	4	17%	6	21%	0		2	11%
12-14 years	2	9%	1	4%	2	33%	1	5%
15+	2	9%	4	14%	3	50%	1	5%
Mean overall years in rank	7.3		8.25		14		5.4	

Data furnished by Office of Dean of the Faculty

Table 5b. Years in Rank at the Associate Professor Level for STEM and SBS Faculty *Hired as Associate Professors*

Years in Rank	STEM Departments				SBS Departments			
	# women	% women	# men	% men	# women	% women	# men	% men
0-2 years	0		0		2		4	
3-5 years	0		0		1		4	
6-8 years	0		0		0		4	
14+ years	0		0		0		2	
Mean overall years in rank	0		0		2.3		7.14*	

Data furnished by Office of Dean of the Faculty

*Note: Without the 2 longest-in-rank males (14 years and 39 years), the mean overall years in rank for men in SBS is 3.9.

Table 6. Voluntary (Non-retirement) Departures by Gender in Science and Engineering, Social and Behavioral Sciences, and Other (Humanities) Departments, 2006-07 and 2007-08 academic years combined

	females	males
STEM	3	12
SBS	3	8
Non-STEM/SBS	4	1
Total	10	21

These departures include 25 tenure/track faculty members, 1 lecturer, and 5 non-tenure track faculty members whose contracts expired.

These departures include 1 Black female and 2 Black males.

Data Source: Office of the Dean of the Faculty

Table 7. New Faculty Arrivals in STEM and SBS, by Department and Gender, 2007-2008

	Assistant Professors			Associate & Full Professors		
	Women	Men	%W	Women	Men	%W
STEM						
Applied Mathematics	1	1		0	0	
Chemistry	1	0		0	0	
Computer Science	0	0		0	1	
Engineering	0	0		1	1	
Geological Sciences	0	0		0	2	
Mathematics	0	1		0	2	
Molecular Bio, Cell Bio & Biochemistry	0	0		1	0	
Physics	0	0		1	0	
STEM TOTAL	2	2	50%	3	6	33%
SBS						
Africana Studies	1	0		0	1	
History	0	0		0	0	
Political Science	0	0		0	2	
Sociology	0	0		0	1	
SBS TOTAL	1	0	100%	0	4	0%

Data Source: Office of the Dean of Faculty

Table 8. Science and Engineering Faculty in Leadership Positions at Brown, 2007-08

	Total	Men	Women	% Women
STEM				
Tenured Faculty (Assoc & Full Professors)	209	177	32	15%
Tenured Full Professors	165	142	23	14%
Department Heads	13	11	2	15%
Faculty on Tenure, Promotion and Appointments Committee	6	5	1	17%
SBS				
Tenured Faculty (Assoc & Full Professors)	117	86	31	26%
Tenured Full Professors	75	59	16	21%
Department Heads	10	9	1	10%
Faculty on Tenure, Promotion, and Appointments Committee	3	2	1	33%
Deans	6	3	3	50%
Associate Deans	27	17	10	37%

Table 9: Mean Salary by Science category, Rank and Gender, 2007-2008 Academic Year

	Assistant Prof		Associate Prof		Full Prof		TOTAL	
	Women	Men	Women	Men	Women	Men	Women	Men
STEM	\$76,286	\$75,910	\$92,100	\$90,109	\$138,351	\$141,056	\$102,539	\$121,621
Physical Sciences	\$70,414	\$74,438	\$92,040	\$90,228	\$128,259	\$137,893	\$ 93,734	\$119,305
Life and Med Science	\$80,803	\$77,925	\$92,150	\$89,817	\$141,561	\$148,276	\$115,066	\$122,227
SBS	\$74,293	\$82,089	\$86,301	\$90,220	\$140,068	\$164,316	\$100,259	\$130,292
Non-STEM / SBS	\$66,470	\$68,229	\$77,431	\$83,408	\$126,710	\$132,749	\$100,136	\$109,142
Total	\$73,387	\$75,322	\$83,565	\$88,452	\$133,549	\$144,847	\$102,774	\$120,376

Data Source: Office of the Dean of Faculty

Table 10. Average Female Salary as a Percentage of Average Male Salary by Division and Rank, 2007-2008 Academic Year

	Assistant	Associate	Full	Total
STEM	100%	102%	98%	84%
Physical Sciences	94%	102%	93%	79%
Life and Medical Sciences	103%	103%	96%	94%
SBS	91%	96%	85%	77%
Non-STEM / SBS	97%	93%	95%	92%
Total	97%	95%	92%	85%

Data Source: Office of the Dean of Faculty

Table 11a. Number and Percent of Women of each Race by Department, 2007-2008 Academic Year

	Asian / Pacific Islander			Black			Hispanic			White		
	Women	Men	%W	Women	Men	%W	Women	Men	%W	Women	Men	%W
STEM												
Applied Mathematics	1	6	14%	0	0	0%	0	0	0%	1	15	6%
Biology												
Ecology and Evolutionary Biology	0	0	0%	0	0	0%	0	0	0%	5	9	36%
Molecular Bio, Cell Bio & Biochemistry	0	0	0%	0	0	0%	0	0	0%	8	20	29%
Molecular Microbio & Immunology	1	0	100%	0	1	0%	1	0	100%	1	3	25%
Molecular Pharmacology, Physiology & Biotechnology	0	1	0%	0	1	0%	0	0	0%	5	5	50%
Neuroscience	0	1	0%	0	0	0%	0	1	0%	1	10	9%
Chemistry	0	3	0%	1	1	50%	0	0	0	2	14	13%
Cognitive and Linguistic Sciences	0	0	0%	0	0	0%	0	0	0%	5	10	33%
Computer Science	0	1	0%	0	1	0%	0	0	0%	3	20	13%
Engineering	0	9	0%	0	0	0%	0	1	0%	4	26	13%
Geological Sciences	0	2	0%	0	0	0%	0	1	0%	4	13	24%
Mathematics	2	0	100%	0	0	0%	0	0	0%	1	23	4%
Physics	1	5	17%	0	0	0%	0	0	0%	2	18	10%
STEM TOTAL	7	5	58%	6	10	38%	1	3	25%	42	186	18%
SBS												
Africana Studies	0	0	0%	4	8	33%	0	0	0%	0	1	0%
American Civilization	0	1	0%	0	0	0%	0	1	0%	2	5	29%
Anthropology	0	0	0%	1	0	100%	0	0	0%	5	10	33%
Economics	2	3	40%	0	1	0%	0	4	0%	2	19	10%
Environmental Studies, Center for	0	0	0%	0	0	0%	0	0	0%	1	3	25%
History	3	0	100%	0	0	0%	0	0	0%	8	17	32%
Political Science	0	0	0%	1	1	50%	0	0	0%	6	13	32%
Psychology	0	0	0%	0	0	0%	0	0	0%	4	5	44%
Sociology	0	0	0%	0	0	0%	0	2	0%	6	9	40%
SBS TOTAL	5	4	56%	6	10	38%	0	7	0%	34	82	29%

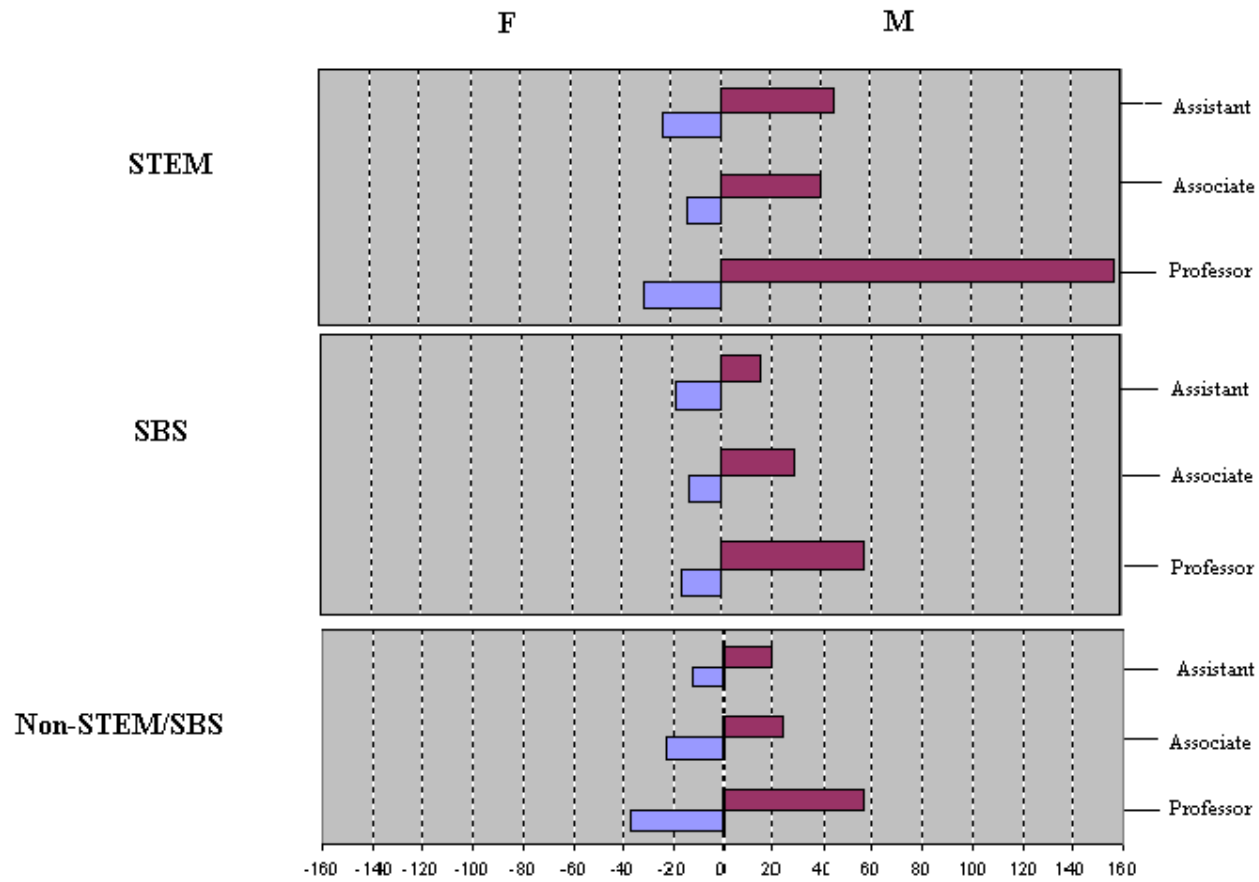
Data Source: Office of the Dean of Faculty

Table 11b.
Number of Women of each Race by Rank, 2007-2008 Academic Year

	Women				Men			
	Asian	Black	Latino	White	Asian	Black	Latino	White
STEM								
Assistant Professor	4	1	2	16	8	2	2	33
Associate Professor	1	0	0	12	9	1	0	30
Full Professor	1	0	0	29	14	1	1	141
STEM TOTAL	6	1	2	57	31	4	3	204
SBS								
Assistant Professor	5	3	1	9	0	1	2	13
Associate Professor	1	0	0	12	1	1	4	22
Full Professor	1	3	1	11	4	7	2	44
SBS TOTAL	7	6	2	32	5	9	8	79

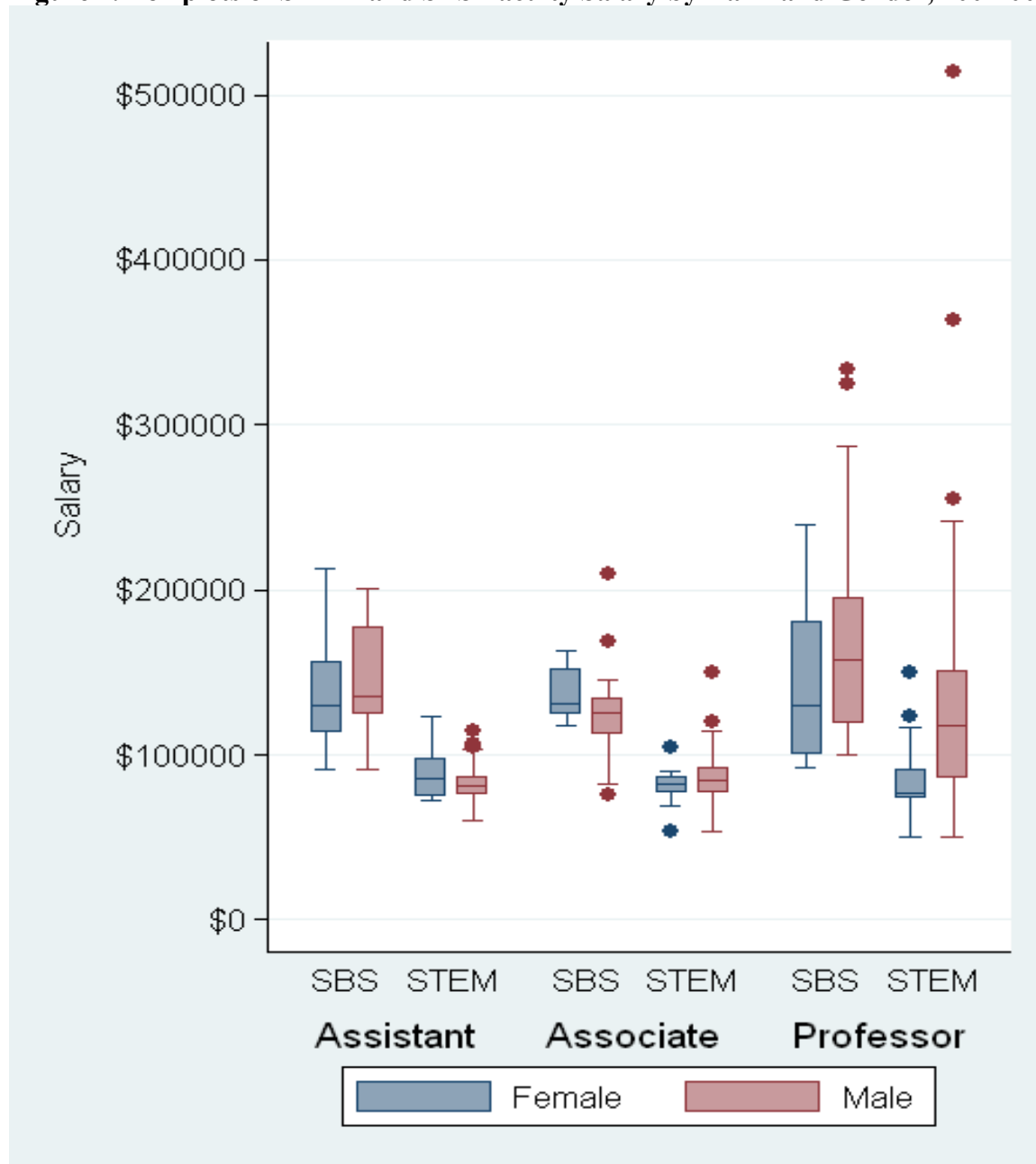
Data Source: Office of Dean of the Faculty

Figure 1. Gender Distribution of Faculty by Rank, 2007-2008 Academic Year



Data Source: Office of the Dean of Faculty

Figure 2. Box plots of STEM and SBS Faculty Salary by Rank and Gender, 2007-008 Academic Year



Data Source: Office of the Dean of Faculty