

DANIEL P. BERDINE

Apt 1109
1600 N. Oak St.
Arlington, VA 22209

phone: (202) 525-6798
daniel.berdine@gmail.com

EDUCATION:

- 2009 (expected): **Ph.D. Physics**, Univ. of Rochester (Advisor: Prof. Lynne H. Orr)
Title *Selected Phenomenological Contributions in Preparation for the Running of the Large Hadron Collider*,
- 2004–present: Ph.D. Program in Physics, University of Rochester
- 2003: Ph.D. Program in Physics, Carnegie Mellon University
- 2003 (Awarded 2004): **M.S. Physics**, Univ. of Rochester (Advisor: Prof. Lynne H. Orr)
Title: *W Boson Width Effects in Top Quark Production and Decay*
- 1999–2003: **B.S. Physics**, with honors, Cum laude, Univ. of Rochester

TEACHING POSITIONS HELD:

At the **University of Rochester:**

Independent

- 2009–present: *Tutor*, McNair program
- 2008–present: *Coach*, University of Rochester Fencing Club
- Summer 2008: *Instructor*, General Physics II
- 2007–2008: *Private Tutor*, University and High School students

Graduate Teaching Assistant

- | <u>Year</u> | <u>Spring</u> | <u>Fall</u> |
|-------------|--------------------------------|--|
| 2008: | Particle Physics II | |
| 2004: | Relativistic Quantum Mechanics | Statistics and Linear Algebra (Graduate) |
| 2003: | Quantum Mechanics II | |

Undergraduate Teaching Intern

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|-------|------------------------|-----------------------------------|
| 2002: | Physics by Inquiry | Introductory Electromagnetism |
| 2001: | Introductory Mechanics | Introductory Electromagnetism Lab |
| 2000: | | Introductory Mechanics Lab |

At **Carnegie Mellon University:**

Graduate Teaching Assistant

- 2003: Physics and the environment, Physical Analysis

TECHNICAL SKILLS:

Mathematica, Numerical Simulation (Monte Carlo), FORTRAN, MacOS, Linux, L^AT_EX, eLisp, digital image editing, Windows and general computing.

EXPERIMENTAL WORK:

- 1999–2000: Ultra High Vacuum lab assistant/researcher. Machine shop intro.
- 2002: Chaos in intermittent flows.

ACADEMIC AWARDS:

- 2009: Univ. of Rochester Dept. of Physics and Astronomy *Teaching Certificate*
- 2008: Messersmith University Research *Fellowship*
- 2003: Department Undergraduate Teaching Intern Award

RESEARCH POSITIONS HELD:

- 2004–present: Ph.D. Research Assistant, University of Rochester
- 2002–2003: Masters Research Assistant, University of Rochester
- 1999–2000: Undergraduate Research Assistant, University of Rochester
- Summers 2000–2002: REU, University of Rochester

REFEREED PUBLICATIONS:

- 3. In Preparation: **Efficacy of the standard and improved narrow width approximations in new physics models**,
(with N. Kauer and D. Rainwater), (2009).
- 2. **Breakdown of the narrow width approximation**,
(with N. Kauer and D. Rainwater), *Phys. Rev. Lett.* **99**, 111601 (2007).
- 1. **Mixed top-bottom squark production at the LHC**,
(with D. Rainwater), *Phys. Rev.* **D72**, 075003 (2005).

CONFERENCES AND WORKSHOPS ATTENDED:

- 6. *AAPT* Winter Meeting, Chicago, IL, February 11-16, 2009
- 5. Pheno 2007 Symposium, University of Wisconsin, Madison, May 7-9, 2007
- 4. DPF 2006, Honolulu, Oct. 29 - Nov. 3, 2006
- 3. Pheno 2006 Symposium, University of Wisconsin, Madison, May 15-17, 2006
- 2. Pheno 2005 Symposium, University of Wisconsin, Madison, May 2-4, 2005
- 1. APS/DPF 2003, Philadelphia, April 5-8, 2003

CONFERENCE TALKS:

- 5. **Breakdown of the NWA in BSM Physics**,
Pheno 2007, Madison, WI, May 8, 2007.
- 4. **Violations of the Narrow Width Approximation in BSM Physics**,
DPF 2006, Honolulu, HI, Oct 31, 2006
- 3. **Violations of the Narrow Width Approximation in SUSY**,
Pheno 2006, Madison, WI, May 16, 2006.
- 2. **Validation Tests of SUSY: CKM**,
Pheno 2005, Madison, WI, May 2, 2005.
- 1. **W Boson Width Effects in Top Quark Production and Decay**,
DPF 2003, Philadelphia, PA, April 8, 2003.

INVITED TALKS:

8. **Selected Phenomenological Contributions in Preparation for the Running of the Large Hadron Collider**,
Ph.D. thesis defense, University of Rochester, Aug 19, 2009.
7. **Parallel Universes**,
Buffalo-Rochester Journal Club seminar,
State Univ. of New York, Buffalo Feb. 14.
6. **Violations of the narrow width approximation in SUSY**,
Buffalo-Rochester Journal Club seminar,
Univ. of Rochester, Rochester NY, Oct. 19, 2006.
5. **Mixed Top-Bottom Squark Production: Electroweak SUSY at the LHC**,
HEP seminar, University of Rochester,
Rochester, New York, Sept. 20, 2005.
4. **Mixed top-bottom squark production at the LHC**,
Buffalo-Rochester Journal Club seminar,
State Univ. of New York, Buffalo, Aug. 30, 2005.
3. **Investigations into Supersymmetry Flavor Physics**,
Ph.D. Qualifying Examination talk, June 27, 2005.
2. **Noncommutative Geometry**,
Buffalo-Rochester Journal Club seminar,
Stat Univ. of New York, Buffalo, July 15, 2004.
1. **W Boson Width Effects in Top Quark Production and Decay**,
Masters thesis defense, University of Rochester, Aug 2003.

UNDERGRADUATE TALKS:

5. **W Boson Width Effects in Top Quark Production and Decay**,
University of Rochester Senior Symposium, May 13, 2003.
4. **W Boson Width Effects in Top Quark Production and Decay**,
The XXII Annual Rochester Symposium for Physics Students, April 12, 2003.
3. **The Effect of the W Boson Lifetime**,
University of Rochester REU Summer Research Presentations, August 2002.
2. **Optical Pulses and a Two-level Medium**,
University of Rochester REU Symposium, August 7, 2001.
1. **Photoluminescence of thin films of PTCDA on graphite**,
Society of Physics Students Lecture, August 8, 2000.

SUMMER SCHOOLS ATTENDED:

CTEQ: CTEQ Summer School on QCD Analysis and Phenomenology, Univ. of Wisconsin, Madison, Wisconsin, June 2007

TASI: Exploring New Frontiers Using Colliders and Neutrinos, Univ. of Colorado, Boulder, Colorado, June 2006

References**Professor Lynne Orr**

Dept. of Physics and Astronomy
University of Rochester
Rochester, NY 14627-0171

phone: (585) 275-8528

fax: (585) 276-0018

email: orr@pas.rochester.edu

Dr. David Rainwater

Space and Geophysics Laboratory
Applied Research Laboratories
University of Texas

10000 Burnet Road

Austin, TX 78758

phone: (512) 835-3530

email: rain@arlut.utexas.edu

Dr. John Boersma

Director of Academic Content at
Second Avenue Software

phone: (585) 419-6217

email: johnb@secondavesoftware.com

Professor Steven Manly

Dept. of Physics and Astronomy
University of Rochester
Rochester, NY 14627-0171

phone: (585) 275-8473

fax: (585) 276-0018

email: steven.manly@rochester.edu

Professor Kevin S. McFarland

Dept. of Physics and Astronomy
University of Rochester
Rochester, NY 14627-0171

phone: (585) 275-7076

fax: (585) 273-3237

email: kevin.mcfarland@rochester.edu

Janet Fogg-Twichell

Dept. of Physics and Astronomy
University of Rochester
Rochester, NY 14627-0171

phone: (585) 275-6679

fax: (585) 273-3237

email: janf@pas.rochester.edu

Secondary references**Professor Doreen Wackerroth**

Department of Physics
University at Buffalo
239 Fronczak Hall
Buffalo, NY 14260-1500 USA

phone: (716) 645-2017 ext. 175

fax: (716) 645-2507

email: ubphysics@buffalo.edu

Professor Ulrich Baur

Department of Physics
University at Buffalo
239 Fronczak Hall
Buffalo, NY 14260-1500

phone: (716) 645-2017 ext. 178

fax: (716) 645-2507

email: ubphysics@buffalo.edu