What is Mizzou ADVANCE?

Mizzou ADVANCE seeks to enhance the careers of faculty and develop a more diverse workforce through the advancement of women faculty in science, technology, engineering and mathematics (STEM). The three-year grant (2007–2009) aims to create new institutional practices to improve gender equity in STEM fields by:

- Developing a group of leaders who will be a resource on equity to MU administrators and faculty
- Engaging faculty and administrators in discussions on best practices for gender equity
- Developing a mentoring system for tenured STEM faculty
- Identifying new ways to promote the advancement of women in STEM
- Collecting institutional data on campus climate, support and resources for women's advancement

The program is funded by a $499,000 National Science Foundation (NSF) ADVANCE Grant (Award Number 0618977), with matching funds from MU. MU offices funding the initiative include:

- Office of the Chancellor
- Office of the Provost
- College of Agriculture, Food and Natural Resources (CAFNR)
- College of Arts and Science (A&S)
- College of Engineering
- Department of Women's & Gender Studies

The Mizzou ADVANCE initiatives are:

- Mentoring: The Mizzou ADVANCE Mentoring Program matches senior STEM faculty with other faculty and administrators for career guidance and support.
- STRIDE: The STRIDE committee is a team of senior STEM faculty and administrators who provide information to the MU community about institutional practices that increase the success of women faculty.
- Theatre: The Interactive Theatre program presents issues related to gender equity in STEM in a manner that facilitates dialogue and engages individuals in active learning.
- Research: The Research component collects and reports institutional data indicators on gender equity and assesses the career trajectories of faculty.

Why Mizzou ADVANCE?

Despite progress over the past few decades, the number of women faculty in STEM fields is still considerably smaller than that of men. This discrepancy remains despite the fact that the numbers of women being trained in many of these disciplines is often comparable to that of men.

According to a report from the National Academies' Beyond Bias and Barriers (2006), the small number of women faculty at major research institutions is an “issue of national concern.”

At MU, the status of female faculty in STEM departments is generally consistent with national data. Indeed, some departments, such as chemistry and physics, are above the national average in numbers of senior women faculty. But it is clear that there is room for improvement, as shown below.

| College of Agriculture, Food & Natural Resources |
| Animal Science |
| Biochemistry |
| Food Science |
| Plant Sciences |
| College of Arts and Science |
| Biology |
| Chemistry |
| Geology |
| Mathematics |
| Physics |
| Statistics |
| College of Engineering |
| Biological Engineering |
| Chemical Engineering |
| Civil & Environmental Engineering |
| Computer Science |
| Electrical & Computer Engineering |
| Industrial & Manufacturing Systems Engineering |
| Mechanical & Aerospace Engineering |

Increases in the number of women faculty, and those in leadership positions such as chairs and deans, will have many benefits for our campus. Perhaps the most important of these will be to provide outstanding role models for both women and men undergraduates in our >50-percent-female student body. We believe the success of MU's women faculty can have a direct impact on the long-term success of our students as they enter the workforce in the 21st century.

Tenured and Tenure-track Faculty in STEM, by Gender: 2006

- Female: 294
- Male: 55

Source: 10/31/2006 HR Genreus Data Employee File; MU Office of Institutional Research
In its first year, the Mizzou ADVANCE Mentoring Program has exceeded its goals. The program established an initial goal of matching up to 18 pairs of faculty mentors and mentees in the STEM departments. By fall 2007, the program had successfully matched 19 mentoring pairs who have been meeting one-on-one for career guidance and advice and in groups for professional development training and enhanced professional networks. The unique angle of MU’s program is that it provides mentoring to senior (associate and full professors) faculty — a group not typically provided with institutional supports for career advancement.

Sheryl Tucker, associate professor of chemistry and associate dean of the Graduate School, is the chair of the mentoring program. As a recipient of the 2005 Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring, she is recognized for her outstanding efforts to enhance the participation of underrepresented groups in STEM across all age ranges.

In spring 2007, Lisa Frehill, of the Center for Professionals in Science and Technology, met with the Mizzou ADVANCE mentoring program. Having served on New Mexico State University’s (NMSU) ADVANCE grant, Frehill offered practical advice, lessons learned and research findings. The Mizzou ADVANCE mentoring program is modeled after the program developed by Frehill at NMSU.

If you are interested in joining the mentoring program as a mentor or mentee, please watch for application materials in the spring 2008 semester. The program is open to all tenured STEM faculty in the participating departments.

For more information about the mentoring program contact Sheryl Tucker at TuckerS@missouri.edu.

The Mizzou ADVANCE Interactive Theatre team is developing scripts for theatre performances about campus gender equity issues. The sketches are based on issues that are highlighted in the literature and have emerged from Mizzou ADVANCE research. By facilitating dialogue and engaging individuals, the theatre performances explore and address issues of gender equity. The Mizzou ADVANCE mentoring program is modeled after the program developed by Frehill at NMSU.

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The ADVANCE leadership asked me to write a few words about why I wanted to be a mentor. As I thought about it, I realized I had almost instinctively reacted positively to the call for participating in the ADVANCE program. In retrospect, I realized that my reaction was rooted in my strong belief in the value of being mentored and of being a mentor. Additionally, being married to a highly successful professional woman and having two daughters, I have a personal interest in seeing women succeed in their careers.

Scholars of mentoring (e.g., Kram, 1985) refer to two categories of mentoring benefits for the protégé: psychosocial and career returns. I have benefited substantially in both categories, at all stages of my career, from being mentored. Psychosocial returns to me have included: learning from role models (e.g., scientist, teacher, administrator and parent), acceptance, friendship, counseling and support during stressful periods. Career mentoring has directly benefited me via sponsorship, coaching, organizational socialization, heightenened visibility and protection. Mentors have bolstered my self-confidence, increased my productivity and enhanced my satisfaction with my career.

At the same time, I have benefited from being a mentor (I’ll leave it to any of my protégés as to whether they benefited.). I have enjoyed a real sense of satisfaction in watching protégés succeed; and I feel that I have repaid my own mentors by “passing it along.” Professionally, mentoring others helps me extend my impact on my profession (and yes, that does mean I take, in my own mind, some credit for the contributions of my protégés!). Mentoring and the resulting connections made through my protégés has expanded my own professional networks. And, without question, my protégés have taught me much, expanded my perspectives and enriched my professional and personal lives.

Looking back at what I just wrote, I note that my paragraph on the benefits of my mentoring others is slightly longer than the one on the benefits I extracted from being mentored. Maybe that’s another form of “it is better to give than to receive”? It’s certainly worth talking over with some of my current mentors and protégés.

—Mark Ryan
Director, School of Natural Resources


Mizzou ADVANCE Happenings in 2007

February/March — Mizzou ADVANCE hosted kick-off events for STEM faculty and campus leaders.

April — Virginia Valian, an internationally recognized expert on gender schemas and women’s advancement, gave a keynote address on campus during Life Sciences Week.

October — Mizzou ADVANCE offered a professional development workshop, Strategic Persuasion, for STEM faculty. Workshop facilitators were Barbara Butterfield (University of Michigan) and Jane Tucker (Duke University).

Refer to MizzouADVANCE.missouri.edu for upcoming events.

Get Involved!

• Learn about Mizzou ADVANCE and its programs
• Learn about the issues that are being addressed by the grant
• Join the mentoring program
• Participate in campus research efforts

MizzouADVANCE.missouri.edu
Based on a successful ADVANCE program at the University of Michigan, a team of 11 faculty members has come together to form STRIDE, the Mizzou ADVANCE outreach committee. Representing the three colleges involved in Mizzou ADVANCE (i.e., Arts and Science, CAFNR and Engineering), these senior faculty members and administrators aim to inform faculty and administrators about perspectives and institutional policies that can impede women’s advancement in STEM. In addition, the committee will identify specific policies and practices that may benefit women’s advancement. STRIDE is led by Meera Chandrasekhar, Curators Teaching Professor of Physics. Chandrasekhar is a past recipient of the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring, which is administered on behalf of the White House by NSF.

To accomplish these goals, STRIDE members first are increasing their understanding of gender equity issues, especially the challenges that many women face as they advance to senior faculty and other leadership positions. Their conversations have centered on policies and practices as well as cultural issues that delay faculty in seeking professional advancement. STRIDE members also met with two recent visitors to campus: Virginia Valian (Hunter College, City University of New York) and Lisa Frehill (Commission on Professionals in Science and Technology). Both of these women are experts on gender equity issues as well as best practices and lessons learned from other ADVANCE implementations.

Beginning in 2008, STRIDE members will leverage their understanding of these issues when presenting information to senior leaders and key committees.

For more information about STRIDE, contact Meera Chandrasekhar at ChandrasekharM@missouri.edu.

**STRIDE Members**

College of Arts & Science
- Meera Chandrasekhar, professor, physics
- Karen Cone, professor, biological sciences
- Jackie Litt, chair, women’s and gender studies
- Nancy Flourny, chair, statistics
- Silvia Jurisson, professor, chemistry

College of Agriculture, Food and Natural Resources
- Marc Linit, associate dean, CAFNR
- Bruce McClure, professor, biochemistry
- Jerry Taylor, professor, animal genomics

College of Engineering
- Lex Akers, associate dean, College of Engineering
- Mike Devaney, professor, electrical and computer engineering
- John Gahl, interim chair and professor, chemical engineering and electrical and computer engineering

"I decided to become a member of the STRIDE committee because I believed that my involvement would ultimately assist in the recruitment and retention of women faculty within my home department. Perhaps of greater importance, my membership in the committee has sensitized me to issues facing women faculty of which I was completely unaware and that has made me a better mentor and colleague."

— Jerry Taylor, professor and Wurdack Chair of Animal Genomics
Mizzou ADVANCE
Women's & Gender Studies
325 Arvarh E. Strickland Hall
Columbia, MO 65211

A Message from Michael Middleton
Deputy Chancellor

I am proud to be a co-investigator on this important grant at MU. Our University's broad financial and leadership support for this project reflects our commitment to its goals — Mizzou ADVANCE echoes the core values of our University, particularly our pursuit of excellence.

Mizzou ADVANCE is helping us achieve our goals of recruiting and retaining an outstanding and diverse faculty. By developing and creating new institutional practices that support faculty at the various stages of their careers, we enhance the state's scientific workforce while increasing our institution's competitive edge. Through programs like Mizzou ADVANCE, we can continue to provide the high quality education and comprehensive research program that is expected of our state's flagship university.

A Message from Jackie Litt
Principal Investigator, Mizzou ADVANCE; Chair, Department of Women's and Gender Studies

With lightning speed, Mizzou ADVANCE is up and running, and like much else, the success of our program is tied to the overwhelming dedication and talent of people. Between our Mentoring Program, STRIDE, Interactive Theater, and Institutional Research, we have over 50 collaborators.

STEM faculty prepared outreach presentations on ways to improve recruitment and retention of women faculty. Mentors and mentees have been working together this past fall on enhancing career success and satisfaction. Social scientists and the Office of Institutional Research have teamed up to collect data on the status of women in STEM. This broad level of participation is precisely what we had hoped to develop — in effect, attention to faculty development, gender equity, and mentoring culture is occurring among STEM faculty themselves.

Enthusiastic support from senior leaders in our three partner colleges — Arts and Science, CAFNR and Engineering — and from the Chancellor’s and Provost’s offices have also generated new ideas for sustaining our initiatives. The Department of Women’s and Gender Studies is the institutional home for the grant, and that department too has offered tremendous support and expertise. We are confident that by working together with our partners and supporters, we can create new opportunities and a more productive work environment for women and all STEM faculty.

I hope you will get involved in the program and help to build a climate in our STEM departments and divisions that is supportive and encouraging to all. If you would like to know more about Mizzou ADVANCE, please contact me at MizzouADVANCE@missouri.edu.

Nancy Flournoy, the chair of MU’s statistics department, recently received a national honor from the Committee of Presidents of Statistical Societies. She was awarded the Florence Nightingale David Award, an honor given to “a female statistician who serves as a role model to other women by her contributions to the profession through excellence in research, leadership of multidisciplinary collaborative groups, statistics education or service to the professional societies.” Flournoy is only the fourth person to receive this award.

MizzouADVANCE.missouri.edu

Lesa Beamer, a biochemistry professor, received a new NIH grant to study an enzyme from Pseudomonas aeruginosa. This bacterium is an opportunistic human pathogen that often infects cystic fibrosis patients, burn victims and cancer patients. The two-year grant began in July 2007.

Mizzou ADVANCE Steering Board
Lesa Beamer
associate professor, biochemistry
Suzanne Burgoyne
professor, theatre
Meera Chandrasekhar
professor, physics
Carol Deakyn
associate professor, chemistry
Jeni Hart
assistant professor, educational leadership and policy analysis
Jackie Litt
chair, women's and gender studies
Carol Lorenzen
associate professor, animal science
Michael Middleton
deputy chancellor
Marjorie Skubic
associate professor, electrical and computer engineering
Sheryl Tucker
associate dean, graduate school; associate professor, chemistry

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