

David Schaich

CONTACT INFORMATION **Physics Department and Center for Computational Science**
Boston University 617/353-6065 (office)
590 Commonwealth Ave. 617/358-4419 (fax)
Boston, MA 02215 schaich@physics.bu.edu

EDUCATION **Boston University**, Boston, MA
Ph.D., Physics, expected May 2011
Thesis: *Strong Dynamics and Lattice Gauge Theory*
Advisor: Claudio Rebbi
Certificate in Computational Science, expected May 2011
M.A., Physics, May 2008
Amherst College, Amherst, MA
B.A. *summa cum laude*, Physics, History, and Mathematics, May 2006
Honors Thesis: *Lattice Simulations of Nonperturbative Quantum Field Theories*
Advisor: William Loinaz

RESEARCH INTERESTS Lattice gauge theory and lattice QCD.
Dynamical electroweak symmetry breaking and new strong dynamics.
Quantum field theory and physics beyond the Standard Model.
High performance computing and computational physics.

PROFESSIONAL EXPERIENCE **Boston University**, Boston MA
Member of the Center for Computational Science **September 2006–**
Member of Particle Theory Group **September 2007–**
NSF IGERT Fellow **May 2007–April 2009**
Dean's Fellow **September 2006–April 2007**
Involved in research on lattice QCD and physics beyond the Standard Model.
Member of the [Lattice Strong Dynamics Collaboration](#).
Teaching Assistant **September 2008–May 2009**
Graded Quantum Field Theory I and II under E. Katz.

CERN, Geneva, Switzerland
Summer Research Assistant **June–August 2005**
Developed programs to reconstruct the mass of the top quark from dilepton decay events. Member of the ATLAS experiment.

Amherst College, Amherst MA
Physics Department Teaching Assistant **January 2003–May 2006**
Mathematics Department Teaching Assistant **September 2004–May 2006**
Assisted courses in Mechanics & Wave Motion; Electromagnetism & Optics; Dynamics of Charges and Fields; Modern Physics; Mathematical Methods of Theoretical Physics; Quantum Mechanics; Single- and Multi-variable Calculus; Introduction to Statistics; and Differential Equations. Duties included (depending on the course) grading homework or lab reports, supervising laboratory sessions and holding help sessions.
Summer Astronomy Intern **May–July 2004**
Developed educational materials on tidal interactions in the Earth-Moon system.

Hope College, Holland MI
Summer Research Assistant **May–July 2003**
Used cubic equations of state to calculate series solutions for fluid properties as direct functions of temperature.

HONORS AND AWARDS	<p>Boston University Physics Department Chair's Book Prize, 2008. "In recognition of excellence in achievement by a first year graduate student". National Science Foundation IGERT Fellowship, 2007-2009. Boston University Dean's Fellowship, 2006-2007. Forris Jewett Moore Fellowship (Amherst College), 2006-2007. Sigma Xi (national scientific honor society), 2006. Phi Beta Kappa (national honor society), 2005. John Petropulos Prize in Historical Scholarship (Amherst College), 2005.</p>
PUBLICATIONS	<p><i>Lattice study of ChPT beyond QCD</i>, Ethan Neil <i>et al.</i>, <i>Proceedings of Science</i> CD09:088 (2009). <i>Toward TeV Conformality</i>, Thomas Appelquist <i>et al.</i>, submitted to <i>Physical Review Letters</i> (2009) [arXiv:0910.2224]. <i>Improved lattice measurement of the critical coupling in ϕ_2^4 theory</i>, David Schaich and Will Loinaz, <i>Physical Review</i> D79:056008 (2009), [arXiv:0902.0045]. <i>Möbius Algorithm for Domain Wall and GapDW Fermions</i>, Richard Brower <i>et al.</i>, <i>Proceedings of Science</i> LATTICE 2008:034 (2008) [arXiv:0906.2813].</p>
TALKS PRESENTED	<p>"Electroweak Symmetry Breaking: An enduring mystery of the standard model of particle physics, and how we hope to solve it", Amherst College Colloquium, 1 October 2009. "Technicolor at the LHC", Boston University LHC Physics Symposium, 30 April 2009. "Lattice Simulations of Nonperturbative Quantum Field Theories", Amherst College, 2 May 2006. "Life on the Lattice: Markov Chain Monte Carlo and all that", Amherst College, 29 Nov. 2005. "Top Quark Physics at the LHC", Five-College Physics Symposium, University of Massachusetts, 1 October 2005.</p>
POSTERS PRESENTED	<p>David Schaich, Scott Kaplan, William Loinaz, James Hagadorn, "Interdisciplinary Cluster Computing at a Liberal Arts College", AAPT Topical Conference on Computational Physics for Upper Level Courses, Davidson College, 27-28 July 2007. David Schaich, Michael Misovich, "Physical Property Modeling from Equations of State", NSF REU Symposium, Hope College, 25 July 2003.</p>
SUMMER SCHOOLS ATTENDED	<p>Les Houches Summer School in Lattice Gauge Theory, Les Houches, France, 3-28 August 2009. CTEQ Summer School on QCD Analysis and Phenomenology, Madison WI, 30 May-7 June 2007. CERN Summer Students Lecture Programme, Geneva, Switzerland, 6 July-12 August 2005.</p>
TECHNICAL SKILLS	<p>Proficient in programming languages including C/C++, Fortran, Java, Perl, SQL, PHP, shell scripting. Some experience with Python and assembly. Experienced Linux system administrator. Proficient with $\text{T}_\text{E}\text{X}$, $\text{L}^\text{A}\text{T}_\text{E}\text{X}$, $\text{BIB}\text{T}_\text{E}\text{X}$. Familiar with standard software such as Mathematica, Maple, Matlab, OpenOffice. Additional exposure to specialized physics software including ROOT, PYTHIA and HepMC.</p>