

Dominic A. Ricci

Department of Physics
University of Illinois at Urbana-Champaign
1110 West Green Street
Urbana, IL 61801
phone: (217) 333-2751, fax: (217) 244-2278

1200 S. Vine St. Apt. 31
Urbana, IL 61801
(217) 344-9184
domr@alum.mit.edu
<http://groups.mrl.uiuc.edu/chiang/Ricci/Ricci.htm>

EDUCATION

Ph.D. Physics. University of Illinois at Urbana-Champaign, 2005 (expected)
Thesis: "Photoemission Studies of Metal-Semiconductor Interfaces"
Advisor: Dr. Tai-Chang Chiang

M.S. Physics. University of Illinois at Urbana-Champaign, 2002

B.S. Physics. Massachusetts Institute of Technology, 1999
Thesis: "Evaluation of Near-Threshold, Low q^2 , $p(e, e')X$ Data Obtained to Measure the Proton Axial Radius"
Advisor: Dr. Aron Bernstein

PUBLICATIONS

- D. A. Ricci, T. Miller, and T.-C. Chiang. "Chemical Tuning of Metal-Semiconductor Interfaces." *Physical Review Letters* **93**, 136801 (2004).
- D. A. Ricci, T. Miller, and T.-C. Chiang. "Controlling the Thermal Stability of Thin Films by Interfacial Engineering." *Physical Review Letters* (2005).

PRESENTATIONS

- Synchrotron Radiation Center, National Science Foundation Review.** Stoughton, Wisconsin, 2005.
Invited presentation, "Thin Film Photoemission Studies on the Undulator 4-m Normal Incidence Monochrometer Beamline."
- Physical Electronics Conference.** Madison, Wisconsin, 2005.
Nottingham Prize competition talk, "Chemical Tuning of Metal-Semiconductor Interfaces."
- Frederick Seitz Materials Research Laboratory, Dept. of Energy Review.** Urbana, Illinois, 2005.
Contributed poster, "Interface Chemical Tuning of Thin Film Quantum Electronic Structure and Schottky Barrier Height."
- American Physical Society March Meeting.** Los Angeles, California, 2005.
Contributed talk, "Chemical Tuning of Metal-Semiconductor Interfaces."
- American Physical Society March Meeting.** Montreal, Quebec, 2004.
Contributed talk, "Electron Confinement and Interfacial (Ag) Effects in Pb Films on Si."

RESEARCH EXPERIENCE

- Doctoral Research.** University of Illinois at Urbana-Champaign, 2000 – present
Studied the effects of interfacial species upon the electronic structure and growth of atomic-scale metal films formed on semiconductor substrates using UV photoelectron spectroscopy at the Synchrotron Radiation Center at the University of Wisconsin-Madison. Developed models correlating observed electronic behaviors with chemical and physical properties.
- Undergraduate Thesis Research.** Massachusetts Institute of Technology, 1997 – 1999
Assessed the statistical suitability of electron-proton scattering data collected by the A1 Collaboration at the MAMI Microtron at the University of Mainz for the extraction of the proton axial radius.

TEACHING

Teaching Assistant. University of Illinois at Urbana-Champaign, 2000

Taught multiple discussion sections for introductory Classical Mechanics for engineering and science majors.

Tutor. Massachusetts Institute of Technology, 1998 – 1999

Worked as a tutor for various introductory level physics courses (Classical Mechanics, Electricity and Magnetism, Waves and Oscillations).

LABORATORY/COMPUTER SKILLS

- ◇ **Ultraviolet Photoemission.** Experience with synchrotron radiation sources. Angle-resolved and angle-integrated photoemission used in valence band and core level energy regimes.
- ◇ **Sample Analysis/Preparation.** Reflection high energy electron diffraction, Auger electron spectroscopy, Laue diffraction, ion sputtering, cryogenics (including liquid N₂ and He systems), vacuum annealing.
- ◇ **Ultra High Vacuum.** Operation, maintenance, design and construction.
- ◇ **Thin/Ultrathin Film Deposition.** Molecular beam epitaxy.
- ◇ **Construction/Design.** Basic machining skills (lathe, mill, drill press, etc.), soldering and brazing, basic electronics.
- ◇ **Programming.** C/C++, HTML.
- ◇ **Data Analysis.** Igor, Mathcad, Mathematica, SigmaPlot.
- ◇ **Productivity Software.** L^AT_EX, Microsoft Office, FrameMaker.

HONORS AND AWARDS

2005	Nottingham Prize Finalist
2000	Named to “Incomplete List of Excellent Teachers”, University of Illinois at Urbana-Champaign
1999	Inducted to Sigma Pi Sigma, the physics honors society, Massachusetts Institute of Technology

ACTIVITIES AND LEADERSHIP POSITIONS

UIUC Academic Buzzer Team, Graduate Advisor 1999 – present.

Organized and ran multiple interscholastic trivia competitions; recruited undergraduate and graduate students; assisted team officers in managing team internal and external affairs.

Physics Department Graduate Student Advisory Council 2001 – present.

Coordinated aspects of prospective graduate student recruitment programs; developed and organized intra-departmental informational and community-building activities.

Graduate College Departmental Liaison, 2003 – 2005.

Facilitated communications between University administration and physics graduate student body.

Graduate Student Advisory Council 2001 – 2003.

Represented graduate students in the physics department to the University’s Graduate College. In role of Executive Secretary (2002 – 2003), developed educational and social programs for the campus-wide graduate student body.