

Melissa Eblen-Zayas

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EDUCATION AND PROFESSIONAL EXPERIENCE

Assistant Professor of Physics, Carleton College Department of Physics and Astronomy	September 2005-Present
Visiting Research Associate, Ames Laboratory Novel Materials Group led by Paul Canfield	Summer 2007
University of Minnesota Dissertation: "Electrical Modification of Disordered and Correlated Electron Systems" Advisor: Allen Goldman Preparing Future Faculty Program	Ph.D. 2005
Smith College Major: Physics, Minor: History Honors Thesis: "Calorimetric Investigation of Phase Transitions in Quasi-One-Dimensional Metals" Advisor: Nathanael Fortune	B.A. <i>magna cum laude</i> , 1999

AWARDS AND FUNDING

National Science Foundation Division of Materials Research RUI: EuO Thin Films as a Laboratory for Exploring Metal-Insulator Transitions and Colossal Magnetoresistance Amount: \$144,590	2008-2011
Research Corporation Cottrell College Science Award Title: Exploration of possible phase inhomogeneity in EuO thin films exhibiting a colossal magnetoresistance response Amount: \$22,911 with \$10,035 in matching funds	2007-2009
Carleton College HHMI funding for one summer research student	Summer 2006, 2008
University of Minnesota Doctoral Dissertation Fellowship	2004-2005
National Science Foundation Graduate Research Fellowship	2001-2004
University of Minnesota First-year Graduate School Fellowship	1999-2000
Phi Beta Kappa	May 1999
Highest honors designation for senior thesis, Smith College	May 1999
Frank A. Waterman Prize for outstanding senior in physics, Smith College	May 1999

PROFESSIONAL MEMBERSHIPS

American Physical Society
American Association of Physics Teachers
Materials Research Society
Sigma Xi (Associate member 1999; Full member 2006)

JOURNAL PUBLICATIONS

- A. Bhattacharya, M. Eblen-Zayas, N.E. Staley, A.L. Kobrinskii, and A.M. Goldman, "Low-temperature glassy response of ultrathin $\text{La}_{0.8}\text{Ca}_{0.2}\text{MnO}_3$ films to electric and magnetic fields," *Physical Review B* **72**, 132406 (2005).
- Kevin A. Parendo, K. H. Sarwa B. Tan, A. Bhattacharya, M. Eblen-Zayas, N. E. Staley, A. M. Goldman, "Electrostatic Tuning of the Superconductor-Insulator Transition in Two Dimensions," *Physical Review Letters* **94**, 197004 (2005).
- M. Eblen-Zayas, A. Bhattacharya, N.E. Staley, A.L. Kobrinskii, A.M. Goldman, "Ambipolar Gate Effect and Low Temperature Magnetoresistance of Ultrathin $\text{La}_{0.8}\text{Ca}_{0.2}\text{MnO}_3$ Films," *Physical Review Letters* **94**, 037204 (2005).
- A. Bhattacharya, M. Eblen-Zayas, N.E. Staley, W.H. Huber, A.M. Goldman, "Micromachined SrTiO_3 single crystals as dielectrics for electrostatic doping of thin films," *Applied Physics Letters* **85**, 997 (2004).

SELECTED PRESENTATIONS

Research

- "CMR responses: Nanoscale inhomogeneity and colossal responses"
St. Olaf Physics Colloquium, Northfield, MN October 2006
- "Electrical modulation of colossal magnetoresistive materials"
Amherst College Physics Colloquium, Amherst, MA February 2006
- "Low temperature response of ultrathin manganite films in a field-effect geometry"
Argonne National Laboratory Materials Science Division, Argonne, IL September 2005
- "Glassy response to gate and magnetic fields in ultrathin manganite films"
Contributed talk, APS March Meeting, Los Angeles, CA, J41.004 March 2005

Other

- "Small steps towards incorporating nano concepts in the undergraduate physics curriculum"
2nd Annual NCLT Faculty Workshop on Nanoscale Science & Engineering Education
Cal Poly, San Luis Obispo, CA August 2006
- "Networking and mentoring women in physics: Local approaches to a universal challenge"
MAAPT Spring meeting, Hamline University, St. Paul, MN April 2006

INSTITUTIONAL INVOLVEMENT

- Institutional Animal Care and Use Committee (IACUC) Fall 2007-present
- FOCUS (**FO**cusing on **CU**ltivating **SC**ientists) Steering Committee Winter 2007-present
- Carleton Interdisciplinary Science and Math Initiative (CISMI) Advisory Board Fall 2006-present
- Learning and Teaching Center (LTC) Advisory Board Fall 2006-present
- Arboretum Director Search Committee Spring 2007

PROFESSIONAL AND COMMUNITY INVOLVEMENT

- Treasurer, Minnesota Area Association of Physics Teachers 2006-present
- American Association of Physics Teachers Committee on Graduate Education 2006-2009
- Member, US delegation, 2nd IUPAP International Conference on Women in Physics May 2005
- Co-Vice President for Programs, Graduate Women in Science, Xi Chapter 2004-2005
- Volunteer, Science Museum of Minnesota, St. Paul, MN 1999-2003