SUZANNE WHITE BRAHMIA

EDUCATION

PhD candidate ; M.S. Physics, Thesis topic: *The Effects of Pre-Melting in a Dilute Li:Al Alloy*;
Cornell University 1993
B.S. Physics with departmental honors;
University of Washington 1986

TEACHING HISTORY

January 1993-Present

Director, Extended Physics Program, Rutgers University Physics Department, Piscataway, NJ

Lecturing, administration, curriculum development, training and supervision of teaching assistants for a two semester introductory physics course for scientists and engineers comprised of 150 under prepared freshman. Responsibilities also include development and management of laboratory workspace for weekly 80-minute hands-on workshops, writing and testing of laboratory curricular materials.

Successes include: The realization of a 25% improvement in the performance and a 30% improvement in the retention of female and minority engineering students.

Associate Director, Math and Science Learning Center, Rutgers University , Piscataway, NJ

The Math and Science Learning Centers (MSLC) are science learning facilities equipped with hands-on physics demonstrations , classroom space, and science content area support models, microscopes, and computers- all of which support the departments of math, physics, chemistry and biology. . Major responsibilities

- developing physical science activities for the *Science Explorer*- a mobile learning laboratory that visits middle schools in underserved districts throughout New Jersey to provide hands-on, student-active science experiences
- developing physics demonstrations and associated curricular materials, overseeing visits to the center by visiting K-12 classes, and running summer seminars for middle and grade school science teachers.
- working with Rutgers physics faculty to integrate hands-on and computer activities into existing course structure.

August 1990-January 1993

Teaching Assistant, Cornell University Physics Department , Ithaca, New York.

Responsibilities included assisting in the development and testing of curricular materials and conducting weekly interviews with student monitors. Also assisted in the design of a summative and formative evaluation instrument for the project.

June 1987- September 1989

Peace Corps Volunteer, U.S. Peace Corps , Gabon, Central Africa.

Taught physical science in a rural French-speaking African high school grades 7-12. Responsibilities included 20 hours of teaching per week to a total of 200 students per semester.

TEACHING AWARDS

- *EOF Champion 2004*

State of New Jersey Commission of Higher Education Equal Opportunity Fund Board of Directors, awarded annually to a member of the Rutgers faculty of staff for ‘”having developed new approaches that have had a significant impact on EOF students.”

- *Outstanding Teacher of the Year, 2000*

Rutgers University chapter of the Society of Physics Students, awarded to one member of the Physics department each year.

- *Rutgers University Outstanding Professor, 2000*

Rutgers University chapter of the Delta Gamma sorority, "for motivating female students to reach their highest potential".

NSF /PUBLICATIONS/TALKS

NSF Funding:

- National Science Foundation CCLI-EMD -- *ISLE Investigative Science Learning Environment: Science and Cognition Combined*, Co-PI with E.Etkina, A.Van Heuvelen and X. Zou. '01-'03

Publications:

- Peter Lindenfeld, Suzanne White Brahmia: Physics – the First Science, a college introductory physics textbook; under contract with Rutgers University Press, publication in 2009
- Eugenia Etkina, Alan Van Heuvelen, Suzanne White Brahmia, David T. Brookes, Michael Gentile, Sahana Murthy, David Rosengrant, and Aaron Warren: *Scientific abilities and their assessment* Phys. Rev. ST Phys. Educ. Res. **2** (2006)
- White Brahmia, S. et.al, ; *Improving the Odds: A Practical Approach to Closing the Gender and Ethnicity Gaps in Physics for Engineering Majors*; Journal of College Science Teaching (under review).
- Invited Paper: *Emphasizing Social Aspects of Learning to Foster Success of Students At- Risk,* Proceedings from Physics Education Research Conference, July 2001
- Brahmia, S., Etkina, E. ; *Switching Students on to Science: An Innovative Course Design for At-Risk Students in Physics* ; Journal of College Science Teaching November 2001.
- Recitation *Manual for Calculus-Based Introductory Electromagnetism*; Rutgers University 2001

  Collection of weekly 80 minute recitation activities for Introductory Electromagnetism. Lessons are group problem-solving activities for at-risk students.
- Workshop *Manual for Calculus-Based Introductory Physics*; Rutgers University 1999

  Collection of weekly 80 minute workshop activities for Introductory Mechanics. Lessons are hands-on, group activities for at-risk students.

Talks:

- Invited Panel: *How and Why are Textbooks Used in a Physics Course?* Summer Meeting 2007; AAPT
- Invited Talk: *Improving Learning for Underprepared and Otherwise Underconfident Students in Physics,* Princeton University Physics Department, March 2005
- Invited Talk: *Success of Underrepresented Students in a Large Enrollment Physics Course for Engineering Majors,* Rutgers University Physics Department, November 2004
- Invited Talk: *From Zululand to the Jersey Shore: Comparing Physics Education in Africa and the U.S.* , Summer Meeting 2004;AAPT
- Invited Talk: *Recruiting and Retaining Underrepresented Populations: How Can We Help? – the Rutgers Story,* Spring Joint Meeting 2004;APS/AAPT , New York State Section
- Invited Talk: *Fostering Success of At-Risk Students in a Large Enrollment Mechanics Course,* 2000 Northeast Regional Teaching Workshop, Cook College, Rutgers University October 2000
- Invited Talk: *Fostering Success of At-Risk Students in a Large Enrollment Mechanics Course,* Princeton University Physics Department, February 2000
- Contributed Talk: *Equations In Science: Do They Help or Hinder Scientific Reasoning?,* Winter Meeting 2007; AAPT
- Contributed Talk: *Improving Learning and Measuring Success for Underrepresented Groups in Physics,* Summer Meeting 2005;AAPT
- Contributed Talk: *Normalized Gain: What it Shows and What it Hides About Who is Learning,* Summer Meeting 2004;AAPT
- Contributed Talk: *Implementing ISLE in a Large-Enrollment Physics Course: Lessons Learned,* Summer Meeting 2003;AAPT
- Contributed Talk: *Investigative Science Learning Environment: A Sample from Extended Analytical Physics,* Winter Meeting 2002;AAPT
- Contributed Talk: *A Student Friendly Physics Course,* Summer Meeting 1996; AAPT