

Increasing the representation and advancement of women in academic science and engineering careers

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Upcoming Events *Spring 2007*

Graduate & Postdoctoral Seminars

Thinking Outside the Box: Using Your Education for Fun and Profit

Friday, March 23, 2007

11:30 am – 1:00 pm

Graduate Life Center, Room F

Betsy Ennis Dulin is a partner with the law firm of Bowles Rice McDavid Graff & Love, LLP, in Charleston West Virginia, where she practices in the areas of environmental, intellectual property, and higher education law. She will discuss alternate career paths for people with scientific and technical degrees. Co-sponsored by the Via Department of Civil and Environmental Engineering. Please visit www.advance.vt.edu to register.

Shannon Walker: Becoming an Astronaut

Monday, March 26, 2007

4:00 – 5:00 pm

Squires Student Center, Old Dominion Ballroom

Shannon Walker (PhD, Space Physics, Rice University, 1993) began her professional career as a robotics flight controller for the Space Shuttle Program. In 1995 she joined the NASA civil service and began working in the International Space Station Program at the Johnson Space Center. In February of 2006 she completed Astronaut Candidate Training. Co-sponsored by the Department of Science and Technology in Society and the Department of Physics.

Reflections on Gender and Technology

Tuesday, March 27, 2007

noon – 1:30 pm

Squires Student Center, Room 341

Cornelia Brunner, deputy director of the Center for Children and Technology, will discuss gender differences in attitudes towards technology. This talk will illustrate some of these differences and discuss ways in which we might invite young women who are not comfortable with the dominant discourse about technology into the IT professions. Co-sponsored by the symposium on Design+Science+Technology. Please register at www.advance.vt.edu.

AdvanceVT is funded by a grant from the National Science Foundation

Elements of the Work Environment that Contribute to the Ability of STEM Faculty to Manage Work-Life Tensions

Dr. Elizabeth Creamer, *AdvanceVT* Assessment Director

Work-family policies are generally the centerpiece of institutional efforts to promote the success of women faculty in science and engineering. Institutions funded by National Science Foundation ADVANCE grants have been in the vanguard of the movement to transform institutional and departmental culture to better recruit and retain women and minorities in STEM academic fields. Initiatives aimed at recognizing that faculty life extends beyond work performance have become prevalent among the 19 institutions that are round one and two Advance grant recipients. Work-life policies such as dual career hiring, stopping or delaying the tenure clock for childbirth or adoption, on-campus childcare and lactation rooms and the opportunity for short-term temporary employment to manage family issues have become formalized at many U.S. colleges and universities. However, there has been little opportunity to provide empirical support for the link between “family-friendly” policies and overall faculty job satisfaction.

- In January 2005, the Advance program at Virginia Tech distributed a campus wide survey addressing a range of work-life and other issues to all instructional and research faculty.
- 1209 university faculty responded, a 59.5% response rate.
- 816 tenure-track and tenured faculty responded, including 154 respondents from engineering departments.
- Of the tenure-track and tenured faculty, 80% and 91%, respectively, of the women responding were currently married or partnered.
- 57% of the married female faculty in STEM have a spouse/partner who is also employed or seeking employment as an academic, compared to 39% of the married/partnered faculty members overall.
- The findings of this study document a stronger statistical link between overall job satisfaction and perceptions about work-life issues for female than male faculty in engineering.
- The study also demonstrates that a number of elements of the work environment, such as clarity of performance expectations and satisfaction with spouse’s employment opportunities, are related to women’s positive views of their employment.

Findings point to recognizing that “family-friendly” policies serve both practical and symbolic purposes. On the practical side, they offer resources that ease time demands on the family. Symbolically, these policies may be equally, if not more salient to overall faculty job satisfaction. When reflected in informal practices, these policies can effectively communicate a work environment that does not penalize faculty who dedicate time to outside activities beyond academe. More information may be found at www.advance.vt.edu.

“In this evolving world, a new kind of engineer is needed, one who can think broadly across disciplines and consider the human dimensions that are at the heart of every design challenge. In the new order, narrow engineering thinking will not be enough. American higher education is in an unusual position to create the 21st-century engineer.”

Building quantitative-reasoning skills should still be a top priority for American engineering education, but that rigor should be complemented with developing students’ ability to think powerfully and critically in many other disciplines. To be sure, it will be a challenge, but a challenge with tremendous benefits.”

*–“Holistic Engineering”
The Chronicle Review
March 16, 2007*

National Science Foundation Data on Women, Minorities and Persons with Disabilities in Science and Engineering Released

The National Science Foundation released on its website the biennial report containing data on the participation of women, minorities, and persons with disabilities in science and engineering education and employment. The data are organized by topic and are presented in tables, graphics, and spreadsheets for downloading. Please visit www.nsf.gov/statistics/wmpd/start.htm for more information.

Science and Engineering Faculty,
by Sex and Highest Degree: 2003

Highest degree	Female	Male
Bachelor's	10.6%	6.9%
Master's	35.1	20.1
Doctorate	40.0	55.8
Professional	14.3	17.2

NOTE: Includes full, associate, and assistant professors and instructors.

Saddler Presents *AdvanceVT* Data about Collegiality at Virginia Tech 4th Annual Scholarship of Diversity Conference

Tonya Saddler, a doctoral candidate in the School of Education, presented findings from a statistical analysis she conducted to identify factors that predict perceptions of collegiality at the regional 4th Annual Scholarship of Diversity Conference held at Virginia Tech on March 15 and 16, 2007. Using data from the 2005 *AdvanceVT* Work-Life Survey, Saddler reached some interesting conclusions that support an axiom often voiced by ADVANCE institutions, that "a rising tide lifts all boats." This is the notion that improvements in policies and practices designed to improve the climate for women and minorities, in fact, improve the climate for everyone.



Saddler's findings do not support the suggestion that different strategies are required to create a collegial environment for women, racial minorities, and for faculty members in fields, like engineering, where women and minorities are dramatically under-represented. What they do suggest is that a number of factors make a significant contribution to perceptions of collegiality, for all faculty members, regardless of gender or race. These are: (a) the perception that there are opportunities for input, mentoring, and collaboration; (b) that responsibilities outside of work are respected; (c) that one's work is valued; and (d) that performance expectations are clear and uniformly applied. Positive views about collegiality are statistically linked to overall job satisfaction.

Saddler's findings also underscore the positive impact of activities and policies undertaken to promote diversity on perceptions of collegiality, and consequently, overall job satisfaction. Possibly because they suggest an underlying respect for individual differences, an environment perceived to promote diversity favorably impacts perceptions of collegiality for all faculty members, regardless of race, gender, or discipline.

Congratulations to the 2007-2008 AdvanceVT Seed Grant Recipients!

Dr. Lisa Belden Biological Sciences	Dr. Taranjit Kaur Biomedical Sciences
Dr. Pamela Murray-Tuite Civil & Environmental Engineering	Dr. Christina Petersson-Wolfe Dairy Science
Dr. Nichole Rylander Mechanical Engineering	Dr. Liquing Zhang Computer Science



Funding Opportunities Still Available

AdvanceVT Post-doctoral Fellowships March 30, 2007
AdvanceVT Colloquia: AdvanceVT Scholars Proposals accepted at any time.

Please visit www.advance.vt.edu to access more information on the AdvanceVT seed grant recipients and other upcoming programs.

"In a recent volume by the National Academies Committee on Women in Science and Engineering (CWISE), it appears that mentoring is the magic bullet that will enable U.S. institutions to better recruit and advance women students and faculty in science and engineering. The buzz about mentoring is everywhere: the in-flight magazine for a major airline had an article about mentoring, academic journals feature items about both program structures and—in rare cases—actual evaluations of the impact of mentoring, many companies have initiated mentoring programs, organizations like NC-WIT and AWIS have assembled tools for mentors and MentorNet has brought e-mentoring to tens of thousands of people."

*"2006 Review of the Literature"
SWE, Magazine of the Society of Women Engineers*