

<http://careerwise.asu.edu>

The *CareerWISE* program is an NSF-funded, interdisciplinary research program housed at Arizona State University (ASU) and led by Drs. Bianca L. Bernstein (PI), Robert Atkinson (Co-PI), and Jennifer M. Bekki (Co-PI). The *CareerWISE* research program has two major thrusts: 1) the development of an internet-delivered resource with the goal of increasing women's persistence in Science,

Technology, Engineering, and Math (STEM) doctoral programs despite challenging circumstances and 2) a research agenda that includes the formal evaluation of the resource's effectiveness and expansion of the resource, along with work striving to characterize the experiences of women who are pursuing and leaving PhD programs in STEM disciplines.

The *CareerWISE* Resource: A Tested Tool

The *CareerWISE* online psychological education program develops skills for addressing personal and interpersonal challenges in science and engineering environments and for strengthening personal assets and supports. The site is built on an extensive foundation of theory and research on psychological processes, environmental context, and personal behaviors that contribute to women's experiences in academic and career paths. The two primary purposes of the site are to help women in STEM programs find ways to better manage their immediate environments (an intervention model) and to provide a long term resource to all women for overcoming barriers and for expanding personal supports in their future career environments. The site is now available at <http://careerwise.asu.edu>.

KEY SITE DETAILS

- Customized for women pursuing PhDs in STEM fields
- Multi-media web based training that includes both written and video content and examples
- Examples presented in real-life contexts taken from both focus groups and literature
- Content tested and improved through a series of content evaluations
- Effectiveness formally evaluated during 2009/2010 academic year using a randomized clinical trial design based on a national sample.
- Teaches a 4-step, solution-focused problem solving model that is tailored to augment the problem solving frameworks already familiar to STEM students and build skills to handle personal and inter-personal problems.
- Organized around four key areas of concern reported by women STEM doctoral students: relationships with advisors (Advisors), struggle to manage both academic and personal priorities (Balance), chilly climates in academic departments (Climate), and facing unexpected hurdles during the degree (Delays)
- Based on research in psychological and related fields; includes an extensive citation list for interested visitors to learn more
- Includes modules on how to understand yourself and how to understand the context of situations
- Contains hundreds of Her-Story clips from videotaped interviews with women who have successfully navigated the hurdles of graduate school in a variety of STEM fields. Women share their experiences and give advice.

The *CareerWISE* Research and Development Effort

The *CareerWISE* research and development program has produced nearly 20 publications and presentations at conferences in locations such as the American Educational Research Association, The American Association for the Advancement of Science, the Journal of Women and Minorities in Science and Engineering, the American Society of Engineering Education, and the American Psychological Association (full bibliography available on request).

The first of the *CareerWISE* research efforts involves the formal evaluation of the resource's effectiveness. During the 2009-2010 academic year, a nationwide Random Clinical Trial (RCT) was performed. Results from the trial indicate that when compared to research participants who were not given access to the resource, participants who were given only 5 - 5.5 hours of access to the *CareerWISE* site showed statistically significant advantages in self-assessed *CareerWISE*-related competencies, resilience, and confidence. These and other findings from the RCT provide strong evidence of the effectiveness of the resource. Further details on the RCT study and its findings can be found at <http://www.asu.edu/careerwise/researchbrief.pdf>

CareerWISE research projects are also underway that are designed to understand the types of incidents that occur in the academic and personal life of a female STEM PhD student and to identify how those incidents relate to the trajectory of student careers.

The next phase of *CareerWISE* will include broadening of content to provide in depth training on the specific topic of communication. The *CareerWISE* environment will also be expanded to include an interactive simulation containing multiple critical-incident scenarios.

The current *CareerWISE* research team is composed of students and faculty from: Counseling Psychology, Educational Technology, Engineering, Social Science Research Methodology, Arts and Media, Computer Science, Communication, and Curriculum and Instruction.

OTHER *CareerWISE* NOTABLES

- Financial support for *CareerWISE* has come from two NSF Research and Evaluation on Education in Science and Engineering (REESE) grants totaling \$3.2 Million.
- Advised since 2006 by an advisory board composed of Dr. Sally Mason, President of the University of Iowa, Dr. Indira Nair, Vice Provost of Education at Carnegie Mellon University, and Dr. Deirdre Meldrum, Dean of the Fulton Schools of Engineering at Arizona State University
- Provided research assistantships to more than 20 ASU graduate students from a wide variety of disciplines
- Receives advice and support from a variety of national organizations including CASEE (Center for the Advancement of Scholarship in Engineering Education), AWIS (Association for Women in Science), and AAAS (American Association for the Advancement of Science)
- Technical assistance to *CareerWISE* provided by ARC, the Center for Advancing Research and Communication, whose charge is to provide services to support researchers in meeting the objectives of NSF's REESE program.

For more information about *CareerWISE*, please email us at careerwise@asu.edu

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