

**Cindy Kaus**  
***SENCER Leadership Fellow***

**Biosketch**

**Cindy Kaus** is an Associate Professor at Metropolitan State University in Saint Paul Minnesota. Before Metropolitan State, she was a visiting assistant professor at the University of Minnesota. Her interests include teaching mathematics/statistics through issues of social justice and its impact on students who are typically underrepresented in the STEM disciplines, computational electromagnetics, and increasing the participation of underrepresented groups, specifically women and minorities, in the STEM disciplines. She serves as co-director of the program *M<sup>power</sup>*: Empowering Urban Girls through Mathematics, which includes a summer camp and academic year activities for middle school girls. During her academic career, she has received awards for her excellence in teaching and for her advocacy and service to women.

Cindy received her Ph.D. in mathematics from the University of Arizona and her M.S. and B.S. in electrical engineering from Arizona State University. Her experience in industry includes working as an electrical engineer for Honeywell Satellite Systems.

**Curriculum Vitae**

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**EDUCATION**

- Ph.D. in Mathematics, University of Arizona, Tucson Arizona, 1997
- M.S. in Electrical Engineering, Arizona State University, Tempe Arizona, 1992
- B.S. in Electrical Engineering, Arizona State University, 1987

**PROFESSIONAL EXPERIENCE**

- Visiting Mathematician with NSF-sponsored Science Education for New Civic Engagements and Responsibilities (SENCER), 2008-2009 academic year
- Associate Professor, Department of Mathematics, Metropolitan State University, August 2001-present
- Chair of the Mathematics Department, Metropolitan State University, May 2006 – present
- Visiting Assistant Professor, School of Mathematics, University of Minnesota, June 1999-August 2001
- Visiting Assistant Professor, School of Mathematics, Institute of Technology Center for Educational Programs, University of Minnesota, August 1997-June 1999
- Adjunct Faculty, College of Saint Catherine, January 2001-May 2001
- Graduate Research Associate, Department of Electrical and Computer Engineering, University of Arizona, 1996-1997
- Graduate Teaching Associate, Department of Mathematics, University of Arizona, 1992-1997
- Electrical Engineer, Data Management Group, Honeywell Satellite Systems, Glendale Arizona, 1990-1991

**AWARDS**

- Recipient of the Elizabeth Shippee award for her advocacy for and service to women, 2007
- Metropolitan State University Excellence in Teaching Award, 2002
- University of Minnesota School of Mathematics Professor of the Year Award, 2001
- University of Minnesota Outstanding Professor of the Year Award, 2000

- University of Arizona Foundations Award for meritorious performance in teaching, 1996

## GRANTS

- General Mills Celebrating Communities of Color grant, 2006-2007
- NSF sub-award for Science Education for New Civic Engagement and Responsibilities, 2006-2008
- Minnesota State Colleges and Universities Initiative to Promote Excellence in Student Learning grant for *Bringing Civic Engagement into the Mathematics and Science Curriculum*, 2006-2007
- Minnesota State Colleges and Universities Initiative to Promote Excellence in Student Learning grant for the *M<sup>power</sup>: Empowering Urban Girls Through Mathematics* program, 2006-2007
- Mathematics Association of America 2006 & 2007 Tensor Grant for the *M<sup>power</sup>: Empowering Urban Girls Through Mathematics* program at Metropolitan State University (waiting approval for renewal for 2008)
- MNSCU Center for Teaching and Learning, Learning that Lasts Grant “Incorporation of Modern Mathematics Methods into Biology Classes” – Co-authored with Dr. Virginia Card and Sarah Hansen
- Association of Women in Mathematics Sonia Kovalevsky Day Grant for the 2004 Sonia Kovalevsky Day at Metropolitan State University
- Association of Women in Mathematics Sonia Kovalevsky Day Grant for the 2003 Sonia Kovalevsky Day at Metropolitan State University
- Association of Women in Mathematics Sonia Kovalevsky Day Grant for the 1999 Sonia Kovalevsky Day at the University of Minnesota
- Mathematics Association of America 1998 Tensor Grant for Mathematics Enrichment Program for High School girls at the University of Minnesota

## SELECTED PRESENTATIONS AND PUBLICATIONS

- “*M<sup>power</sup>: Empowering Urban Girls through Mathematics Program*” Poster Presentation at the 2007 & 2008 American Mathematical Society and Mathematical Association of America Joint Meetings in New Orleans and San Diego
- “Mathematical and Statistical Reasoning in Compelling Contexts” at the SENCER Summer Institute 2007
- “Civic Engagement Initiatives in Mathematics” at the SENCER Summer Institute 2007
- “Incorporating Civic Engagement in the Classroom: The SENCER Approach” at the 2008 MNSCU Realizing Student Potential Conference
- “Bringing Civic Engagement into the Mathematics and Science Curriculum”, Metropolitan State University’s Spring Faculty Conference, 2007
- “Increasing Student Success in Calculus by Improving Mathematics Placement” at the Eighth Conference on Research in Undergraduate Mathematics, Phoenix Arizona, 2005
- “Incorporation of Modern Mathematics Methods & Technology into the Teaching of Ecology and Evolution” at the Ecological Society of America Annual Meeting, 2004 (co-authored presentation with Virginia Card)
- “Using hand-held Technology to Facilitate the Learning of Mathematics in Science Classes”, MNSCU Center for Teaching and Learning ITeach Conference, 2004
- “Closing the Achievement Gap, Views from Jaime Escalante” at the Winona State University’s College of Education, 2004
- Society of Industrial and Applied Mathematics (SIAM) 1998 Annual Meeting, Toronto, Canada – presented research “A Discrete Differential Form Approach to Solving Maxwell’s Equations” for the session on computational electromagnetics
- 4<sup>th</sup> International Workshop of Electric and Magnetic Fields: From Numerical Models to Industrial Applications, Marseilles France – invited speaker (not able to attend, presentation done by co-researcher) for special session on differential forms in computational electromagnetics, 1998
- 1997 Annual IEEE/URSI Symposium, Montreal Canada – presented research “Topological and Geometrical Considerations for Maxwell’s Equations on Unstructured Meshes” for session on new mathematical methods for computational electromagnetics
- C. Kaus and R. W. Ziolkowski “*Topological and Geometrical Considerations for Maxwell’s Equations on Unstructured Meshes*” *Electromagnetics*, Volume 28 Numbers 1-2, pp. 42-53 (2008)

- *Multivariable Mathematics Laboratories Using Mathematica*, Copyright 2004 by Cindy Kaus and Jonathan Rogness, University of Minnesota
- *Topological and Geometrical Considerations for Maxwell's Equations on Unstructured Meshes*, Ph.D. Dissertation, University of Arizona, 1997
- *Binary Phase Codes for Biomedical Ultrasound Application*, Master's Thesis, Arizona State University, 1992

#### **SELECTED CONFERENCES AND WORKSHOPS ATTENDED**

- 2006 and 2007 Science Education for New Civic Engagements and Responsibilities Summer Institute
- "Women and Minorities in the Sciences: How Faculty Can Make a Difference", NSF Chautauqua Short Course, Washington D.C., 2006
- "Increasing the Retention of Under-Represented Groups and the Learning of All Groups – In Science, Mathematics, Engineering and Technology Courses", NSF Chautauqua Short Course, Dayton Ohio, 2004
- "Increasing Success for Underserved Students: Redesigning Introductory Courses", The National Center for Academic Transformation, Chicago Illinois, 2005
- Fourth Annual Civic Engagement Conference, "Learning Beyond Borders: Engaging Students with the World at Home and Abroad", Metropolitan State University, 2005
- "Engagement, Capacity and Continuity: A Trilogy for Student Success", Science Museum of Minnesota, 2004
- "Teaching Students Equally", Metropolitan State University, 2003