

# DANIEL T. LARSON

## CURRICULUM VITAE

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### Education

May 2005      Ph.D. Physics (particle theory)  
                  University of California, Berkeley

May 2001      M.A. Physics  
                  University of California, Berkeley

June 1998     B.A. *magna cum laude* in Physics and Mathematics  
                  Harvard University

### Research and Teaching Positions

Spring 2006    Lecturer, Harvard University, Division of Engineering and Applied Science

Spring 2006    Preceptor, Harvard University, Chemistry Department

2005           Curriculum Development, Harvard University, Academic Programs

2005           Teaching Fellow, Harvard University, Physics and Mathematics Departments

2002–2004     Graduate Student Research Assistant, Lawrence Berkeley National Lab, Theoretical Physics Group

Fall 2003      Visitor, School of Natural Sciences, Institute for Advanced Study, Princeton, NJ

1999–02, 2004   Graduate Student Instructor, UC Berkeley, Physics Department

1998–99       Full Time Research Assistant, Harvard University High Energy Physics Lab, CDF and ATLAS Groups

Summer 1997   Research Experiences For Undergraduates, The Ohio State University, with Prof. Eric Braaten

Summer 1996   Research Experiences For Undergraduates, National Radio Astronomy Observatory, with Dr. Eric Schulman

Summer 1995   Research Experiences For Undergraduates, University of Minnesota, Priscilla Cushman Group

1995-99       Teaching Assistant, Harvard University, Mathematics Department

### Awards

Spring 2005    Certificate of Distinction in Teaching, Harvard University

2005           Physics Student Service Award, UC Berkeley Physics Department

2000           Outstanding Graduate Student Instructor, UC Berkeley Physics Department

1998           Phi Beta Kappa, Harvard University

## Publications

- [1] D. T. Larson, H. Murayama and G. Perez, “Right-handed new physics remains strangely beautiful,” JHEP **0507**, 057 (2005) [arXiv:hep-ph/0411178].
- [2] D. T. Larson, “Proton decay and the Planck scale,” To be published in PASCOS '04 Proceedings, World Scientific [arXiv:hep-ph/0410035].
- [3] R. Harnik, D. T. Larson, H. Murayama and M. Thormeier, “Probing the Planck scale with proton decay,” Nucl. Phys. B **706**, 372 (2005) [arXiv:hep-ph/0404260].
- [4] R. Harnik, G. D. Kribs, D. T. Larson and H. Murayama, “The minimal supersymmetric fat Higgs model,” Phys. Rev. D **70**, 015002 (2004) [arXiv:hep-ph/0311349].
- [5] R. Harnik, D. T. Larson and H. Murayama, “Supersymmetric color superconductivity,” JHEP **0403**, 049 (2004) [arXiv:hep-ph/0309224].
- [6] R. Harnik, D. T. Larson, H. Murayama and A. Pierce, “Atmospheric neutrinos can make beauty strange,” Phys. Rev. D **69**, 094024 (2004) [arXiv:hep-ph/0212180].
- [7] Larson, Daniel T. and Eric Schulman, “A Revised Orbital Period for M33 X-7,” The Astronomical Journal **113**, 618-623 (1997).

## Talks

- “Introducing the Fat Higgs.” Phenomenology Seminar, KEK, Tsukuba, Japan, 19 November 2004.
- “Right-Handed Squark Mixing and CP-Violation.” 6th Workshop on Higher Luminosity B Factory, KEK, Tsukuba, Japan, 18 November 2004.
- “No GUTs Needed: Planck Scale Nucleon Decay.” Unification Day Workshop, Keystone, CO, 15 October 2004.
- “Proton Decay and the Planck Scale.” 10th International Conference on Particles, Strings and Cosmology (PASCOS '04), Boston, MA, 21 August 2004.
- “The Fat Higgs.” Theoretical Advanced Study Institute (TASI), Boulder, CO, 1 July 2004.
- “Probing the Planck Scale With Proton Decay.” Particle and Fields Seminar, Boston University, 24 May 2004.
- “Introducing The Fat Higgs.” LEPP Theory Seminar, Cornell University, 14 April 2004.
- “Introducing The Fat Higgs.” Theory Seminar, Stanford Linear Accelerator Center, 13 February 2004.
- “Introducing The Fat Higgs.” 4D Seminar, LBNL Theory Group, Berkeley, CA, 4 February 2004.
- “Strange Beauty: Neutrinos and B-Physics.” SLAC Summer Institute, Stanford Linear Accelerator Center, Menlo Park, CA, 5 August 2003. (poster)
- “SUSY  $SU(N)$  Gauge Theories With A Chemical Potential.” Lawrence Berkeley National Lab, Nuclear Theory Division Workshop: Effective Summer In Berkeley, Berkeley, CA, 17 July 2003.
- “Strange Beauty: Neutrinos and B-Physics.” Prospects in Theoretical Physics, Institute for Advanced Study, Princeton, NJ, 8 July 2003. (poster)
- “Large  $b \rightarrow s$  Transition Motivated By Atmospheric Neutrinos.” 4D Seminar, LBNL Theory Group, Berkeley, CA, 20 November 2002.

## Conferences and Workshops Attended

- *6th Workshop on Higher Luminosity B Factory*, KEK, Tsukuba, Japan, 16-18 November 2004.
- *Unification Day Workshop*, UNO Collaboration Meeting, Keystone, CO, 14-16 October 2004.
- *10th International Conference on Particles, Strings and Cosmology (PASCOS '04)*, Northeastern University, Boston, MA, 16-22 August 2004.
- *Theoretical Advanced Study Institute (TASI 2004)*, University of Colorado, Boulder, CO, 6 June - 2 July 2004.
- *31st SLAC Summer Institute on Particle Physics: Cosmic Connection To Particle Physics (SSI 2003)*, Stanford Linear Accelerator Center, Menlo Park, CA, 28 July - 8 August 2003.
- *Prospects in Theoretical Physics: Cosmology, Particles and Strings - 2003*, Institute for Advanced Study, Princeton, NJ, 30 June - 11 July 2003.

## Science Education and Community Service

- Lecturer, Harvard University Division of Engineering and Applied Science, Spring 2006.  
(Instructor for applied math course on differential equations.)
- Preceptor, Harvard University Chemistry Department, Spring 2006.  
(Organizing an introductory chemistry course.)
- Curriculum Development, Harvard University Academic Programs, 2005-06.  
(Reinvigorating introductory physics and chemistry courses.)
- Head Teaching Fellow, Harvard University Physics Department, Fall 2005.  
(Large introductory physics course.)
- Tutorial Leader, Harvard University Summer Mathematics Tutorials, Summer 2005.  
(Lead 6 week exploration at the physics/math interface.)
- Author, "The Nature of Matter." (To be published in 2006 by Chelsea House as part of the series of high school textbooks called "The World of Physics".)
- Teaching Fellow, Harvard University Core Curriculum, Spring 2005.  
(“Reality Physics” course for non-majors.)
- Graduate Student Instructor, 7 semesters undergraduate and 1 semester graduate physics, UC Berkeley, 1999–2004.  
(Intro mechanics, E&M, modern physics; upper division quantum, E&M; graduate quantum.)
- Physics Preliminary Exam Writing Committee, UC Berkeley, Fall 2004.  
(Checked and edited exams as student supervisor.)
- Advisor, Science Buddies E-mentoring Program, San Francisco, CA, 2003–2004.  
(Helped a middle-school student with a science project.)
- Physics Education Seminar, UC Berkeley, Spring 2003.  
(Attended bi-weekly meetings and led one discussion.)
- Physics Graduate Prelim Exam Reviews, 9 semesters, UC Berkeley, 2001–2003.  
(Led 2 week review sessions covering all of undergraduate physics to prepare graduate students for written and oral examinations.)
- Undergraduate Physics GRE Review, UC Berkeley, Fall 2001.  
(Led four workshops to help undergraduates prepare for the Physics GRE.)

## Specific Courses Taught

### Physics

Spring 2006	Ordinary and Partial Differential Equations, Harvard Applied Math 105b, co-taught with Professor Michael Brenner
Spring 2006	Principles of Chemistry, Harvard Chemistry 7, with Professor James Anderson. [Preceptor]
Fall 2005	Principles of Physics: Mechanics, Harvard Physics 1a, with Professor David Weitz. [Head Teaching Fellow]
Spring 2005	Reality Physics, Harvard Science A-45, with Professor Gerald Gabrielse.
Fall 2004	Graduate Quantum Mechanics, UC Berkeley Physics 221A, with Professor Hitoshi Murayama.
Spring 2002	Electromagnetism and Optics, UC Berkeley Physics 110B, with Professor Leroy Kerth.
Fall 2001	Electromagnetism and Optics, UC Berkeley Physics 110A, with Professor Mark Strovink.
Spring 2001	Quantum Mechanics, UC Berkeley Physics 137B, with Professor John Clarke.
Fall 2000	Quantum Mechanics, UC Berkeley Physics 137A, with Professor John Clarke.
Summer 2000	Physics for Scientists and Engineers: Modern Physics, UC Berkeley Physics 7C, with Professor Gary Weston (CSU Hayward).
Spring 2000	Physics for Scientists and Engineers: Classical Mechanics, UC Berkeley Physics 7A, with Professors Paul McEuen (Cornell University) and Dr. Bruce Birkett.
Fall 1999	Physics for Scientists and Engineers: Electricity and Magnetism, UC Berkeley Physics 7B, with Professor John Clarke, Dr. Bruce Birkett and Dr. Matthias Reinsch. [Outstanding Graduate Student Instructor Award]

### Mathematics

Summer 2005	How to Talk to a Physicist: Groups, Symmetry, and Topology, Harvard Summer Math Tutorial.
Spring 1999	Honors Multivariable Calculus and Linear Algebra, Harvard Math 25B, with Professor Michael Nakamaye.
Fall 1996 - Spring 1998	Linear Algebra and Differential Equations, Harvard Math 21B, with various course heads (4 semesters).
Spring 1996	Multivariable Calculus, Harvard Math 21A, with various course heads.
Fall 1995	Multivariable Calculus, Harvard Math 21A (special <i>Mathematica</i> section), with Professor Deborah Hughes-Hallett.