INSTITUTIONAL OVERVIEW

ADVANCE has successfully partnered with Human Resources to produce the first University brochure on the Work-Life Program, a new initiative at Rice. This informational brochure was designed to help recruit new faculty. Copies were distributed in mid-Fall 2007 and used in packets for faculty candidates on campus interviews. They have received excellent feedback. The brochure can be found online at the new Work-Life website http://cohesiondev.rice.edu/campusservices/worklife/index.cfm#workLife_Site#Rice_Worklife_website. In conjunction with this effort, ADVANCE also supported the development and mailing of a two-page information sheet on children’s support programs available on the Rice University campus. This information sheet was mailed directly to each faculty and staff member’s home.

The Rice University Children’s Campus (our new child care center) has been discussed for nearly two decades, and ground was broken for the facility in Fall 2007. The primary issue the University is addressing with the child care center is faculty recruitment and retention. The Children’s Campus will be a single-story, 9,743 square foot building located just one block west of campus and will embody Rice’s commitment to sustainability, as reflected in its certification as part of the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program. The facility will be located where several old houses were carefully “deconstructed,” and about 10,000 bricks from those buildings will be incorporated into the façade of the children’s campus, bringing a sense of continuity and history to this beautiful addition to the neighborhood.

Rice piloted a new program to address partner placement and faculty recruitment this year. Lisa Hall, Assistant to Vice Provost of Academic Affairs, worked individually with twenty-four families. Of the 24 families, three current faculty members needed partner placements. Twenty-one potential faculty members were contacted by Hall to help with individual issues that may hinder or encourage their acceptance of the faculty offer. She helped 5 families with real estate, 6 with school choices, and 13 with partner employment opportunities. Of the 14 employment cases, 3 received job offers as a result of her assistance, 6 are in the interview process, and 5 have not moved to Houston yet, but we are working with them remotely. Five of the 24 are in a STEM field. We are not through the hiring process, so complete data on impact is not yet available, but we believe this may prove a valuable addition to the University support programs for recruitment and retention.
Rice ADVANCE has tested new programs, partnered with other Schools and organizations both on and off campus, and had several significant successes in 2007-08.

- Faculty Search Committee Chair Training institutionalized in the Provost’s office
- Accountability for faculty search and mentoring processes affirmed by the Provost
- Number of female faculty increased
- Climate Survey completed
- Professional Development for Department Chairs institutionalized

**Faculty Search Committee Training**

ADVANCE leadership (Kathleen Matthews, PI, Sallie Keller-McNulty, Co-PI, Michelle Hebl, Co-PI, and Jan Rinehart, Executive Director) met with the University Task Force on Diversity in early September 2007. Matthews and Keller-McNulty were planning on search committee training in Natural Sciences and Engineering, and the Diversity Task Force was planning search committee training for all university search committees. We did not want these efforts to be competing, but rather to form a complementary approach to search committee training. ADVANCE presented an outline for training, discussed the possibilities, and together we decided the Vice Provost for Academic Affairs, Carol Quillen (chair of the Diversity Task Force and member of the ADVANCE Leadership Committee) would lead search committee chair training for all University chairs of faculty search committees. Mikki Hebl (Co-PI) was part of each of the three training sessions that occurred on October 5, 9, and 15, 2007. Thirty-four faculty representing fourteen departments participated in the trainings. Not all the 49 faculty searches are complete, so we cannot provide a final report on hiring. Search Committee training will continue in Fall 2008 using a newly developed presentation from the NSF ADVANCE Recruitment Committee. This presentation has been approved by the ADVANCE Leadership Committee and the Diversity Task Force. It will be presented to the Deans Council in May, 2008.

Individual departments had active discussions about equity. To support the faculty search committees, Lisa Hall and Jan Rinehart have researched extensively targeted associations and websites to advertise faculty positions. In 2008-09, these advertising resources will be more widely offered to the search committee chairs. As examples of department engagement, Rinehart met with the Physics Faculty Search Committee to help focus the discussions on equity. She then posted the faculty search advertisement in several ethnic minority and female focused listerves and organizations. A faculty member, who had served on the Year 1 ADVANCE Recruitment Committee, requested information and research articles on evaluation biases to share with the Chemical and Biomolecular Engineering faculty search committee.
**Provost Faculty Search Initiative/Accountability**

The Provost required, for the first time, a questionnaire be completed by each search committee. The goal of this intervention is to increase under-represented groups in the applicant pool in on-campus interviews and, ultimately, in who is hired for tenure/tenure-track faculty positions. The major focus for 2007-08 is more emphasis on an aggressive approach to enriching the applicant pool. With the returned questionnaires, a document of good search committee practices will be developed. These will be distributed from the Provost’s Office at the Search Committee Trainings and directly to department chairs and deans of schools.

In response to the Provost’s memo requesting more accountability, Sallie Keller-McNulty, Dean of Engineering, and Kathleen Matthews, Dean of Natural Sciences, required search committees have a faculty member responsible for the equity process. These individuals (called “Equity Liaisons” in Engineering) are responsible for completing the Provost’s questionnaire and ensuring equity in the department search process. These faculty members will be included in the Search Committee Training in Fall 2008. What this signals to the faculty is more direct involvement in the quality of the search process by the Provost and a higher level of accountability than has been present historically.

The Provost has called for formal departmental faculty mentoring programs to be established. He has not prescribed how to establish faculty mentoring programs, but he has stated he wants a system of both advocacy and evaluative processes. ADVANCE has provided information and models of mentor programs for departments to consider in their discussions.

**Rice Female Faculty Increase**

The Rice female participation in STEM fields is consistently growing, but we have more to do to reach the national level of participation (25%) for female faculty.
The female participation in STEM continues to increase as the participation of men remains fairly consistent. This increase is not a result of creating additional faculty positions.
In 2007, 50% of senior men hold a Named Chair compared to 67% of the senior women. Nine percent of the senior men are Department Chairs while 33% of the senior women are Department Chairs or Deans. Senior female participation in these leadership roles has been fairly consistent for several years. In 2003, 33% of senior women were Department Chair or Dean and 56% of the senior women held Named Chairs. At the same time, 11% of the men were Department Chair or Dean and 48% of the senior men held Named Chairs.

Of the 44 assistant professors hired 2003-07, 25% are female. If you compare this to the national average of junior female faculty (36.4%), Rice is not doing as well as we can.

Fifteen senior faculty (associate and full professors) were hired in 2003-07, 27% were female. If you compare this to the national average of senior women in STEM fields, 20.4%, Rice is doing well above the national average of hiring senior women.

**Campus Climate Survey 2007**

Rice ADVANCE Program subcontracted with Lois Tetrick and Eden King of George Mason University to conduct the campus climate survey. Tetrick is the researcher who conducted the 2003 climate survey and held those data according to the original design for this survey. There was a desire to continue this relationship so that data could be compared from 2003 and 2007. The next climate survey is planned for 2011. The Provost paid for half of the cost plus consultant travel, and the ADVANCE Program paid the other half. The survey was administered online through Survey Monkey with correspondence encouraging faculty participation from the Provost. The survey began September 19th and ended October 17. There were 310 (60%) tenure/tenure-track faculty who completed the survey out of 517 faculty surveyed. Tetrick and King continue to work on the individual departmental climate reports (where there was sufficient faculty response). The response rate was enhanced from the 2003 level of 43%.

This report has not been finalized by the contract team and therefore has not yet been disseminated to the Rice community. Some of the overall findings are summarized below. The complete report will be submitted in a future quarterly report to NSF.

1. Of the six schools on campus, the School of Humanities reports the lowest Affective Commitment (made up of three combined scales: Commitment, Overall Satisfaction, and Satisfaction with Distribution of Resources).
2. An overall average level of family interfering with work was 2.29 and the average level of work interfering with family was 3.10. This reflects low to moderate levels of work-family conflict. Problems with childcare and eldercare occasionally interfered with work (M=1.68 and 1.28). Approximately 40% reported some interference in work as a function of childcare, while 20% reported experiencing eldercare interference. 82% of the sample reported experiencing some degree of guilt. Women reported experiencing more frequent conflict from work to family (M=3.48) and more guilt (M=2.70) than did men (M=2.97 and M=2.20).
3. The average level of satisfaction with the distribution of committees was somewhat positive (M=3.47). There were no gender differences reported in levels of satisfaction with the allocation of committee service (Men M=3.5 and Women M=3.4). Women did report higher levels of volunteering for, being asked to serve, serving on and chairing committees than did men.

![Graph 5: Gender Differences in Committee Service](image)

4. Faculty were asked to assess their departmental climate using such adjectives as friendly, collegial, cooperative, civil, and respectful. Tolerant atmosphere was assessed by using adjectives such as diverse, non-racist, non-sexist, and non-homophobic. Overall, faculty rated their departments as moderately positive (M=3.84) and mostly tolerant (M=4.06). Women perceived their departments to be significantly less tolerant (M=3.76) than did men (M=4.16). Women perceived their departments to be significantly less egalitarian (M=3.19) than did men (M=4.06). There were no gender differences in positivity or overall influence.
5. An overall average report of events of sexual harassment indicates that these are rare (M=1.17), suggesting that the overwhelming majority of respondents never encountered unwanted and uninvited sexual attention. However, women (M=1.45) report experiencing these actions more often than do men (M=1.08). Overall mean for negative comments is 1.23, but women overhear more negative comments than do men (M=1.44 and M=1.15). Incivility on average was reported 1.50 which is low, but women report (1.70) more than men (M=1.43). Full Professors reported more incivility than others (M=1.61; Assoc. M=1.44 and Asst. M=1.37).
6. Women spend more time mentoring undergraduates than do men.

![Graph 8: Gender Differences in Mentoring](image)

**Professional Development for Department Chairs Institutionalized**

ADVANCE continues to work with Dr. Carol Quillen, Vice Provost for Academic Affairs, on several key initiatives. In Spring 2008, all university department chairs were offered formal training on “Creating a Vision and Building Departmental Support” and “Dealing with Difficult Faculty.” Dr. Brent Smith, Associate Professor of Organizational Behavior at the London School of Business, led the two workshops. The evaluation told us the most interesting part of the workshops were the presentation and discussion led by Smith. He is respected by this group of senior faculty. Respect is key to successfully engaging department chairs in professional development. Chairs reported back on things they would change as a result of the workshop. At the top of the list were the importance of feedback to faculty and a better understanding of how to develop a departmental vision. The plan is to host a professional development program for chairs each semester.

**BUDGET**

**Year 2 Report - As of April 30, 2008**

**Personnel**

Salaries and fringe benefits for faculty, staff, graduate and undergraduate students was budgeted at $192,507.00. A total of $315,270 was spent and/or is encumbered in Year 2.

- Two full time staff members work on the ADVANCE Program: Jan Rinehart, Executive Director, and Kisha McRae-Kennedy, Coordinator. McRae-Kennedy was paid 100% off the grant, whereas Rinehart is paid 81.5% from the grant and 18.5% from the Provost office to provide opportunities to leverage ADVANCE...
activities outside science and engineering. Total salary and fringe benefits $146,058.

- Faculty salaries have been encumbered at $138,000 included summer salary for several faculty:
  - Co-PI Michelle Hebl
  - Co-PI Rebecca Richards-Kortum
  - Chair of the Recruitment Committee Mike Wong
  - Co-Chair of the Recruitment Committee Cecilia Clementi
  - Chair of the Retention and Climate Committee Pernilla Wittung-Stafshede
  - Co-Chair of the Retention and Climate Committee Liliana Borcea.

- There is 1 graduate student supported by the grant for evaluation, assessment, and research. This student was supported through stipend and tuition remission at $26,738.

- There were 2 undergraduate student workers who prepared the Faculty Awards Database and worked on the Connexions project. They were supported at $4,474 as hourly wage with fringe benefits.

**Travel**

A total of $19,045 was budgeted for travel. For Year 2, $22,363 ($11,007 has been spent and $9,676 encumbered) will be expended in Year 2 to support travel of faculty, staff, and consultants.

- Speakers were brought in for the *Negotiating the Ideal Faculty Position* Workshop and the *Faculty Career Success* Workshop at $5,656
- The External Evaluator traveled to Houston for a 2 day visit at $560.
- Monica Biernat was the guest lecturer for the Discourse on Leadership and Diversity at $622.
- Travel for CRLT players was $4,236.
- Rinehart went to Dallas for a conference on minority faculty recruiting for $1,678.
- Carol Quillen, Kathy Collins, Mikki Hebl, and Jan Rinehart will travel to the NSF PI meeting in May at an estimated cost of $6,939.
- Rinehart will present an ADVANCE paper at WEPAN in June for an estimated cost of $1,284.
- Rinehart will present an ADVANCE paper at ASEE in June for an estimated cost of $1,453.

**Participant Support**

A total amount of $48,616 was budgeted for Year 2 participant costs with $45,878 expended ($34,878 for the *NIFP* and an estimated $11,000 for the *Faculty Career Success* workshop).

- *Negotiating the Ideal Faculty Position* Workshop for 64 (47 external Rice and 17 internal Rice) participants for $34,878.
- The *Faculty Career Success* Workshop hosted 75 junior faculty and postdoctoral scholars from Rice University (21) and around the nation (54) on campus for a one day workshop at an estimated participant cost of $11,000.
Materials and Supplies
A total of $63,434 was budgeted for materials and supplies to support the ADVANCE Programs. A total of $15,047 was spent through April.

- Goal one, recruitment of female faculty: $8,328
- Goal two, retention and climate change: $2,214
- Goal three, evaluation, research, and dissemination: $2,917
- Administration: $1,588

Publication/Documentation/Distribution
A total of $5,150.00 was budgeted for Year 2 with $1,084 expended through April. There were three major items:

- CRLT posters ($247)
- NIFP advertisements ($199)
- Faculty Career Success workshop ($281)

Consultant Services
Consultant services were budgeted for $19,226 for Year 2 and $5,309 was spent. The consultant for the Work-Life brochure was the major expense ($5,000).

Subcontract
A subcontract with George Mason University was established to conduct the campus climate survey and analysis of the data. The costs will be shared with the Provost Office. In Year 2, the campus participated in a second climate survey. A university report and individual school reports have been received. Departmental reports are still pending. The cost is $7,806.

Honoraria
Honoraria were budgeted at $39,420 for Year 2 with $19,500 expended. There were 5 events supported through outside speakers.

- Nine honoraria were paid to keynote speakers and panelists for the Negotiating the Ideal Faculty Position Workshop ($5,500).
- The Faculty Career Success Workshop paid 2 keynote speakers ($4,000).
- Department Chair Workshop by Brent Smith was ($5,000)
- The External Advisory Committee members were paid for 2 days of honorarium ($4,400)
- Staff Workshop was supported by Peggy Morrow with a consulting fee of $3,000

Business Meals
Business meals associated with professional development training and community building discussions were budgeted at $2,000 with $1,682 expended.
Computing Services
Computing Services was budgeted at $53,105, and $4,775 was spent on audio visual work. This is a very small amount due to the fact that a tremendous amount of support went to Rice Web Services in Year 1.

Other – External Evaluator
Dr. Lisa Frehill visited campus in January 2008 for the first of two external evaluations. Her fee is $8,250 plus travel.

Un-obligated Funds from Year 2 for Use in Year 3
The majority of Year 2 funding was spent with only $13,000 remaining. However, we carried over $112,000 from Year 1 funds. Overall, we are requesting to carry forward $125,000 to Year 3.

The original budget and proposal planned that we bring in multiple consultants and speakers to the Rice campus for ADVANCE lectures and workshops. In the first two years of the program, we have listened closely to faculty feedback. What we have learned is we can overwhelm an already full campus life with too many speakers and workshops. We have found that it is much more strategic to offer a few key, very well-planned and well publicized events. As a consequence, we have almost $34,000 left in the Honoraria and Consulting Services budget categories.

The other category in which we have significant funding is Computing Services. We spent most of the Year 1 funds in this category, but Year 2 has not required significant expenditure, as we have been carefully considering the best ways to leverage our materials and information to disseminate these effectively. We have leveraged the funds we have effectively in introducing our materials into Connexions and maintaining our website. Our next goal (see below) will be to take a bolder step in dissemination.

We wish to carry over $48,000 in Materials and Supplies and will redeploy these funds to other purposes. We have tried to be very effective and use campus resources and partnering with other offices on campus as often as possible.

Based on faculty feedback, the reports submitted by the External Advisory Board and the External Evaluator, and thoughtful review, we are proposing some new initiatives for Year 3 and are requesting the Year 2 unexpended funds be used for these new initiatives. Our external visitors all recommended we compensate faculty for their time given in support of ADVANCE planning and execution of key goals. As we engage faculty more deeply, we intend to expand this compensation for faculty engagement so that we are not over-burdening our key supportive constituents. Furthermore, in Year 3, we are planning to make the Negotiating the Ideal Faculty Position and the Faculty Career Success workshop materials more accessible and widely disseminated via the internet. We have conducted an extensive review of on-line learning technology that could aid us in dissemination. The RICE Instructional Technology (IT) office has identified the next generation technology for on-line learning. This new technology equipment will be housed on the Rice campus during the month of June. We are
working with the IT office to use ADVANCE workshop materials to test the new technology. If the technology can support our needs, we may help purchase the equipment (after a formal budget request to NSF is submitted and if approval is granted). To create materials that will have the greatest impact, we will hire writers to take our ADVANCE workshop materials and convert them into useful, highly usable modules that can be utilized effectively by others. Whether the indicated equipment (see above) meets our needs or not, we will continue developing the ADVANCE workshop materials for wide dissemination and easy access. Our goal is to have all workshop materials in workbook format, with audio (some video), and handouts available on the internet by the end of Year 3. We are estimating $85,000 for this initiative. Our workshops have been very highly praised by all constituencies — faculty and participants — and have the potential to be leveraged in a variety of other settings. The External Evaluator strongly encouraged further development of materials and expanding the workshop beyond SMET disciplines.

The ADVANCE Recruitment Committee has developed a brief proposal to submit to a private foundation to develop a pilot for changing the faculty recruiting model to a “Talent Scout” model. There are two departments that have agreed to serve as test beds for this idea. We plan to support a faculty “Talent Scout” at $15,000 each and some limited staff time to support this person at $5,000 each ($40,000).

PARTICIPANTS

People
In 2006-07, our first year, the ADVANCE program had twelve faculty committees. In year two of the grant, 2007-08, we reduced this number to four faculty committees with broad charges. Each committee is composed of both male and female faculty who range in rank from assistant to full professor. Committees were composed of 26 faculty members, 5 senior administrators, and 3 professional staff. Each committee had a faculty Chair and a Co-Chair. A new initiative was begun this year, at the recommendation of the External Advisory Board: the faculty Chairs were provided $15,000 to each to help off-set time away from their research programs while leading an ADVANCE Committee. Each of the four faculty chairs used the funds for summer support. The Assessment and Evaluation Committee is Chaired by Mikki Hebl and Kathy Collins. Mikki did not receive the $15,000 because part of her summer salary is already covered by the ADVANCE program. Kathy Collins is in an administrative position. Below is a listing of the four committees, their charge, and the committee members.

Recruitment Committee

I. **ADVANCE GOAL:** Increase the number of female tenure/tenure track faculty at Rice University in Natural Sciences and Engineering at all ranks.

II. **CHARGE:** Examine current processes and practices in the faculty search process to ensure diversity: 1) developing an applicant pool, 2) selection for on-campus interview, 3) faculty on-campus interview, 4) evaluation and decision of who to make an offer, and 5) offer letters. This committee will be actively
engaged in recruitment practices and providing recommendations to the chairs and deans.

III. **MEMBERS**
   a. Chair Mike Wong, Associate Professor of Chemical and Biological Engineering and member of the University Diversity Task Force
   b. Co-Chair Cecilia Clementi, Associate Professor of Chemistry
   c. Pedro Alvarez, Department Chair and Professor of Civil and Environmental Engineering
   d. Junghae Suh, Assistant Professor of Bioengineering
   e. Barry Dunning, Department Chair and Professor of Physics and Astronomy
   f. Giovanni Fossati, Assistant Professor of Physics and Astronomy
   g. Mary Ellen Lane, Assistant Professor of Biochemistry and Cell Biology
   h. Joe Warren, Professor of Computer Science

**Retention/Climate Committee**

I. **ADVANCE GOAL:** Create a positive and welcoming work environment in the Natural Sciences and Engineering schools at Rice University.

II. **CHARGE:** Examine current climate and institutional practices that may make some faculty feel isolated, not valued, and/or the department not an optimal place to work.

III. **MEMBERS**
   a. Chair Pernilla Wittung-Stafshede, Associate Professor of Biochemistry & Cell Biology, and Chemistry
   b. Co-Chair Liliana Borcea, Professor of Computational & Applied Mathematics
   c. Jane Tao, Assistant Professor of Biochemistry & Cell Biology
   d. Brendan Hassett, Professor of Mathematics
   e. Qilin Li, Assistant Professor of Civil & Environmental Engineering
   f. Shelly Harvey, Assistant Professor of Mathematics
   g. Ed Knightly, Professor of Electrical & Computer Engineering
   h. Colin Zelt, Associate Professor of Earth Sciences

**Evaluation and Assessment Committee**

I. **ADVANCE GOAL:** Evaluate the effectiveness of all ADVANCE initiatives, oversee NSF-required data collection and studies, conduct ADVANCE-related gender research, and disseminate results to NSF and national constituencies.

II. **CHARGE:** Ensure the ADVANCE Program is meeting its stated goals and bringing new research on gender issues to the nation.

III. **MEMBERS**
   a. Chair Mikki Hebl, Associate Professor of Psychology and Co-PI ADVANCE
   b. Co-Chair Kathy Collins, Vice President for Finance
   c. George Bennett, Professor of Biochemistry and Cell Biology
   d. Janet Braam, Department Chair and Professor of Biochemistry and Cell Biology
   e. Jennifer George, Professor of Management
   f. Margaret Beier, Assistant Professor of Psychology
   g. Carlos Garcia, Associate General Counsel
Leadership Committee

I. ADVANCE GOAL: Provide leadership in institutionalizing ADVANCE initiatives that change the climate and/or have the potential to change the climate, and increase the participation of female faculty at all levels of leadership at Rice University.

II. MEMBERS
   a. Kathleen Matthews, Dean of Natural Sciences and PI NSF ADVANCE
   b. Sallie Keller-McNulty, Dean of Engineering and Co-PI NSF ADVANCE
   c. Carol Quillen, Vice Provost for Academic Affairs and Professor of History
   d. Kathy Collins, Vice President for Finance
   e. Mary Cronin, Associate Vice President for Human Resources
   f. Mikki Hebl, Associate Professor of Psychology and Co-PI ADVANCE
   g. Richard Zansitis, General Counsel
   h. Ken Whitmire, Professor of Chemistry and Co-PI NSF ADVANCE
   i. Mike Wong, Associate Professor of Chemical and Biological Engineering and member of the University Diversity Task Force
   j. Cecilia Clementi, Associate Professor of Chemistry
   k. Pernilla Wittung Stafshede, Associate Professor of Biochemistry & Cell Biology, and Chemistry
   l. Liliana Borcea, Professor of Computational & Applied Mathematics
   m. Lisa Hall, Assistant to Vice Provost for Academic Affairs
   n. Jan Rinehart, Executive Director, NSF ADVANCE
   o. Kisha McRae-Kennedy, Administrative Coordinator NSF ADVANCE

ORGANIZATIONS

Center for Excellence in Engineering Education (CEEE)
Dr. Richard Tapia is the Director of the CEEE, Co-chair of the University Diversity Task Force, and Chaired Professor of Computational and Applied Mathematics. He is deeply involved with the NSF AGEP Program, Sloan Foundation Fellows, and a NSF Broadening the Participation program. The CEEE’s mission is the recruitment and retention of ethnic minorities. As Co-chair of the University Task Force, he had the opportunity to support the faculty search committee training. Tapia also invited and hosted Drs. Rita Colwell and Valerie Taylor to keynote the Faculty Career Success workshop. ADVANCE also wrote a letter of support for a NSF Innovation through Institution Integration (I3) proposal submitted by the CEEE. The relationship with the CEEE is important and multi-dimensional for ADVANCE.

The Office of Graduate and Postdoctoral Scholars (OGPS)
OGPS has partnered with the ADVANCE program on several initiatives. This office was created Spring 2007 by dividing the Vice Provost for Research and Graduate Studies position into two foci: graduate and postdoctoral scholars, and research. Paula Sanders, Professor of History was named the Dean of Graduate and Postdoctoral Studies. We wrote a joint proposal to the Elsevier Foundation and to
the Graduate Faculty Incentive Fund (FIF). The Elsevier Foundation proposal for postdoctoral support was not funded. The FIF is pending. If funded, we will partner to offer two workshops for assistant professors, postdoctoral scholars, and Ph.D. students in 2008-2009:

1. Grant writing in Fall 2008
2. Setting Expectations and Resolving Conflicts in Graduate Education: Train-the-Trainer workshop in the Spring 2009. This is a new Michigan Tech program.

As the NSF ADVANCE initiatives are institutionalized, the OGPS will use the *Negotiating the Ideal Faculty Position* workshop as a model for the University and offer the topics as lunch discussions for Ph.D. students and postdoctoral scholars.

Dr. Bridgett Gorman, Associate Professor of Sociology, was awarded an ADVANCE Research Mini Grant for “Gender Differences in Graduate School Experiences.” She proposed studying the Schools of Natural Science, Engineering, Humanities, and Social Science. Dr. Sanders provided additional funding to include the Schools of Music, Business, and Architecture.

The *School of Social Sciences* is planning to offer a junior faculty workshop on academic success. Rice ADVANCE provided agenda, evaluations, and presentations from the NSF *Faculty Career Success* workshop.

**COLLABORATORS**

*MD Anderson Cancer Center*

The ADVANCE program partnered with the Associate Vice President for Women Faculty, Dr. Elizabeth Travis, to host Dr. Nancy Hopkins in the Fall of 2007. The Rice faculty were invited to Dr. Hopkins’ open lecture, and the Leadership Committee was invited to eat lunch with the MD Anderson Women Faculty Program Advisory Board. We are planning to co-host Virginia Valian in September 2008.

*External Evaluation*

Dr. Lisa Frehill made her first evaluation visit January 13-16, 2008. She met with:

- 7 administrators (Provost, Vice Presidents, Associate Vice Presidents, General Counsel)
- 3 deans (1 non-STEM)
- 14 department chairs (3 non-STEM)
- 57 faculty
- 3 staff

Her debrief at the end of the visit to the Provost, Eugene Levy; Vice President for Finance, Kathy Collins (ADVANCE Leadership committee member and responsible for collecting the NSF Annual Data); Sallie Keller-McNulty, Co-PI and Dean of Engineering; Kathleen Matthews, PI and Dean of Natural Sciences; and Jan Rinehart, Executive Director ADVANCE, was focused on three main areas. (The brief report has been previously submitted and the full report will be submitted when received):
1. Strategic partnerships: Maintaining Diversity Taskforce connections and forging additional partnerships with groups, such as the Faculty Senate and the Center for the Study of Women, Gender, and Sexuality.
2. Expanding programming to non-STEM schools.
3. Establishing estimates of impact to help in the planning of institutionalization.

ACTIVITIES AND FINDINGS

Recruitment Activities

Negotiating the Ideal Faculty Position (NIFP) Workshop
The second annual NIFP workshop hosted 64 female postdoctoral scholars and Ph.D. students. Ethnic minority (African American and Latinas) represented 31.3% of the participants.

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Table 1 – NIFP participation by Race

Gilda Barabino, Professor of Biomedical Engineering at Georgia Tech was the keynote speaker on Sunday evening, and Anthony Johnson, Professor of Physics at University of Maryland Baltimore County was the keynote speaker at the Tuesday luncheon. Both speakers talked about race, gender, STEM fields, academic careers, and how the four issues intersect. There were rich conversations around both talks. It was a unique opportunity for majority women to hear issues of race. Having majority women participate in race discussions is probably as important to equity as having men participate in discussions about gender.

The panels were diversified by inviting faculty from outside Rice to participate. They presented information on national labs, public universities, and different viewpoints for all panel discussions. They also provided diverse role models for the workshop participants.

- Stephanie Adams, University of Nebraska Lincoln
- Sandra Begay-Campbell, Sandia National Lab
- Carlos Chavez, Arizona State University
- Sherry Woods, University of Texas at Austin
- Bevlee Watford, Virginia Tech University
- Marilyn Fogel, Carnegie Institution of Washington
- Obdulia Ley, Texas A&M University
- Karen Butler-Purry, Texas A&M University
A pre-online survey was given with 100% participation. The post-event survey had 89% participation. The most important data as to the value and impact of the workshop are in the three questions below. If Rice is to adopt a “Talent Scout” model for faculty recruiting, the NIFP workshop will need to be viewed as a recruitment tool. The third question demonstrates to the departments that getting prospective faculty to Houston and the Rice campus has great impact in their decisions to apply and consider an offer to join the faculty.

How confident were you that a faculty position was a good match for your career interests?

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<tr>
<th>BEFORE the Workshop (2.89)</th>
<th>AFTER the Workshop (3.75)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident to Extremely confident – 59% (33/56)</td>
<td>Confident to Extremely confident – 88% (49/56)</td>
</tr>
</tbody>
</table>

How interested were you in pursuing a faculty position at a major research (Research 1) institution?

<table>
<thead>
<tr>
<th>Pre Workshop survey (In terms of faculty responsibilities…describe your preferences…)</th>
<th>BEFORE the Workshop (3.16)</th>
<th>AFTER the Workshop (3.63)</th>
</tr>
</thead>
<tbody>
<tr>
<td>61% wanted MORE research than teaching and teaching</td>
<td>Interested to Extremely interested – 68% (38/56)</td>
<td>Interested to Extremely interested – 78% (43/56)</td>
</tr>
</tbody>
</table>

How interested were you in pursuing a faculty position at Rice University?

<table>
<thead>
<tr>
<th>BEFORE the Workshop (2.04)</th>
<th>Interest Scale</th>
<th>AFTER the Workshop (3.38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Interested</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>Very Interested</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>Extremely Interested</td>
<td>15</td>
</tr>
<tr>
<td>18/55 33%</td>
<td></td>
<td>40/55 73%</td>
</tr>
</tbody>
</table>

Faculty feedback was positive. There were 65 Rice faculty (29% of total STEM faculty) and 10 non-Rice faculty who participated. Lisa Frehill, external evaluator, provided a very positive report about the NIFP and its institutionalization.

We queried the departments (12 of the 14 responded) to determine if and how they engaged the NIFP workshop participants in their faculty searches. It is apparent some of the departments used the workshop as a recruitment process, but some did not effectively connect the search to the participants. The reason most often cited by the departments was that the women visiting did not match the research area targeted for that year.
For Fall 2008, the NIFP will expand to the neuroscience subfield within psychology. Our strategy is slow expansion to ensure we pay very careful attention to feedback and focus on fields similar to STEM so panel discussions still apply to all workshop participants.

National Database of Female Ph.D. Students and Postdoctoral Scholars

As part of the NIFP workshop, the Rice ADVANCE Program established a database of CV’s from applicants who wished to share their materials with institutions searching for science and engineering faculty. To date, 1368 out of 1447 (95%) applicants and participants have chosen to include their materials in the database. The database was advertised by mailing a postcard to over 600 institutional contacts and putting the information on multiple list-serves. The ADVANCE office has refined the site, which is searchable by field, name, research area, and school.

The ADVANCE office received multiple requests from faculty about opening the database to additional women. A “contributor” designation was created in response to this request. The database continues to be open to those who want to apply for the NIFP workshop and to those who only wish to contribute their CV information.

In 2007, to increase the diversity of the database and workshop participants, the ADVANCE staff created a mailing list of over 600 faculty members who are U.S. ethnic minorities and/or who participate in an ethnic minority network through programs such as AGEP, Sloan Fellows, AMP, and/or GEM. We also used a list of minority-focused list-serves to post NIFP information and faculty positions. As a result, 14% of the database is minority.

Database Indicators of Success

The database website went live in November 2006. It was updated with 2007 applicants in September 2007. Updating the database in the early fall proved to be a much better time frame for search committees to make use of the resource, as evidenced from the usage data. To date, there have been over 700 visitors representing 98 different universities. Sixty-two percent report they are part of a faculty search committee. This activity demonstrates a national interest in diversifying the faculty as well as the need for a national candidate database. (The database can be found at http://www.advance.rice.edu/database/.) Table 4 shows the wide range departments that have used the database from its inception in 2006.
Table 4: Rice ADVANCE Database Usage by Department 2006-07

<table>
<thead>
<tr>
<th>Dept</th>
<th>AE</th>
<th>ApplMath</th>
<th>BIOE</th>
<th>Civ/Env</th>
<th>ChemE</th>
<th>CS</th>
<th>ENGR</th>
<th>ECE</th>
<th>ME/MatS</th>
<th>Stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Rice</td>
<td>2</td>
<td>9</td>
<td>9</td>
<td>21</td>
<td>14</td>
<td>54</td>
<td>30</td>
<td>31</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>Rice</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>23</td>
<td>23</td>
<td>13</td>
<td>8</td>
<td>16</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>13</td>
<td>21</td>
<td>44</td>
<td>37</td>
<td>67</td>
<td>38</td>
<td>47</td>
<td>35</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Rice</td>
<td>20</td>
<td>1</td>
<td>26</td>
<td>9</td>
<td>1</td>
<td>26</td>
<td>28</td>
<td>6</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Rice</td>
<td>5</td>
<td>5</td>
<td>17</td>
<td>16</td>
<td>4</td>
<td>18</td>
<td>39</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>6</td>
<td>43</td>
<td>25</td>
<td>5</td>
<td>44</td>
<td>67</td>
<td>9</td>
<td>23</td>
<td>8</td>
</tr>
</tbody>
</table>

Retention and Climate Activities

Mentoring

A. Triad Mentor Program for Female Faculty in STEM

The Triad Mentor Program is designed to match one senior female faculty member with two junior female faculty members from STEM fields. The matches are done outside the women’s departments, but similar research interests are considered during the matching process. There are six groupings with 15 female faculty (6 senior and 9 junior) involved. Three senior women have just one mentee, and three senior women have two junior mentees. The three with only one junior faculty are special circumstances. One is becoming department chair and is a center director. She can manage one mentee, but not two. One senior woman was assigned two juniors, but then the Dean requested she spend special time with one of the women. This required we find a new senior woman for the other junior faculty member. A total of 9 unique senior women (41%) have mentored in the past two years, and a total of 15 unique junior women (54%) have been mentored. There are 3 senior women and 5 junior women who have participated both years.

<table>
<thead>
<tr>
<th>Female Faculty</th>
<th>2006</th>
<th>2007</th>
<th>Total Unique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total STEM Sr. women</td>
<td>20</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Sr. mentors</td>
<td>6</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>% Sr. Mentors</td>
<td>30%</td>
<td>27%</td>
<td>41%</td>
</tr>
<tr>
<td>Total STEM Jr. women</td>
<td>13</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Jr. mentees</td>
<td>11</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>% Jr. participants</td>
<td>85%</td>
<td>53%</td>
<td>54%</td>
</tr>
</tbody>
</table>

Speed Mentoring for All Junior Faculty

ADVANCE offered a pilot Speed Mentoring Event to determine if this would be a valuable tool for mentoring all junior faculty. There was good response for a first
time event, with 18 senior faculty and 16 junior faculty responding. However, only 9 junior faculty came, which left 9 senior faculty with no one to talk to but each other. In the assessment, there was some value for the junior faculty, but the activity was more valued by the more junior faculty (1 to 3 years) than the more senior junior faculty (4 to 7 years). The interesting issue that continually arises is the perception of senior faculty that their door is always open and all junior faculty have to do is come and ask. Junior faculty continue to struggle with asking questions of senior faculty because they are perceived to be busy, and the junior faculty continue to be concerned about how their questions are perceived. We will continue to work on how best to structure broad mentoring opportunities in the schools to address faculty needs.

Informal Lunch Discussions

The year began with a Female Faculty Welcome at the home of Dean Sallie Keller-McNulty. There were 18 female faculty, 3 spouses, 4 staff members, and 5 children who participated. It was a wonderful way to begin the year.

Informal Discussions for female faculty are held each month. The faculty decide topics, a faculty member leads the discussion, and lunch is served. This initiative began in year one and continues to be popular with the faculty. A couple of books were used this year, but with measured success. It is hard to get a book read, and it seems more relaxed if faculty can come together for an informal discussion. Most of the women faculty know each other now. In Year 1, most of the women faculty only knew those in their department and those with whom they collaborate in research.

In total this year, 22 unique women participated in lunch discussions. Of these, 7 (35%) were senior, 2 (100%) Deans, and 13 (87%) junior faculty, and 5 non-female STEM visitors. Most of the visitors were male STEM faculty who came to the discussion about Letter Writing Biases. These lunch discussions continue to be most appealing to the junior faculty.

<table>
<thead>
<tr>
<th>Discussion of Leadership Conference</th>
<th>Ching-Hwa Kiang</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Mentor book discussion</td>
<td>Pernilla Wittung-Stafshede</td>
</tr>
<tr>
<td>Self Promotion and Advocacy</td>
<td>Kathy Matthews</td>
</tr>
<tr>
<td>Life After Tenure</td>
<td>Richard Zansitis</td>
</tr>
<tr>
<td>Legal Issues</td>
<td></td>
</tr>
<tr>
<td>Difficult Conversations book discussion</td>
<td>Mikki Hebl</td>
</tr>
<tr>
<td>Letter Writing Biases</td>
<td>Jan Rinehart</td>
</tr>
<tr>
<td>Solos-JoAnn Moody article</td>
<td>Lisa Hall</td>
</tr>
<tr>
<td>Mentoring</td>
<td></td>
</tr>
<tr>
<td>Work-Life Balance</td>
<td></td>
</tr>
</tbody>
</table>

PhD and Postdoctoral Scholars Lunch Discussions

Many female postdoctoral scholars and Ph.D. students participated in the Negotiating the Ideal Faculty Position workshop and the Faculty Career Success workshop in Spring 2007. They continue to ask for more information and
opportunities to learn about academic positions. In response to these requests, the ADVANCE Program began offering monthly seminars for the women and their guests (both men and women) in January 2008. Spring topics focused on the academic job search. There have been 30 different women participate in the lunch discussions. Thirteen different faculty have led discussions on:

- How to Negotiate with your Spouse/Partner when Both are Looking for an Academic Position
- Job Talks with Faculty Feedback
- Department Chair Interviews
- How to Think Strategically About the Job Search
- Review of Research Statements

PROFESSIONAL DEVELOPMENT ACTIVITIES

**Discourse on Leadership and Diversity**

On Friday, March 14, 2008, the ADVANCE Program hosted the spring Discourse on Leadership and Diversity lecture. We partnered with the Provost and the Schools of Social Science, Humanities, Engineering, and Natural Sciences to host Dr. Monica Biernat. Her research efforts focus on the areas of stereotyping and prejudice. She has been concerned with topics ranging from stereotype development and change, to the effects of group context (numerical presence of minority relative to majority group members) on memory and judgment, to examining the role of American values (Protestant Work Ethic and egalitarian values) in both promoting and defusing prejudice. The lecture had almost 100 people in attendance and can be viewed on the web at [http://cohesion.rice.edu/CentersandInst/Advance/emplibrary/rice-advance-sp08.ppt](http://cohesion.rice.edu/CentersandInst/Advance/emplibrary/rice-advance-sp08.ppt)

While on campus, she met with some of the ADVANCE Leadership Committee and had lunch with University Department Chairs. Both informal conversations were very useful to the faculty and administrators. There were seven chairs who participated in the lunch discussion. The conversation was centered on institutional and structural biases. This topic seemed to be of great interest to the chairs.

**Senior Female Faculty Development**

This area continues to challenge us for best strategies to address the women’s interests and needs. President Shirley Jackson had brunch with the senior women in STEM while she was on campus. We believe the University of Washington model of mentoring the senior women with notable female scientists and engineers who are invited to campus for lectures is a workable model for Rice, but have yet to formalize it.
Faculty Career Success Workshop

The ADVANCE Program hosted the Faculty Career Success Workshop on Saturday, April 19, 2008 from 8:30-5:00 on the Rice University campus. The goals were to:

1. Inform junior faculty about academic career issues such as tenure and promotion process, strategies to help build their research programs, and balancing their lives.
2. Create relationships between junior faculty at regional and peer institutions for possible collaborative research relationships.
3. Provide a national view of STEM fields and their future.

The workshop was open to both female and male faculty. After the female only Faculty Career Success workshop in Spring 2007, the junior faculty feedback was that they did not understand having female-only events when their male colleagues had the same pre-tenure and research issues. They also reported it created an atmosphere of inequity for them in their departments.

The ADVANCE Retention and Climate Committee did believe it was of utmost importance for the audience to be majority female and ethnic minority men. So, targeted and strategic advertisement and invitations were planned. These strategies included:

1. The committee identified “peer” and local institutions where research collaborations and institution culture were similar. These institutions were the University of Texas at Austin, Texas A&M University, University of Houston, Tulane University, and Louisiana State University. The ADVANCE office went online and made a mailing list of every junior faculty member in STEM at these institutions who was female and/or ethnic minority male. This was not an exact process, and there was a mixture of ethnicities in the group. Each faculty member was mailed an invitation and then two follow-up emails were sent between January 2 and March 1, 2008.

2. The department chairs at the same institutions were also mailed invitations asking them to encourage their junior faculty to participate; two follow-up emails were sent.

3. Deans at the targeted schools also received an invitation to encourage their junior faculty, with two follow up emails.

4. The ADVANCE office developed a listing of female, ethnic minority, and majority faculty involved in mentoring under-represented groups in STEM. This group of over 600 also received an invitation asking them to encourage the junior faculty they are mentoring to attend the workshop.

5. All past participants from the 2006 and 2007 Negotiating the Ideal Faculty Position workshop were invited.
6. All Rice junior faculty and postdoctoral scholars were invited.

Dr. Rita Colwell, Distinguished Professor, University of Maryland College Park and Johns Hopkins University Bloomberg School of Public Health; Chairman, Canon US Life Sciences, Inc; and past Director of the National Science Foundation was the morning keynote speaker. Her topic was “Women, Science, and Politics.”

Dr. Valerie Taylor, Department Head and Royce E. Wisenbaker Professor in Computer Science at Texas A&M University was the lunch keynote speaker. Her talk was entitled, “To Agree or Not to Agree: Art or Science.”

There were 90 total registrations; 75 who participated; 12 senior faculty who served as panelists, keynote speakers, and committee members. Fifty-eight percent of the participants were female, 35% male, and 7% did not report. Eighty-six percent were assistant professors in a wide variety of STEM fields, and 14% were postdoctoral scholars. Sixty-five percent of the participants were from Texas universities (Rice (21), University of Houston (6), Texas A&M University (12), University of Texas at Austin (8), University of Texas at Arlington (1), University of Texas at San Antonio (1)) and 35% were non-Texas schools (Auburn University (1), Boston University (1), Carnegie Institute (1), Cornell (1), Louisiana State University (8), New Mexico State University (1), North Carolina A&T (1), Tulane University (2), Tuskegee University (2), University of Massachusetts (1), University of Puerto Rico (1), and Yale University (1)).

**Evaluation**

The participant survey asked for feedback on each discussion on four scales: Informative, Useful, Unknown, Inspiring. Each scale was measured on a 5 point Likert scale. Every workshop was rated above a 3.3. The only 3.3 and 3.6 reported were on the Unknown scale. One participant offered this explanation,

> “Although most issues and solutions were known before I attended this conference, it is still comforting to hear others struggling as I have been. Being a quiet, "yes" docile assistant professor sometimes needs a place to cuddle the like together. Thank you for putting this conference together.”

When asked if they would encourage others to attend, a very high 4.6 was reported. The highest ranked panel on the Inspirational scale (4.7) was the final panel of participant questions. Rita Colwell and the Deans’ discussion on Tenure and Promotion were the highest on the Informative scale (4.5 and 4.6 respectively). The Tenure and Promotion (4.6) and final panel of participant questions (4.6) were highest on the Useful scale.
**Faculty Awards Database**

In order to build a systematic approach to the recognition of female faculty, the ADVANCE Program is developing a Faculty Awards Database. The database will have Rice University awards, national awards (not specified by discipline), and discipline-specific awards. An undergraduate student worker has been working on this project for three semesters. We anticipate its completion by end of Fall 2008. Bioengineering has already developed a database for their department that is being used as a model.

After much discussion, faculty would like the Awards Database accessible on the web in two formats:
- All Awards by discipline
- Sorted by age of prospect

**RESEARCH ACTIVITIES**

**Faculty Exit Survey**

ADVANCE is currently conducting an Exit Study on tenure-track faculty. We are: 1) looking at reasons men and women leave positions in academia, 2) promoting good practices within academia surrounding exits, 3) testing a turnover model of academics, and 4) identifying the reasons why people leave in general. At present, questionnaires have been sent to all Rice University tenure-track faculty who have left voluntarily (before retiring) within the past ten years. We are not interested in looking at reasons people specifically leave Rice University; rather, we are looking for general reasons people leave academia and whether differences arise between men and women. At the current time, we are working with Texas A&M University, Agnes Scott University, and RPI. We continue to recruit other schools to participate. We would like a large enough response rate that the data are meaningful.

**Mini grants**

Each year of the NSF ADVANCE grant, Co-PI Hebl has conducted a Mini-Grant Research competition for Rice faculty, students, and staff. The total amount is typically between $5,000 to $6,000 per project. Two mini-grants were awarded in Spring 2007 and two were awarded in Fall 2008. At this time, none of the research is complete, so findings are not presented in this Annual Report, but brief progress reports are in the Appendix.

1. **Investigation of the Under-representation of Women in the G.R. Brown Teaching Awards** - Ann Saterbak, Lecturer and Director of Laboratory Instruction, Department of Bioengineering

   In the last eight years, only three of the 28 unique winners (11%) of the G.R. Brown Award for Superior Teaching and the G.R. Brown Prize for Excellence in Teaching have been women. In addition, none of the winners has been a woman in the science or engineering faculty, whereas eight men in these areas have been winners. The purpose of this project is to investigate the reasons for the under-representation of women faculty, particularly the
women faculty in science and engineering, in the most prestigious teaching awards at Rice University. The major objective of this grant is to both ensure that the selection process of winners for this award is unbiased and that women in the STEM fields are excelling in teaching so as to be viable candidates for these awards. Depending on the outcome of the research, corrective action can be taken at the institutional level to ensure both goals are met.

2. **Gender Differences in Graduate School Experiences** - Bridget Gorman, Assistant Professor of Sociology
The broad purpose of the project is to shed new light on the question of why women with PhDs in science and engineering enter academia at lower rates than their male peers. Taking Rice as a case study, we broadly assess men and women’s graduate school experiences and future career plans. In particular, we investigate whether gender differences exist in graduate school experience at Rice, and, if so, whether these differences translate into unequal outcomes for men and women graduate students. To explore these questions, we selected first-year graduate students (2007-2008 cohort) from four schools (Natural Sciences, Engineering, Social Science, and Humanities) as participants. As women are present in higher numbers in the Social Sciences and Humanities than in the Natural Sciences and Engineering, we hypothesized that this comparative model would help us identify whether more gender-balanced programs positively influence women’s experiences in graduate school. Additionally, this comparison would capture any existing differences in departmental and disciplinary cultures that may aid or hinder women’s graduate training. We will follow these cohorts through the third year of their programs to assess gender differences in MA/MS attainment (when applicable), attrition rate, commitment to attaining a PhD, and aspirations to a career in academia. To capture the complexity of men and women’s experiences, we utilize a mixed methods approach that combines quantitative survey data with qualitative data from focus groups and in-depth interviews. Our long-term goals for this project are two-fold. First, we intend to use the findings from this study to improve the status of female graduate students in science and engineering at Rice. Second, we intend to build on this single-site study by applying for NSF funding to conduct a nation-wide study of gender and performance in graduate school.

3. **Predictors of Majoring in Science and Engineering** - Margaret Beier, Assistant Professor of Psychology
Differences in the number of male and female faculty in science, technology, engineering, and mathematics (STEM) disciplines can be examined as a function of the number of women who pursue these academic fields of study. Previous research suggests that differences in confidence, interests, and experiences are related to the relatively greater number of men than women in undergraduate and graduate STEM studies as well as STEM professions (Eccles, 1994). The goal of this research was to identify the individual
difference traits and STEM-related experiences that predict pursuit of academic training in STEM. Although researchers have examined individual differences and experiences as predictors of commitment to STEM disciplines and attrition from STEM, this study incorporates both person (gender, ability, self-confidence) and situational components (specific experiences in STEM classes) into a longitudinal design. The results of this study will potentially inform universities concerned about the attrition of women and men from STEM disciplines and can also be used to develop interventions to better integrate people into STEM majors, and to better prepare students for these fields of study.

4. The Role of Emotion Perception in Explaining Gender Differences in High-Stakes Tests – Dan Beal, Assistant Professor of Psychology

The current project's goal is to understand how gender differences in emotion perception may play a role in the high-stakes testing process. High-stakes testing, particularly in mathematics, plays a pivotal role in determining who enters graduate STEM programs (Halpern et al., 2007). A great deal of research has noted continuing gender differences in quantitative sections of graduate entrance exams such as the Graduate Record Exam (GRE); (Halpern & LeMay, 2000). Although the reasons for these differences vary along a wide spectrum, one area that has received relatively little attention is how the genders differentially approach and react to the testing environment. One exception to this trend is recent work on stereotype threat (Schmader, Johns, & Forbes, 2008). This research suggests that the culturally present stereotypes, e.g., that males are "better at math" than females, can often inhibit female performance, regardless of actual level of ability. Specifically, these stereotypes are thought of automatically and somewhat uncontrollably when women engage in a high-stakes math-testing situation. Resulting anxiety, interfering cognitions, and lowered self-efficacy contribute to poor test performance for women, even when there are no differences in actual ability (Spencer, Steele, & Quinn, 1999). Stereotype threat therefore is considered a possible factor contributing to the gender disparity in the top levels of STEM fields.

PROJECT TRAINING AND DEVELOPMENT

Retention and Climate Training Opportunities

Staff Development Awareness Training
Jan Rinehart in conjunction with an outside facilitator, Peggy Morrow, hosted a departmental administrator staff development workshop on gender equity. The goals of the workshop were to:
1. Raise awareness of how we have been socialized to be male or female
2. Understand what gender schemas and the resulting biases
3. Understand how gender schemas affect the workplace
4. Provide participants with tools to help manage biases as they become more aware of them and their impact on faculty and staff in the departments.

There were case studies developed and discussed during the workshop. Many reported they left with a raised awareness of gender schemas. It was clear, however, that a facilitator is not what is needed, but a gender schemas expert. If another workshop is hosted, one of the Valian tutorials will be utilized and a complete reorganization will occur.

**Center for Research on Learning and Teaching (CRLT) Players**

The University of Michigan CRLT players presented the *Faculty Mentoring* and the *Search Committee* sketches on campus in September 2007. ADVANCE advertised this heavily and was greatly disappointed when only 45 participated. The evaluations, however, were very good. One department chair thought we should have them come back to campus. The dialogue was rich with many positive comments from the faculty participants. There were groups of faculty from single departments that found the dialogue of great interest for their department.

In the evaluation, the participants were asked to respond to questions about usefulness of the discussion and agreement to a series of statements. The *Search Committee* sketch has similar ratings for men and women. The women generally agreed more strongly with the questions than the men except on the question, “The issues raised in the performance reflected experiences of my colleagues,” (4.7 for men and 4.0 for women). However, on the *Faculty Mentoring* sketch, there was much more disparity in female and male ratings. The samples are very small, so it is recognized this is not a statistical study. The Likert scale ranged from 1=Strongly Disagree to 5=Strongly Agree. But these are interesting:

<table>
<thead>
<tr>
<th>Question</th>
<th>Female M (3) responses</th>
<th>Male M (4) responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>The issues raised in the performance reflected my personal experiences</td>
<td>4.2</td>
<td>2</td>
</tr>
<tr>
<td>The issues raised in the performance reflected experiences of my colleagues</td>
<td>4</td>
<td>2.7</td>
</tr>
<tr>
<td>The issues raised in the performance reflected behaviors/issues I have observed</td>
<td>4.7</td>
<td>2.3</td>
</tr>
</tbody>
</table>

**OUTREACH ACTIVITIES**

*Proposals sent to NAE CASEE and SWE AWE Projects*

Two Rice faculty, Mikki Hebl and Margaret Beier, submitted (and were awarded) proposals to develop Overviews and Information Sheets on Gender Equity in STEM Education, Outreach and Retention. This Call came from the SWE (Society of Women Engineers) AWE (Assessing Women and Men in Engineering Project)
partnership and the NAE (National Academy in Engineering) CASEE (Center for the Advancement of Scholarship on Engineering Education). These overviews and information sheets will be used by instructional professionals in K-12, undergraduate classrooms, and professionals and volunteers engaged in K-12 outreach activities.

**Rinehart asked to be NAE Extension Specialist**
Rinehart responded to a request to apply for the NAE CASEE Extension Specialist position to work with technical associations as they design new curriculum for engineering students.

**NIFP to Harvard**
One of this fall’s *Negotiating the Ideal Faculty Position* workshop participants was a postdoctoral scholar from Harvard University. Three days after her return to Harvard, she hosted 40 postdoctoral scholars in an abbreviated workshop. She reported it was very well received.

**SACNAS**
SACNAS has a new program designed to provide an opportunity for minority postdoctoral scholars to present posters at the national SACNAS conference. They requested access to the National Postdoc and Ph.D. Database and used it to advertise this new program.

**Faculty Women’s Club**
Rinehart presented to 25 women who are members of the Faculty Women’s Club (for faculty spouses) on the ADVANCE Program. A Chemistry faculty member suggested she be invited. There was a lively discussion. The majority of the women had advanced degrees, about half were in a STEM field, and several had graduate degrees in a STEM field.

**Moody booklets to junior faculty in STEM training**
ADVANCE supported the New Faculty Orientation in the Schools of Natural Science and Engineering by providing the Moody booklet “Demystifying the Profession: Helping Junior Faculty Succeed.”

**University of Ontario**
Canada is developing a postdoctoral scholar and Ph.D. student workshop to encourage academic careers. The faculty contact worked closely with the ADVANCE program to build on our experience from the *Negotiating the Ideal Faculty Position* workshop. She was provided presentation handouts, presentation slides, evaluation, and a discussion about what was learned through our program. She successfully hosted a workshop and is planning to expand across Canada.

Rice ADVANCE materials on recruitment and retention were sent to *University of California-Irvine* to take to the Women in STEM conference in Germany.
Rinehart consulted with a faculty member from *University of Houston-Clear Lake* about a proposal to bring in working women back to college for a career in STEM.

Rinehart helped develop an institutional overview for a *NSF pre-award visit at Iowa State University for a research center*. The Rice ADVANCE initiatives were presented as part of the educational and institutional value to diversity.

**PRODUCTS**

**Publications and Products**

**American Society of Engineering Education (ASEE) Paper**

A paper was submitted and accepted to ASEE titled “Demystifying the Faculty Search Process: Increasing Women’s Pursuit of Academic Careers through Knowledge and Networking.” Authors are Jan Rinehart, Sherry Woods, and Rebecca Richards-Kortum. This paper describes the *Negotiating the Ideal Faculty Position* workshop and how it can impact the early identification of future faculty candidates. Data are presented on the follow-up surveys completed by the workshop participants. The longitudinal data show these type workshops have had a strong impact on the participants’ career paths, with a high percentage pursuing (and succeeding in) academic careers. There are multiple goals for the workshop, but the goal of changing the faculty recruiting process is one of the most interesting for universities trying to diversify their faculty. What models of recruiting are most effective and how can we change our “search committees” from “envelope opening” to true “search” committees? Can workshops provide a model and not just be seen as another workshop to “fix” the women? Can a nationally accessible database of female postdoctoral scholars and Ph.D. students provide search committees with quality applicants? Will search committees use such a source to search for faculty candidates?

**Women in Engineering ProActive Network (WEPAN) Paper**

A paper titled “Promoting Institutional Change via the Faculty Search Process: Career Workshops and a National Database” was submitted and accepted to the
WEPAN Conference Proceedings. Authors are Jan Rinehart, Sherry E. Woods (University of Texas at Austin) and Rebecca Richards-Kortum. The paper focuses on the Negotiating the Ideal Faculty Position workshop and how other program directors and faculty can replicate this type workshop on their campus. Longitudinal data will be shown that demonstrates these workshops have a strong impact on the participants’ career paths, with a high percentage pursuing academic careers.

Science Manuscript Submitted
A paper titled “New Approaches to Recruiting and Ensuring the Success of Women Faculty in Engineering” was submitted to Science in April 2008 by Rebecca Richards-Kortum. This paper discusses the Negotiating the Ideal Faculty Position workshop.

Alumni Leadership Conference
On April 24th, Carol Quillen, Vice Provost for Academic Affairs, presented on “Diversity and the Vision for the Second Century.” NSF ADVANCE was part of this presentation and discussion.

Round Table Research Discussion
Mikki Hebl led a discussion on the research being conducted at Rice University through the ADVANCE Program at the NSF PI Meeting in May 2008. Climate data from 2003 and 2007 were presented in abbreviated form.

American Psychology Society Poster
Margaret Beier, ADVANCE Mini Grant recipient, presented a poster at the APS national conference on her ADVANCE research project.

Connexions for Dissemination of ADVANCE Workshop Materials
Connexions is an online repository and set of software tools for collaboratively developing, freely sharing, and quickly publishing educational content. The Content Commons contains educational modules that can be grouped together into larger courses. The ADVANCE Program has two years of presentations and hand-outs from the Negotiating the Ideal Faculty Position and the Faculty Career Success Workshops online at http://cnx.org/content/col10442/latest/ and http://cnx.org/content/col10444/latest/ Individuals can go to these sites, change the materials, group the materials as desired, and/or use the materials directly. There are currently over 4000 educational modules in Connexions. This concept is on the cutting-edge of how technology and teaching information are being shared. The 2008 Faculty Career Success workshop materials are not yet available. Workshop materials can also be viewed at: NIFP http://www.advance.rice.edu/negotiatingtheidealfacultyposition/resources.html and FCS http://cohesion.rice.edu/centersandinst/advance/fsf.cfm?doc_id=12262
ADVANCE Library

A small group of books has been purchased by the ADVANCE Program. These are available for check out to any Rice employee. The listing can be found at http://cohesion.rice.edu/centersandinst/advance/resources.cfm?doc_id=11324

CONTRIBUTIONS

Within Discipline

Developed databases for posting faculty positions
Lisa Hall and the ADVANCE office have assembled a listing or organizations focused on ethnic minority PhDs to use in advertising faculty positions across all fields. The ADVANCE office has also developed a database of over 600 individual contacts focused on under-represented groups in STEM.

Other disciplines

ADVANCE has partnered extensively on campus with organizations and schools to move the initiatives across campus. The Faculty Career Success workshop replication in the School of Social Sciences and partnering with the University Diversity Task Force are two examples.

Human Resource development

Staff Gender Awareness training, when reorganized, can be offered as a University-wide staff training.

REFERENCES


APPENDIX

1. Research mini grant reports
   a. Investigation of the Under-representation of Women in the G.R. Brown Teaching Awards
   b. Gender Differences in Graduate School Experiences
   c. The Role of Emotion Perception in Explaining Gender Differences in High-Stakes Tests
   d. Predictors of Majoring in Science and Engineering

2. American Society of Engineering Education paper

3. Women in Engineering ProActive Network paper

4. ADVANCE Faculty Search Committee Presentation