



Curriculum Vitæ

Evan Berkowitz

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Education

- 2008-2013 *University of Maryland, College Park.*
Ph.D. in Physics. Defended 8 April 2013.
- 2004-2008 *Massachusetts Institute of Technology.*
SB in Physics, GPA of 4.8/5.0.
- 1998-2004 *Hunter College High School, New York City, New York.*
Graduated with honors in mathematics and physics.

Current Position

Postdoctoral Researcher, Institut für Kernphysik & Institute for Advanced Simulation,
Forschungszentrum Jülich

- ◇ Working on few-nucleon systems, neutrinoless double beta decay, hadronic parity violation, nucleon structure, nuclear effective field theory, gauge/gravity duality, and other topics in lattice gauge theory and computational physics.

Positions Held

- 2013-2016 *Postdoctoral Researcher* — Lattice Group, Nuclear and Chemical Sciences Division, Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, Livermore CA.
- ◇ Developed new techniques for studying few-nucleon systems via lattice QCD, including parity-odd scattering channels.
 - ◇ Pioneered the application of lattice QCD to axion cosmology.
 - ◇ Executed precision tests of gauge/gravity duality.
- 2008-2013 *Graduate Research Assistant* — Theoretical Quarks, Hadrons, and Nuclei, Maryland Center for Fundamental Physics.
- ◇ Studied topological solitons in color-flavor-locked high-density quark matter.
 - ◇ Characterized a phase of condensed nuclei with applications for helium white dwarfs.
 - ◇ Pointed out certain constraining aspects of finite-volume simulations.
- 2007 *Undergraduate Researcher* — Waves and Beams, MIT Plasma Science and Fusion Center.
- ◇ Modeled and simulated an image-free cavity for a 20:1 elliptical beam to determine eigenfrequencies.
 - ◇ Developed and experimented with a photonic band gap cavity solid model.

- ◇ Modeled and simulated TESLA accelerator cavities to find field features and dispersion relations of TM modes, including beam-breakup modes.

2006 *Undergraduate Researcher* — Applied Mathematics Fluids Laboratory, MIT.

- ◇ Quantified the nibbling frequency in the tears of wine phenomenon for a variety of geometrical arrangements and chemical compositions.
- ◇ Designed and built an experiment to investigate natural frequencies in two-dimensional fluids.
- ◇ Developed software for video analysis of fluid motion experiments.

Grants, Honors & Awards

- 2018 *65M hours* as co-PI for A Variational Determination of Two-Nucleon Elastic Scattering at $m_\pi \sim 220$ MeV from Lattice QCD, NERSC 2018 ERCAP Allocation
- 2017 *11.3M core-hours* as PI for Hypernuclei and the Three-Neutron System from Lattice QCD, Jülich Supercomputing Center
- 2017 *3M core-hours* as co-PI for Scaling Lattice QCD Calculations for Leadership Computing Facilities, OLCF Director's Discretionary Time
- 2017 *6.5M Hours* as co-PI for Implementing Improved Operators for Lattice QCD Calculations of Two-Nucleon Elastic Scattering, NERSC 2017 ERCAP Allocation
- 2016 *Honorable Mention* in the 2016 Gravity Research Foundation Awards for Essays on Gravitation for *A Microscopic Description of Black Hole Evaporation via Holography*
- 2016 *64M core-hours* as co-PI for First Lattice QCD calculation of the I=2 Two-Nucleon Parity Violating Amplitude, INCITE 2016
- 2015 *17.46M CPU-Hours* as co-PI for First Lattice QCD Calculation of the I=2 Two-Nucleon Parity Violating Amplitude, NERSC 2015 ERCAP Allocation
- FALL 2014 *10M CPU-Hours* as co-PI for Lattice QCD Investigation of Hadronic Parity Violation, NERSC 2014 Allocation
- SPRING 2013 *Ann G. Wylie Dissertation Fellowship*, University of Maryland
- 2011-2012 *JSA/Jefferson Lab Graduate Fellow*
- 2009-2013 *Research Assistanship*, Theoretical Quarks, Hadrons, and Nuclei Research Group
- 2008-2010 *Departmental Fellowship*, Physics Department, University of Maryland
- 2008 $\Sigma\Pi\Sigma$, Massachusetts Institute of Technology

Teaching

- WINTER 2017 *Substitute Lecturer* — for Theoretical Hadron Physics at the University of Bonn, covering spontaneous symmetry breaking, Goldstone's theorem and chiral symmetry in QCD.
- 2009-2013 *Substitute Lecturer* — prepare and deliver lectures to graduate classes in electrodynamics and quantum mechanics.
- SUMMER 2011 *Research Mentor* — provided daily guidance, technical and conceptual assistance for two high school students in the Montgomery Blair Magnet Summer Research Program, ultimately leading to a publication.
- SPRING 2009 *Mechanics and Particle Dynamics* — Teaching Assistant for one section of introductory physics for engineers.
- SPRING 2009 *Inquiry into Physics* — In-class teaching assistant for introductory physics for elementary educators, focusing on qualitative physical understanding via lab-based learning.
- FALL 2008 *Fundamentals of Physics I* — Teaching assistant in for two peer-discussion, tutorial-style sections of introductory physics primarily for pre-med students.
- SUMMER 2005 *PADI Open Water Diver Course* — Instructor and certifier of record for 31 Open Water and Junior Open Water Divers, teaching academic and practical SCUBA diving knowledge.

Publications

- [34] Amy Nicholson, Evan Berkowitz, Henry Monge-Camacho, David Brantley, N. Garron, Chia Cheng Chang, Enrico Rinaldi, M.A. Clark, Bálint Joó, Thorsten Kurth, Brian Tiburzi, Pavlos Vranas, and André Walker-Loud. Heavy Physics Contributions to Neutrinoless Double Beta Decay from QCD. [nucl-th/1805.02634](#).
- [33] Chia Cheng Chang, Amy Nicholson, Enrico Rinaldi, Evan Berkowitz, Nicholas Garron, David A. Brantley, H. Monge-Camacho, Chris Monahan, Chris Bouchard, M.A. Clark, Bálint Joó, Thorsten Kurth, Kostas Orginos, Pavlos Vranas, and André Walker-Loud. A per-cent-level determination of the nucleon axial coupling from Quantum Chromodynamics. *Nature*, 2018.
- [32] Evan Berkowitz, Masanori Hanada, Enrico Rinaldi, and Pavlos Vranas. Gauged and Un-gauged: A Nonperturbative Test. 2018, [hep-th/1802.02985](#).
- [31] Chia Cheng Chang, Amy Nicholson, Enrico Rinaldi, Evan Berkowitz, Nicolas Garron, David Brantley, Henry Monge-Camacho, Chris Monahan, Chris Bouchard, M.A. Clark, Bálint Joó, Thorsten Kurth, Kostas Orginos, Pavlos Vranas, and André Walker-Loud. Nucleon axial coupling from Lattice QCD. *EPJ(Lattice 2017)21*, 2017, [hep-lat/1710.06523](#).
- [30] Evan Berkowitz, Christopher Körber, Stefan Krieg, Peter Labus, Timo Lähde, and Thomas Luu. Extracting the single-particle gap in Carbon nanotubes with Lattice Quantum Monte Carlo. *EPJ(Lattice 2017)319*, 2017, [hep-lat/1710.06213](#).
- [29] Christopher Körber, Evan Berkowitz, and Thomas Luu. Hubbard-Stratonovich-like Transformations for Few-Body Interactions. *EPJ(Lattice 2017)133*, 2017, [nucl-th/1710.03126](#).
- [28] Evan Berkowitz, Amy Nicholson, Chia Cheng Chang, Enrico Rinaldi, M.A. Clark, Bálint Joó, Thorsten Kurth, Pavlos Vranas, and André Walker-Loud. Calm Multi-Baryon Operators. *EPJ(Lattice 2017)344*, 2017, [hep-lat/1710.05642](#).
- [27] Evan Berkowitz, Gustav R. Jansen, Kenneth McElvain, and André Walker-Loud. Job Management and Task Bundling. *EPJ(Lattice 2017)335*, 2017, [hep-lat/1710.01986](#).
- [26] Enrico Rinaldi, Evan Berkowitz, Masanori Hanada, Jonathan Maltz, and Pavlos Vranas. Toward Holographic Reconstruction of Bulk Geometry from Lattice Simulations. *Journal of High Energy Physics*, 2:42, 2018, [hep-th/1709.01932](#).
- [25] Christopher Körber, Evan Berkowitz, and Thomas Luu. Sampling General N-Body Interactions with Auxiliary Fields. *EPL (Europhysics Letters)*, 119(6):60006, 2017, [nucl-th/1706.06494](#).
- [24] Evan Berkowitz, David Brantley, Chris Bouchard, Chia Cheng Chang, M. A. Clark, Nicholas Garron, Bálint Joó, Thorsten Kurth, Chris Monahan, Henry Monge-Camacho, Amy Nicholson, Kostas Orginos, Enrico Rinaldi, Pavlos Vranas, and André Walker-Loud. An Accurate Calculation of the Nucleon Axial Charge with Lattice QCD. 2017, [hep-lat/1704.01114](#).
- [23] Evan Berkowitz. **METAQ: Bundle Supercomputing Tasks**. 2017, [physics.comp-ph/1702.06122](#).

- [22] Evan Berkowitz, Chris Bouchard, Chia Cheng Chang, M. A. Clark, Bálint Joó, Thorsten Kurth, Christopher Monahan, Amy Nicholson, Kostas Orginos, Enrico Rinaldi, Pavlos Vranas, and André Walker-Loud. *Möbius Domain-Wall fermions on gradient-flowed dynamical HISQ ensembles*. *Phys. Rev. D*, 96:054513, Sep 2017, [hep-lat/1701.07559](#).
- [21] Amy Nicholson, Evan Berkowitz, Chia Cheng Chang, M. A. Clark, Balint Joo, Thorsten Kurth, Enrico Rinaldi, Brian Tiburzi, Pavlos Vranas, Andre Walker-Loud. Neutrinoless double beta decay from lattice QCD. *PoS(LATTICE 2016)017*, 2016, [hep-lat/1608.04793](#).
- [20] Evan Berkowitz. Supergravity from Gauge Theory. *PoS(LATTICE 2016)238*, 2016, [hep-lat/1608.01951](#).
- [19] Evan Berkowitz, Enrico Rinaldi, Masanori Hanada, Goro Ishiki, Shinji Shimasaki, and Pavlos Vranas. Precision lattice test of the gauge/gravity duality at large N . *Phys. Rev. D*, 94:094501, Nov 2016, [hep-lat/1606.04951](#).
- [18] Evan Berkowitz, Enrico Rinaldi, Masanori Hanada, Goro Ishiki, Shinji Shimasaki, Pavlos Vranas. Supergravity from Do-brane Quantum Mechanics. 2016, [hep-th/1606.04948](#).
- [17] Evan Berkowitz, Masanori Hanada, and Jonathan Maltz. A Microscopic Description of Black Hole Evaporation via Holography. *International Journal of Modern Physics D*, 2016, [hep-th/1603.03055](#). Honorable Mention in Gravity Research Foundation 2016 Essay Competition.
- [16] Evan Berkowitz, Masanori Hanada, and Jonathan Maltz. Chaos in Matrix Models and Black Hole Evaporation. *Phys. Rev. D*, 94:126009, Dec 2016, [hep-th/1602.10473](#).
- [15] Amy Nicholson, Evan Berkowitz, Enrico Rinaldi, Pavlos Vranas, Thorsten Kurth, Bálint Joó. Two-nucleon scattering in multiple partial waves. *PoS(LATTICE 2015)083*, 2015, [hep-lat/1511.02262](#).
- [14] Thorsten Kurth, Evan Berkowitz, Enrico Rinaldi, Pavlos Vranas, Amy Nicholson, Mark Strother, and André Walker-Loud. Nuclear Parity Violation from Lattice QCD. *PoS(LATTICE 2015)329*, 2015, [hep-lat/1511.02260](#).
- [13] Evan Berkowitz. Lattice QCD and Axion Cosmology. *PoS(LATTICE 2015)236*, 2015, [hep-lat/1509.02976](#).
- [12] Evan Berkowitz, Thorsten Kurth, Amy Nicholson, Bálint Joó, Enrico Rinaldi, Mark Strother, Pavlos M. Vranas, and André Walker-Loud. Two-Nucleon Higher Partial-Wave Scattering from Lattice QCD. *Physics Letters B*, 765:285 – 292, 2017, [hep-lat/1508.00886](#).
- [11] Evan Berkowitz, Michael I. Buchoff, and Enrico Rinaldi. Lattice QCD Input for Axion Cosmology. *Phys. Rev.*, D92:034507, 2015, [hep-ph/1505.07455](#).
- [10] Appelquist *et al.* (The Lattice Strong Dynamics Collaboration). Detecting Stealth Dark Matter Directly through Electromagnetic Polarizability. *Phys. Rev. Lett.*, 115:171803, Oct 2015, [hep-ph/1503.04205](#). PRL Editor’s Suggestion.
- [9] Appelquist *et al.* (The Lattice Strong Dynamics Collaboration). Composite Bosonic Baryon Dark Matter on the Lattice: $SU(4)$ Baryon Spectrum and the Effective Higgs Interaction. *Phys. Rev.*, D89:094508, 2014, [hep-lat/1402.6656](#).
- [8] Evan Berkowitz. *Some Novel Phenomena at High Density*. PhD thesis, University of Maryland, College Park, April 2013. <http://drum.lib.umd.edu/handle/1903/14096>.
- [7] Evan Berkowitz, Thomas D. Cohen, and Patrick Jefferson. Multi-channel S-Matrices From Energy Levels In Finite Boxes. 2012, [hep-lat/1211.2261](#).

- [6] Paulo F. Bedaque, Evan Berkowitz, and Srimoyee Sen. Thermodynamics of Nuclear Condensates and Phase Transitions in White Dwarfs. 2012, [astro-ph/1206.1059](#).
- [5] Paulo F. Bedaque, Evan Berkowitz, and Aleksey Cherman. Neutrino Emission from Helium White Dwarfs with Condensed Cores. 2012, [nucl-th/1203.0969](#).
- [4] Paulo F. Bedaque, Evan Berkowitz, Geoffrey Ji, and Nathan Ng. [Electron Shielding of Vortons in High-Density Quark Matter](#). *Phys. Rev. D*, 85:043008, Feb 2012, [nucl-th/1112.1386](#).
- [3] Paulo F. Bedaque, Evan Berkowitz, and Srimoyee Sen. [Stable Vortex Loops in Two-Species BECs](#). *Journal of Physics B: Atomic, Molecular and Optical Physics*, 45(22):225301, 2012, [cond-mat.quant-gas/1111.4507](#).
- [2] Paulo F. Bedaque, Evan Berkowitz, and Aleksey Cherman. [Nuclear Condensate and Helium White Dwarfs](#). *The Astrophysical Journal*, 749(1):5, 2012, [nucl-th/1111.1343](#).
- [1] Paulo F. Bedaque, Evan Berkowitz, and Aleksey Cherman. [Vortons in Dense Quark Matter](#). *Phys. Rev. D*, 84(2):023006, Jul 2011, [nucl-th/1102.4795](#).

Talks

Arranged by subject, and then reverse-chronologically.

Black Holes and Supersymmetric Do-Brane Quantum Mechanics

- 4. Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory, and Holography, 2 February 2018, International Centre for Theoretical Sciences, Tata Institute of Fundamental Research, Bangalore, India
- 3. LATTICE 2016, 29 July 2016, Southampton, England
- 2. Particle Theory Seminar, 10 May 2016, University of Washington, Seattle, WA
- 1. Nuclear Theory Seminar, 21 April 2016, Lawrence Berkeley National Laboratory, Berkeley, CA

The Nucleon Axial Coupling from Lattice QCD

- 4. Nuclear Theory Seminar, 14 September 2017, University of Maryland, College Park, Maryland
- 3. [Seminare Institut für Theoretische Physik II](#), 29 June 2017, Ruhr-Universität Bochum, Bochum, Germany
- 2. [Invited Talk](#), OLCF Users Meeting, 23 May 2017, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1. [Low Energy Probes of New Physics](#), 15 May 2017, Mainz Institute for Theoretical Physics, Johannes Gutenberg Universität Mainz, Mainz, Germany

Neutrinoless Double Beta Decay from Lattice QCD

- 5. [Physics Colloquium](#), 23 February 2018, San Diego State University, San Diego, California
- 4. Seminare Helmholtz-Institut für Strahlen- und Kernphysik, 27 June 2017, Universität Bonn, Bonn, Germany
- 3. [Matter over Antimatter: The Sakharov Conditions after 50 Years](#), 9 May 2017, Lorentz Center, Universiteit Leiden, Leiden, The Netherlands
- 2. [ACFI Seminar](#), 2 February 2017, Amherst Center for Fundamental Interactions, UMass Amherst, Amherst, MA

1. [NUCLEAR16](#), 9 September 2016, Kavli Institute for Theoretical Physics, Santa Barbara, CA

Lattice QCD Input to Axion Cosmology and Axion Bounds from Pure Glue

11. [Axions at the Crossroads: QCD, dark matter, astrophysics](#), 20 November 2017, ECT*, Trento, Italy
10. Axion Meeting, 7 January 2016, Lawrence Berkeley National Laboratory, Berkeley, CA
9. ITS/HEP Seminar, 20 October 2015, University of Oregon, Eugene, OR
8. [Intersections of BSM Phenomenology and QCD for New Physics Searches INT-15-3](#), 13 October 2015, Institute for Nuclear Theory, Seattle, WA
7. Postdoc Seminar Series, 22 September 2015, Lawrence Livermore National Laboratory, Livermore, CA
6. [Workshop on Microwave Cavity Design for Axion Detection](#), 27 August 2015, Lawrence Livermore National Laboratory, Livermore, CA
5. Quantum Hadron Physics Seminar, 27 July 2015, RIKEN, Wako, Japan
4. [Lattice 2015](#), 16 July 2015, Kobe, Japan
3. Nuclear Theory Seminar, 25 June 2015, MIT, Cambridge, MA
2. Nuclear Physics Seminar, 17 June 2015, University of Maryland, College Park, MD
1. [Lattice for Beyond the Standard Model Physics Workshop](#), 23 April 2015, Lawrence Livermore National Laboratory, Livermore, CA

Nucleon-Nucleon Scattering from First Principles

5. [INT 17-2a and 17-67w](#), Lattice QCD for Neutrinoless Double Beta Decay, Institute for Nuclear Theory, Seattle, Washington.
4. [LATTICE 2017](#), Grenada, Spain.
3. INT-16-I, 6 May 2016, Institute for Nuclear Theory, Seattle, WA
2. Nuclear & High Energy Physics Seminar, 13 August 2015, Lawrence Livermore National Laboratory, Livermore, CA
1. [2014 SciDAC PI Meeting](#), 31 July 2015, Office of Advanced Scientific Computing Research, Washington, DC, with Thorsten Kurth

Job Management and Task Bundling

1. [LATTICE 2017](#), Grenada, Spain.

Nuclear Condensation of Dense Helium

6. Triangle Nuclear Theory (TNT) Colloquium, 23 April 2013, NC State, Raleigh, NC
5. Nuclear physics seminar & thesis defense, 8 April 2013, University of Maryland, College Park, MD
4. Nuclear physics seminar, 24 December 2012, Stony Brook University, Stony Brook, NY
3. Nuclear physics seminar, 7 December 2012, Institute for Nuclear Theory, Seattle, WA
2. Nuclear & High Energy Physics Seminar, 5 December 2012, Lawrence Livermore National Laboratory, Livermore, CA
1. Nuclear Theory Seminar, 4 December 2012, Lawrence Berkeley National Laboratory, Berkeley, CA

Vortons: Stable Vortex Loops at High Density

2. High Energy Physics Seminar, 7 February 2012, Tel Aviv University, Tel Aviv, Israel
1. Nuclear Physics Seminar, 26 January 2011, University of Maryland, College Park, MD

Conferences, Programs, Meetings & Workshops

- AUGUST 2018 *XIII Quark Confinement and the Hadron Spectrum*
Maynooth University, Maynooth, Ireland
- JULY 2018 *LATTICE 2018*
East Lansing, Michigan
- JULY 2018 *XXII International Conference on Few-Body Problems in Physics (FB22)*
Caen, France
- MAY 2018 *Numerical Approaches to Holography, Quantum Gravity and Cosmology*
Higgs Centre for Theoretical Physics, University of Edinburgh, Edinburgh, Scotland
- JANUARY 2018 *Nonperturbative and Numerical Approaches to Quantum Gravity, String Theory, and Holography*
International Center for Theoretical Sciences, Tata Institute of Fundamental Research,
Bangalore, India
- DECEMBER 2017 *Technical Advances in Lattice Field Theory*
CP3-Origins, Odense, Denmark
- NOVEMBER 2017 *Axions at the Crossroads: QCD, dark matter, astrophysics*
ECT*, Trento, Italy
- OCTOBER 2017 *Computational Sciences and Reality*
Physikzentrum Bad Honnef, Bad Honnef, Germany
- JULY 2017 *Neutrinoless Double Beta Decay INT-17-2a and INT-17-67W*
Institute for Nuclear Theory, Seattle, Washington
- JUNE 2017 *LATTICE 2017*
Granada, Spain
- SPRING 2017 *OLCF Users Meeting*
Oak Ridge National Laboratory, Oak Ridge, Tennessee
- SPRING 2017 *Matter over Antimatter: The Sakharov Conditions After 50 Years*
Lorentz Center, Universiteit Leiden, Leiden, The Netherlands
- SUMMER 2016 *Frontiers in Nuclear Physics*
Kavli Institute for Theoretical Physics, Santa Barbara, California
- JULY 2016 *LATTICE 2016*
University of Southampton, Southampton, United Kingdom
- SPRING 2016 *Nuclear Physics from Lattice QCD INT-16-1*
Institute for Nuclear Theory, Seattle, Washington
- OCTOBER 2015 *Intersections of BSM Phenomenology and QCD for New Physics Searches INT-15-3*
Institute for Nuclear Theory, Seattle, Washington
- JULY 2015 *Numerical Approaches to the Holographic Principle, Quantum Gravity and Cosmology*
Yukawa Institute for Theoretical Physics, Kyoto University, Kyoto, Japan
- JULY 2015 *LATTICE 2015*
Kobe, Japan
- APRIL 2015 *Lattice for Beyond the Standard Model Physics*
Lawrence Livermore National Laboratory, Livermore, California
- DECEMBER 2014 *USQCD QUDA Workshop*
Fermilab, Batavia IL.
- JULY 2014 *2014 SciDAC PI Meeting*
Office of Advanced Scientific Computing Research, Washington, DC
- ◇ *Wick Contractions for Nucleon-Nucleon Scattering and Matrix Elements.* E. Berkowitz, T. Kurth,
M. Strother.
- ◇ *Nuclear Parity Violation from Lattice QCD.* E. Berkowitz, T. Kurth, A. Walker-Loud.
- ◇ *Bootstrap Algebraic Multigrid and Lattice QCD.* E. Berkowitz, R. Falgout, C. Schroeder.
- JUNE 2014 *LATTICE 2014*
Columbia University, New York NY
- DECEMBER 2013 *Lattice Meets Experiment 2013: Beyond the Standard Model*

- Brookhaven National Laboratory, Brookhaven, New York
- MARCH 2013 *Nuclear Reactions From Lattice QCD INT-13-53W*
Institute for Nuclear Theory, Seattle, Washington.
- JULY 2010 *International Nuclear Physics Conference*
University of British Columbia, Vancouver, Canada.
- JUNE 2010 *National Nuclear Physics Summer School and TRIUMF Summer Institute*
TRIUMF, Vancouver, Canada.
- MAY 2010 *Workshop on Large N Gauge Theories*
University of Maryland, College Park, Maryland.

Service

- ONGOING *Referee* — Journal of Physics B: AMO Physics, Physical Reviews B & D, Journal of High-Energy Physics, Frontiers in Nuclear Physics.
- SPRING 2018 *Organizer, March for Science, Köln* — graphic design, social media, outreach.
- SPRING 2017 *Organizer, March for Science, Bonn* — helped with logistics, volunteers, speakers, etc.
- APRIL 2015 *Organizer, Lattice for Beyond the Standard Model Physics Workshop, LLNL* — ran a three-day workshop for high-energy theorists, string theorists, and lattice QCD practitioners.
- NOVEMBER 2014 *Volunteer, Bay Area Science Festival* — helping attendees navigate and otherwise enjoy the festival.
- MARCH 2014 *Judge and Team Leader, Contra Costa County Science and Engineering Fair* — judging awards for 7th and 8th grade student projects regarding the physical sciences.
- SPRING 2013 *Judge, Northern Virginia Regional Science and Engineering Fair* — deciding awards for 11th and 12th grade students on behalf of the MIT Club of DC.
- FALL 2010 *Seminar Organizer* — planning and organizing the joint seminar for the nuclear theory and experimental groups.
- SPRING 2010 *Judge, Montgomery County Science Fair* — deciding awards on behalf of the MIT Alumni Association.
- 2008-2009 *Volunteer, Physics is Phun* — setting up and guiding hands-on demos before the main program of the UMD outreach program targeted at middle- and high-school students.
- 2006-2007 *Volunteer, Harvard-MIT Mathematics Tournament* — preparing classrooms, directing participants to rooms, and providing other logistical support for the joint Harvard-MIT Math Tournament for high school students.

Skills & Interests

- Computer Languages* — C, C++, Mathematica, Python, Scheme, MATLAB, L^AT_EX, bash, HTML/PHP. Familiar with Java, Perl, Fortran. Capable in domain specific software: QDP++, Chroma, hypre.
- Language* — Hablo un poco español, und ich spreche ein bisschen Deutsch.
- PADI Open Water Scuba Instructor* — #192443.
- Diversions* — skiing, cycling, hiking, rock climbing, billiards, puzzles and games, and sailing.

