

Department of Physics
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Appointments

2013 – Present **Director**, Wright Laboratory, Yale University
<http://wlab.yale.edu>

2013 – Present **Professor of Physics**
Yale University

2012 – 2013 **Professor of Physics**
University of Wisconsin, Madison

2009 – 2012 **Associate Professor of Physics** (with tenure)
University of Wisconsin, Madison

2006 – 2009 **Assistant Professor of Physics**
University of Wisconsin, Madison

2002 – 2006 **Chamberlain Fellow, Physicist Scientist**
Lawrence Berkeley National Laboratory, Physics Division

1996 – 2002 **Research Assistant**
University of Washington, Seattle
Center for Experimental Nuclear Physics and Astrophysics

Affiliations

Since 2008 **Senior Scientist**, Institute for Physics and Mathematics of the Universe (IPMU),
Tokyo, Japan

Since 2006 **Guest Scientist**, Lawrence Berkeley National Laboratory (LBNL),
Nuclear Science Division, Berkeley, CA, USA

Professional Development

2010 **Masters Certificate in Project Management (MCPM)**
University of Wisconsin, School of Business

Education & Degrees

2002 **Ph.D. in Physics**
“Model-Independent Measurement of the Neutral Current Interaction Rate of Solar ^8B Neutrinos with Deuterium in the Sudbury Neutrino Observatory”
University of Washington, Seattle, Washington, USA
Thesis Advisor: Prof. R.G.H. Robertson

1999 **Master of Arts (M.A.)**
Oxford University, Oxford, England

1996 **Master of Science (M.Sc.) in Physics**
University of Washington, Seattle, Washington, USA

1995 **Bachelor of Arts (B.A. Hons.) in Physics**
Oxford University, England

Research Projects & Scientific Collaborations

Since 2004 **Daya Bay** (θ_{13} Reactor Antineutrino Experiment)

- Elected Executive Board Member (2007-Present)
- US Antineutrino Detector Manager (2006-Present)
- Institutional Representative (2006-Present)
- Reactor flux working group co-convener (2011-2015)
- Nominated as Daya Bay Co-Spokesperson (Dec 2010)
- Internal reviewer for first Daya Bay physics publications (2011-2012)
- Led and supervised group of up to 22 technical and scientific staff at the University of Wisconsin and Physical Sciences Laboratory for the construction of the Daya Bay experiment
- Responsible for the overall design, assembly, and commissioning of the US contribution to the Daya Bay Antineutrino Detectors (\$11.5M)
- Responsible for the design and fabrication of the detectors' target vessels and a system for measuring the detectors' target mass
- Coordinates and manages the largest US university contribution to the Daya Bay reactor neutrino experiment

Since 2005 **CUORE** (Cryogenic Underground Observatory for Rare Events)
<http://cuore.yale.edu>

- Executive Board, Member (2014-Present)
- Collaboration Council, Chair (2012-2014)
- Collaboration Council, Member (2009-Present)
- Technical Coordinator Board, Member (2009-Present)
- Data Vetting Committee, Chair (2009-2012)
- Scientific lead for the Detector Calibration Subsystem (2006-Present)
- Responsible for the design, development and construction of a low-temperature and low-background, energy calibration system for the CUORE bolometric double beta decay experiment

Research & Development

Since 2015 **Project 8**

- Institutional representative for R&D on Project 8 neutrino mass experiment.
- Leading activities of Yale group on Project 8 simulations and slow monitoring.

Since 2011 **PROSPECT** (A Precision Oscillation and Spectrum Experiment),
<http://prospect.yale.edu>

- Co-spokesperson and founder of PROSPECT
- Leading collaboration for a high-precision measurement of the reactor antineutrino spectrum and search for very short-baseline oscillations at the High Flux Isotope Reactor (HFIR) at ORNL

Since 2010 **DM-Ice** (Dark Matter Search in Ice at the South Pole)
<http://dm-ice.yale.edu/>

- Collaborator on the DM-Ice project
- Development of ultralow-background NaI crystals for DM-Ice
- Commissioned two NaI(Tl) detectors at the South Pole (Jan-Feb 2011)
- Helped develop and build two prototype NaI dark matter detectors for deployment 2.5km deep inside the Antarctic Ice at the South Pole (May-Dec 2010).

Completed Scientific Projects

- 2002–2010 **KamLAND** (Kamioka Liquid Scintillator Antineutrino Detector)
- Scientific lead and system manager for the KamLAND full-volume (4π) calibration system.
 - Responsible for the design, construction, and operation of this calibration system which led to an improvement in KamLAND's fiducial volume uncertainty from 4.7% to 1.8% with a comparable improvement in the uncertainty of the neutrino mass splitting Δm_{12}
 - Participated in the analysis of first KamLAND data for the discovery of reactor antineutrino disappearance
- 1996–2004 **SNO** (Sudbury Neutrino Observatory)
- SNO Analysis Coordination Committee Member (2001-2003)
 - Performed a model-independent analysis of the neutral-current interaction rate with Ph.D. thesis advisor R.G.H. Robertson

Other Projects

- Since 2013 **Yale Wright Laboratory**
- Leading the scientific transformation of the Wright Nuclear Structure Laboratory (WNSL) into the Yale Wright Laboratory with a program in nuclear, particle, and astrophysics. <http://wlab.yale.edu>
- 2013-2015 **Wright Nuclear Structure Laboratory Accelerator Decommissioning**
- Led the decommissioning of the nuclear tandem accelerator in the Wright Nuclear Structure Laboratory.
 - Coordinated between the Department of Energy and Yale University the decommissioning of the accelerator systems, the disposition of equipment, and the remediation of the facility

Awards, Honors, and Fellowships

- 2016 **Breakthrough Prize in Fundamental Physics**
Co-recipient for work on SNO, KamLAND, and Daya Bay experiments
<https://breakthroughprize.org/Laureates/1>
"For the fundamental discovery and exploration of neutrino oscillations, revealing a new frontier beyond, and possibly far beyond, the standard model of particle physics"
- 2013 **APS Fellowship**
American Physical Society, nominated by DNP
"For his contributions to the highest impact experiments in neutrino physics, especially for the major roles he played in the Daya Bay and KamLAND experiments"
- 2012 **Kavli Fellow**, National Academy of Sciences,
24th Annual Kavli Frontiers of Science Symposium
- 2011–2012 **H.I. Romnes Faculty Fellowship**, University of Wisconsin
<http://www.grad.wisc.edu/research/researchfunding/nkr/warfnamed.html>

- 2009–2011 **Alfred P. Sloan Research Fellow**,
<http://www.sloan.org/fellowships/page/19>
- 2008 **Outstanding Junior Investigator Award**, DOE Office of High Energy Physics,
“Precision Studies of the Reactor Antineutrino Spectrum and the Search for θ_{13} at Daya Bay”
http://www.er.doe.gov/hep/files/pdfs/OJI_ALL_Awards.pdf
- 2008 **Outstanding Junior Investigator Award**, DOE Office of Nuclear Physics,
“Investigation of Neutrino Properties with Bolometric Detectors”
<http://www.sc.doe.gov/np/program/oji.html>
- Department of Energy (DOE) Outstanding Junior Investigator Awards in both High Energy and Nuclear Physics.
- 2004 **Michelson Postdoctoral Prize Lectureship**
Case Western Reserve University
<http://www.phys.cwru.edu/events/mppl-prior.php>
- 2003 **APS Dissertation Award in Nuclear Physics**
American Physical Society, Division of Nuclear Physics
<http://www.aps.org/praw/dissnucl/03winner.html>
“For his role in generating and analysis of the data from the Sudbury Neutrino Observatory, and the resulting resolution of the solar neutrino problem.”
- 2002-2005 **Chamberlain Fellowship**
Lawrence Berkeley National Laboratory, Physics Division, USA
- 2001 **Member of the Institute of Physics (MInstP)**
Institute of Physics (IOP), London, UK
- 2000 **Mellam Fellowship**
University of Washington, Seattle, Washington, USA
<http://www.mellam.org>
“...selected for this fellowship because of outstanding contributions to research.”
- 2000 **Dahlstrom Prize**
University of Washington, Seattle, Washington, USA
“Prize to an outstanding graduate student in experimental physics who has passed the General Exam.”
- 1996 **Sebastian Karrer Memorial Scholarship**
University of Washington, Seattle, Washington, USA
“The Karrer Memorial Scholarship ... is given to an outstanding student in the first year of graduate study.”
- 1994 – 1995 **Academic Scholarship**
Oxford University, College St. Edmund Hall, England
- 1993 **Academic Exhibition and Bursary**
Oxford University, College St. Edmund Hall, England
- 1992 – 1997 **Stipendiat der Studienstiftung des Deutschen Volkes**
(German National Academic Foundation)

<http://www.studienstiftung.de/>

1992 **Lions Club Scholarship** for cultural exchange and travel in South Africa

Teaching

2016 Spring **Modern Physical Measurements – Physics 205/206**
undergraduate level course
Yale University, Lead Instructor: Heeger

2015 Fall **Modern Physical Measurements – Physics 205/206**
undergraduate level course
Yale University, Lead Instructor: Heeger

2015 Spring **Modern Physical Measurements – Physics 205/206**
undergraduate level course
Yale University, Lead Instructor: Heeger

2014 Fall **Introduction to Nuclear Physics – Physics 524**
graduate level course
Yale University, Instructor: Heeger

2014 Spring research semester

2013 Fall research semester

2013 Spring **Experimental Methods in Nuclear, Particle, and Astrophysics – Physics 736**
graduate level course
University of Wisconsin, Instructor: Heeger

2012 Fall research semester

2012 Spring **Experimental Methods in Nuclear, Particle, and Astrophysics – Physics 736**
graduate level course
University of Wisconsin, Instructor: Heeger

2011 Fall research semester

2011 Spring **Experimental Methods in Nuclear, Particle, and Astrophysics – Physics 736**
graduate level course
University of Wisconsin, Instructor: Heeger

2010 Fall research semester

2010 Spring **Experimental Methods in Nuclear, Particle, and Astrophysics – Physics 736**
graduate level course
University of Wisconsin, Instructor: Heeger

2009 Fall **Physics in the Arts – Physics 109**
University of Wisconsin, Instructors: Heeger, Gilbert

2009 Spring research semester

- 2008 Fall **Experimental Nuclear Physics – Physics 741**
graduate level course
University of Wisconsin, Instructor: Heeger
- 2008 Spring **Physics in the Arts – Physics 109**
undergraduate course
University of Wisconsin, Instructors: Heeger, Balantekin
- 2007 Fall **Physics in the Arts – Physics 109**
undergraduate course
University of Wisconsin, Instructor: Heeger, Halzen
- 2007 Spring **Physics in the Arts – Physics 109**
undergraduate course
University of Wisconsin, Instructors: Heeger, Balantekin
- 2006 Spring research semester

Curriculum Development

- 2010 Spring **Experimental Methods in Nuclear, Particle, and Astrophysics – Physics 736**
developed graduate level course on experimental methods for a broad group of experimental and theoretical students
<http://neutrino.physics.wisc.edu/teaching/PHYS736/>
University of Wisconsin, Instructor: Heeger

Schools & Lectures

- 2015 **2015 SLAC Summer Institute “The Universe of Neutrinos”**
Lecturer,
Stanford, Paolo Alto, CA, USA, August 10-21, 2015
<http://www-conf.slac.stanford.edu/ssi/>
- 2012 **V. International Pontecorvo Neutrino Physics School,**
Lecturer,
Alushta, Crimea, Ukraine, September 6-16, 2012
<http://pontecorvosch.jinr.ru/General.html>
- 2012 **4th International Summer School on Neutrino Physics (INSS) 2012**
Lecturer,
Virginia Polytechnic Institute and State University, VA, USA, July 10-21, 2012
<http://cnp.phys.vt.edu/inss2012.html>
- 2012 **EDIT2012 – Excellence in Detectors and Instrumentation Technologies**
Lecturer,
Fermilab, Batavia, IL, USA, February 13-24, 2012
<http://detectors.fnal.gov/EDIT2012/>
- 2010 **IV. International Pontecorvo Neutrino Physics School,**
Lecturer,
Alushta, Crimea, Ukraine, September 26 – October 6, 2010
<http://pontecorvosch.jinr.ru/>

- 2009 **2009 International Neutrino Summer School**
Lecturer,
Fermilab, Batavia, IL, USA, July 6-17, 2009
<http://projects.fnal.gov/nuss/>
- 2007 **III. International Pontecorvo Neutrino Physics School,**
Lecturer,
Alushta, Crimea, Ukraine, September 16-26, 2007
<http://wwwinfo.jinr.ru/pontecorvo07/>
- 2004 **Michelson Postdoctoral Prize Lectureship,**
Case Western Reserve University, April 26-30, 2004
<http://www.phys.cwru.edu/events/mppl-prior.php>
- 2003 **AAPT-APS Neutrino Workshop**
Lecturer and Organizer, “*Neutrinos: Ghostlike Particles in the Universe*”,
Berkeley Lab, November 14, 2003
- 2002 Fall **Graduate Course Lectures in Neutrino Physics**
Guest Lecturer, UC Berkeley and LBNL
Instructor: Y. Kolomensky
- 1998 Fall **Nuclear Astrophysics – Physics 554**
Graduate Course Teaching Assistant, University of Washington
Instructor: W. Haxton
- 1995 Fall **General Physics, Laboratory Instruction and Tutorials**
Undergraduate Course Teaching Assistant, University of Washington
Instructor: Physics Education Group

Teaching Training

- Fall 2009 **DELTA Roundtables** – Integrating Research, Teaching, and Learning,
University of Wisconsin
<http://www.delta.wisc.edu/>
- June 2007 **STEMES 2007 Workshop – 11th Annual Science, Technology, Engineering,
and Mathematics Education Scholars Program**
June 12-16, 2007, Howard University, DC, USA
<http://cirtl.wceruw.org/STEMES/index.html>

Outreach Programs

- 2009 Summer **QuarkNet Summer Program, University of Wisconsin**
Supervised summer workshop with teachers from Madison West High School,
July 2009
- 2008 Summer **QuarkNet Summer Program, University of Wisconsin**
Supervised summer research project with teachers from Madison West High
School, “*Quantitative Studies of Acrylic Transmittance under UV Exposure*”,
August-September 2008

2003 Summer **QuarkNet Summer Program, LBNL**
Lecturer, “*The World of Neutrinos – Recent Results in Neutrino Astrophysics*”
Berkeley Lab, July 25, 2003

Professional Activities

2015 – 2018 Natural Sciences and Engineering Research Council (NSERC), *Member*

2015 – 2016 APS DPF, Instrumentation Award Committee, *Member*

2015 – 2017 APS Division of Particles and Fields (DPF) Executive Committee, *Member*

2014 – 2017 Nuclear Science Advisory Committee (NSAC), *Member*

2014 – 2017 High Energy Physics Advisory Panel (HEPAP), *Member*

2014 – 2015 APS Division of Nuclear Physics (DNP) Nominating Committee, *Member*

2014 – 2015 APS Division of Nuclear Physics (DNP) Long Range Planning Group, *Member*

2014 – Present US Atlas Project Advisory Group, *Member*

2014 – Present Journal of Physics G, *Associate Editor*

2013 DOE Office of Science, High Energy Physics, FNAL S&T Review Committee

2013 – Present Physics Letters B (PLB), *Referee*

2012 – 2013 APS DPF, Community Summer Study 2013, <http://www.snowmass2013.org>
Neutrino Oscillations in the 3-Neutrino Framework, *Convener*
Non-Accelerator Underground Facilities, *Convener*

2012 APS DPF, Community Planning Meeting 2012, <http://www.snowmass2013.org>
Local Organizing Committee, *Member*

2012 – 2013 APS Division of Particles and Fields, Nominating Committee, *Member*

2012 – Present European Physics Journal C, *Associate Editor*

2012 – Present Defense Threat Reduction Agency (DTRA), *Reviewer*

2012 – Present French Research Agency (ANR), *Reviewer*

2011 – Present GACR Czech Science Foundation, *Reviewer*

2010 – Present DOE Office of Science, High Energy Physics, *Reviewer*

2010 – Present DOE Office of Science, Nuclear Physics, *Reviewer*

2010 – Present Natural Sciences and Engineering Research Council (NSERC), *Reviewer*

2009 – 2013 APS Committee on International Scientific Affairs (CISA)

- Chair of APS CISA (2011-2012)
- <http://www.aps.org/about/governance/committees/cisa/>
- Initiated and organized trial of digital access to APS Meetings (2011)
<http://www.aps.org/publications/apsnews/201104/indico.cfm.html>
<http://www.aps.org/publications/apsnews/201110/meetingslides.cfm.html>
<http://www.aps.org/units/fip/newsletters/201109/heeger.cfm.html>
<http://agenda.hep.wisc.edu/conferenceDisplay.py?confId=483>
- Leading development of the APS US-China program (2010-Present)
- Chaired subcommittee on future international activities of APS

2009 – Present Physical Review C, *Referee*

2007 – Present	Journal of Applied Physics, <i>Referee</i>
2007 – Present	National Science Foundation, <i>Reviewer and Panel Reviewer</i>
2007 – 2010	National Nuclear Physics Summer School Steering Committee, <i>Member</i>
2007	APS Division of Nuclear Physics Long Range Plan, <i>Working Group Member</i>
2005	APS California Section Executive Committee, <i>Member-at-Large</i>
2004 – 2005	Civilian Research & Development Foundation (CRDF), <i>Review Panel Member</i>
2003 – 2004	APS Neutrino Study, <i>Working Group Member</i>
2004	APS Forum on Graduate Student Affairs (FGSA), <i>Past-Chair</i>
2004	APS Committee on Membership, <i>Member</i>
2003	APS Forum on Graduate Student Affairs (FGSA), <i>Chair</i>
2003	APS CAM2003, <i>Conference Organizing Committee, Co-Chair</i>
2002 – 2003	Lawrence Berkeley National Laboratory, <i>Neutrino Planning Group, Member</i>
2002	APS Forum on Graduate Student Affairs (FGSA), <i>Chair-Elect, Program Chair</i>
2002 – Present	Nuclear Instrumentation and Methods, <i>Referee</i>
2002	Lobbying Congress with the APS Office of Public Affairs
1996 – Present	Member of the American Physical Society (APS) European Physical Society (EPS) German Physical Society (DPG) Institute of Physics (IOP)

Conference Organization

- 2015 *Workshop on the Intermediate Neutrino Program*
Scientific Advisory Committee, Member
Reactor Working Group, Co-convener
BNL, February 4-6, 2014
<http://www.bnl.gov/winp/>
- 2013 *IceCube Particle Astrophysics Symposium (IPA2013)*
Organizing Committee Member,
Madison, WI, USA, May 13-15, 2013
<http://wipac.wisc.edu/meetings/home/ipa2013>
- 2013 *Snowmass Intensity Frontier Neutrino Workshop*
Working group convener,
SLAC, CA, USA, March 6-7, 2013
<https://indico.fnal.gov/conferenceDisplay.py?confId=6122>
- 2012 *Community Planning Meeting (CMP2012)*
Local Organizing Committee Member,
Fermilab, Batavia, IL, USA. October 11-13, 2012
<http://www.snowmass2013.org/>
- 2012 *NNN12 – 12th International Workshop on Next Generation Nucleon Decay and Neutrino Detectors,*
Co-Chair of the Organizing Committee
Fermilab, Batavia, IL, USA. October 4-7, 2012
<http://conferences.fnal.gov/nnn12/>
- 2012 *First Joint Scientific Session of the Chinese Physical Society (CPS) and the American Physical Society (APS) at CPS Annual Meeting,*
Chair of the Organizing Committee
Guangzhou, China, September 22, 2012
<http://www.aps.org/programs/international/conferences/cps2012.cfm>
- 2012 *Neutrinos and Dark Matter – US-China School for Young Physicists*
Co-Chair of the Organizing Committee
Shanghai, China, September 16-20, 2012
<http://www.physics.sjtu.edu.cn/spcs/>
- 2010 *The Future of Neutrino Mass Measurements: Terrestrial and Astrophysical Measurements in the Next Decade,*
Lead Workshop Organizer
Institute for Nuclear Theory, University of Washington, Seattle, WA, USA,
February 8-11, 2010
<http://www.int.washington.edu/PROGRAMS/10-44w.html>
- 2009 *Neutrinos and Dark Matter (NDM09),*
Co-Chair of the Organizing Committee
Madison, WI, USA, August 31-September 5, 2009
<http://www.physics.wisc.edu/ndm09/>
- 2009 *CIPANP09: Intersection of Particle and Nuclear Physics,*
Convener for session on “Nuclear and Particle Astrophysics”

- San Diego, CA, USA, May 26-31, 2009
<http://groups.physics.umn.edu/cipanp2009>
- 2005 *Neutrino Physics Planning Meeting at PANIC05,*
 Member of the Organizing Committee
Santa Fe, NM, USA, October 28-30, 2005
<http://panic05.lanl.gov/index.php?link=satellite>
- 2005 *APS California Section Meeting,*
 Member of the Program Committee
Sacramento, CA, USA, October 21-22, 2005
<http://aps-ca.lbl.gov/>
- 2003 *Neutrinos: Ghostlike Particles in the Universe,*
 APS-AAPT Workshop for Teachers and Students, Co-Organizer
Berkeley, CA, USA, November 14, 2003
<http://pdg.lbl.gov/aapt-aps/workshop.html>
- 2003 *The Future of Physics Education and the Fate of the Universe,*
 AAPT California-Nevada and APS California Section Meeting,
 Member of the Organizing Committee
Berkeley, CA, USA, November 14-15, 2003
<http://pdg.lbl.gov/aapt-aps/>
- 2003 *CAM2003 – Canadian, American, Mexican Graduate Student Conference*
 Student Visions for Physics in the 21st Century,
 Co-Chair of the US Advisory Committee for CAM2003
Merida, Mexico, October 24-27, 2003
<http://www.mda.cinvestav.mx/cam2003>
- 1999 *8th US Symposium of the German National Academic Foundation*
 Member of the Local Organizing Committee
Seattle, Washington, USA, 1999

University and Department Service

- 2015-2016 Yale University
 - Machine shop advisory committee
Yale University, Physics Department
 - Faculty search committee in nuclear, particle, and astrophysics
 - Target of opportunity committee
 - Space committee, *co-chair*
 - Safety committee
 - Physics colloquium committee
- 2014-2015 Yale University
 - Machine shop advisory committee
Yale University, Physics Department
 - Space committee, *co-chair*
 - Strategic planning committee
 - Target of opportunity committee
 - Graduate admissions committee
 - Safety Committee

- 2013-2014 Yale University
 - Keasbey Scholarship Committee
Yale University, Physics Department
 - Graduate Admissions Committee
 - Safety Committee
 - Promotions Committee
- 2012-2013 University of Wisconsin, Physics Department
 - Computing & IT Committee
 - Scientist Committee
- 2011-2012 University of Wisconsin, Physics Department
 - Department Board of Visitor Committee
 - Faculty&Staff Recognition Committee
 - Amenities Committee
 - UW campus China Initiative
- 2010-2011 University of Wisconsin, Physics Department
 - Faculty Search Committee in Experimental Neutrino Physics (chair)
 - Strategic Planning Committee
 - New Staff Committee
 - Graduate Program Committee
 - Graduate Student Admissions & Fellowships Committee
 - Colloquium Committee
- 2009-2010 University of Wisconsin, Physics Department
 - Strategic Planning Committee
 - New Staff Committee
 - Web Committee
 - Computing & IT Committee
 - Colloquium Committee
- 2008-2009 University of Wisconsin, Physics Department
 - Graduate Program Committee
 - Graduate Student Admissions & Fellowships Committee
 - Colloquium Committee
 - Computing & IT Committee
- 2007-2008 University of Wisconsin, Physics Department
 - Graduate Student Admissions & Fellowships Committee
 - Colloquium Committee
 - Committee on Introductory Courses, Labs, and Lecture Room
 - Physics Library Committee

Advising and Mentoring

Currently advising, mentoring, and supervising 4 graduate students, 3 postdocs, and 3 scientists. Graduated 6 PhD students and 1 M.Sc. student.

Scientist/Researcher

Dr. James Nikkel	Feb 2016 – Present	Associate Scientist
Dr. Henry Band	Oct 2007 – Present	Senior Scientist
Thomas Wise	Oct 2006 – Present	Researcher

- won 2008 UW Chancellor's Award for Excellence in Research

Postdoctoral Fellows

Dr. Thomas Langford	Oct 2013 – Present
Dr. Kyungeun Lim	Mar 2013 – Present
Dr. Walter Pettus	Aug 2015 – Present

Graduate Students

Luis Saldana Sep 2015 – Present
Project: Project 8

Jeremy Gaison Aug 2015 - Present
Thesis: Measurement of the Reactor Antineutrino Spectrum from ^{235}U with PROSPECT

Danielle Norcini Sep 2014 - Present
Thesis: Search for eV-scale sterile neutrinos with PROSPECT
- won 2015 APS PDF travel award for student presentation

Jeremy Cushman Sep 2013 – Present
Thesis: Search for neutrinoless double beta decay with CUORE

Former Group Members

Postdoctoral Fellows and Scientists

Dr. Ke Han	Oct 2014 – Feb 2016	Assistant Professor, SJTU, China
Dr. David Webber	Jun 2010 – Sep 2013	Data scientist in industry
Dr. Daniel Lenz	Apr 2010 – Dec 2011	Development engineer in industry
Dr. Wei Wang	Jul 2007 – Jul 2011	Associate Professor, Sun Yat-Sen University, China
Dr. S. Sangiorgio	Oct 2007 – Mar 2010	Scientist, LLNL

Graduate Students

Walter Pettus May 2010 – June 2015 Postdoctoral researcher at Yale University
Thesis: "Cosmogenic Activation in NaI Detectors for Dark Matter Searches"
- won a 2011 DOE NNSA Stewardship Science Graduate Fellowship
- won invitation to 2012 Lindau Nobel Laureate Meeting

Adam Dally May 2010 – Jan 2015 Research Scientist in industry
Thesis: "Towards a precise energy calibration of the CUORE double beta decay experiment"

Christine Lewis May 2008 – February 2014 Research staff at Institute for Defense Analysis
Thesis: "Precision Measurement of the Reactor Antineutrino Spectrum at Daya Bay and Search for Non-Standard Interactions"

Michael McFarlane Jan 2007 – May 2014 Product engineer in industry
Thesis: "Measurement of θ_{13} Oscillations at Daya Bay: Evidence of Spectral Distortion"

Larissa Ejzak Jan 2007 – May 2013 Scientific editor
Thesis: "Calibrating the CUORE Bolometer Array: In Search of Neutrinoless Double Beta Decay"
 - honorable mention in the 2007 NSF Graduate Fellowship Competition

Bryce Littlejohn Jan 2007 – May 2012 Assistant Professor at IIT
PhD Thesis: "Observation of Electron Antineutrino Disappearance at Daya Bay"
 - won 2008 NSF East Asia and Pacific Summer Institute Fellowship

Daniel Passmore Jan 2007 – Jun 2007 Application scientist in industry
M.Sc.Thesis: "Precision Measurement of the Target Mass in the Daya Bay Antineutrino Detectors"

Undergraduate Researchers

Name/Institution	Years	Awards/Current Position
Nate Stemen	Summer 2015	- poster presentation at 2015 APS Division of Nuclear Physics Meeting, Conference Experience for Undergraduates (CEU), Santa Fe, NM
NYU, Yale University	Summer 2014	
Benjamin Weiner	Jan 2015 – May 2015	- postgraduate studies
Yale University		
Karl Medina	Jan 2015 – May 2014	- UIUC graduate school
Yale University		
Pingchuan Zhao	Sep 2012 – Sep 2013	- graduate school
Univ. of Wisconsin		
Jess Clark	Jan 2012 – Nov 2012	- high-school science teacher education in Madison
Univ. of Wisconsin		
Jesse Nims	May 2011 – May 2012	- UC Berkeley graduate school
Univ. of Wisconsin		
Benjamin Broerman,	Jun 2010 – May 2012	- now graduate student at Queen's University, ON, Canada
Univ. of Wisconsin		- won a 2011-2012 Wisconsin Hilldale Undergraduate/Faculty Research Fellowship
		- poster presentation at 2011 APS Division of Nuclear Physics Meeting, Conference Experience for Undergraduates (CEU), East Lansing, MI
		- won 2010 DOE/INFN summer research fellowship
Ian Guinn,	Sep 2009 – May 2012	- poster presentation at 2010 APS Division of Nuclear Physics Meeting, Conference Experience for Undergraduates (CEU), Santa Fe, NM
Univ. of Wisconsin		
Alex Green,	Sep 2009 – Jun 2011	- poster presentation at 2010 APS Division of Nuclear Physics Meeting, Conference Experience for

Univ. of Wisconsin		Undergraduates (CEU), Santa Fe, NM
Jacob Swan, Univ. of Wisconsin	Sep 2009 – Feb 2010	
Jacqueline Houston, Univ. of Wisconsin	Aug 2008 – Aug 2009	
Patrick Mende, Univ. of Wisconsin	Sep 2007 – Aug 2009	- now graduate student at Carnegie Mellon University - won 2007-08 Liebenberg Family Undergraduate Research Scholarship, University of Wisconsin - poster presentation at 2008 APS Division of Nuclear Physics Meeting, Conference Experience for Undergraduates (CEU), Oakland, CA - presentation at 2008 Undergraduate Research Symposium, University of Wisconsin
Ho Ling Li, Univ. of Wisconsin	Sep 2006 – Aug 2008	- now graduate student at University of Chicago - presentation at 2008 Undergraduate Research Symposium, University of Wisconsin - poster presentation at 2007 APS Division of Nuclear Physics Meeting, Conference Experience for Undergraduates (CEU), Newport News, VA
Dan Zou, Univ. of Wisconsin	Sep 2006 – Aug 2008	- now graduate student at University of Chicago - won 2007 Hilldale Undergraduate Research Fellowship, University of Wisconsin - presentation at 2008 Undergraduate Research Symposium, University of Wisconsin
Jason Ma, Cal Poly & LBNL	Summer 2004	<i>project: "Baseline Optimization for a New Reactor Neutrino Experiment to Measure θ_{13}"</i>
Brian Perry, Cal Poly & LBNL	Summer 2003	<i>project: "Development of a New Calibration System for KamLAND"</i>
Steven Furlanetto, Carleton College	Summer 1999	REU student, University of Washington, now Associate Professor at UCLA <i>project: "Sensitivity of SNO to Neutrino Oscillation Using Charged-Current Spectrum Data"</i>
Toshiko Asai, University of Washington	Summer 1998	<i>project: "Determination of the Photodisintegration Background from ^{238}U and ^{232}Th in SNO"</i>
Lincoln Webbeking, University of Washington	Summer 1997	<i>project: "Microdischarge Studies of Neutral Current Detector Components"</i>

PhD Exams

Matteo Biassoni, University of Milan, Italy
Member of the PhD committee, Advisor: Prof. Oliviero Cremonesi, February 11, 2013

Bryce Littlejohn, University of Wisconsin, USA
Thesis Advisor, May 11, 2012

Carl Pfender, University of Wisconsin, USA
Member of the PhD committee, Advisor: Prof. Stefan Westerhoff, February 13, 2012

Gwynne Crowder, University of Wisconsin, USA
Member of the PhD committee, Advisor: Prof. Dan McCammon, January 17, 2012

Mike Baker, University of Wisconsin, USA
Member of the PhD committee, Advisor: Prof. Teresa Montaruli, November 10, 2011

Kai Wang, University of Wisconsin, USA
Member of the PhD committee, Advisor: Prof. Tao Han, May 7, 2008

Jessica Hodges, University of Wisconsin, USA
Member of the PhD committee, Advisor: Prof. Albrecht Karle, May 11, 2007

Samuele Sangiorgio, Università dell'Insubria, Como, Italy
External examiner to the PhD committee, Advisor: Prof. Andrea Giuliani, February 23, 2007

Technical Staff

PROSPECT

Jeff Cherwinka (senior engineer), Jeff Ashenfelter (logistics), Frank Lopez (research technician)

Daya Bay

Jeff Cherwinka (senior engineer), Lee Greenler (senior engineer), Dan Wenman (senior engineer), Qiang Xiang (senior engineer), Dan Wahl (electrical engineer), Harold Mattison (electrical engineer), Darrel Hamilton (technician), Andrew Arbuckle (technician), Amy Pagac (designer), Jonathan Heise (project support specialist)

CUORE

Ken Kriesel (senior engineer), Glen Gregerson (designer)

DM-Ice

Jeff Cherwinka (senior engineer), Glen Gregerson (designer), Darrel Hamilton (technician)

International and Professional Experience

- Conducted research and managed scientific projects in Antarctica, China, Italy, Japan, Canada, and the USA.
- Directed the Yale Wright Laboratory with over 65 scientific personnel, faculty, postdocs and students. Led the transformation of the Wright Nuclear Structure Laboratory into the Yale Wright Laboratory.
- Managed and supervised up to 22 technical and scientific staff during the construction of the Daya Bay experiment in China. Coordinated the activities of about 50 people in the US, China, and Taiwan as US manager for the Daya Bay antineutrino detectors, and level-2 manager of the Daya Bay project
- Traveled in Antarctica, New Zealand, Iceland, Egypt, Ukraine, Japan, China, Hong Kong, Vietnam, South Africa, Mexico, Canada, USA, and many countries in Europe.

Languages

German (native)
English (fluent)
French (comprehension)

Other Interests

Enjoys playing the violin, climbing, and skiing.

Citation Summary

For a full up-to-date citation analysis see

http://inspirehep.net/search?ln=en&ln=en&p=find+author+heeger%2C+k&of=hcs&action_search=Search&sf=&so=d&rm=&rg=25&sc=0

Refereed Journal Articles

For a complete list of SPIRES HEP listing see:

http://inspirehep.net/search?ln=en&ln=en&p=find+author+heeger%2C+k&of=hb&action_search=Search&sf=&so=d&rm=&rg=25&sc=0

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arXiv:1602.05939, submitted to PRL

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J. Ashenfelter et al (PROSPECT Collaboration)
arXiv: 1512.02202, submitted to Journal of Physics G

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9. *CUORE and beyond: bolometric techniques to explore inverted neutrino mass hierarchy*

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Elba, Italy, June 27-July 1, 2016

61. *Short-baseline Reactor Experiments*

Frontiers of Liquid Scintillator Technology (FROST)
FNAL, II, USA, March 18-20, 2016

60. *Reactor Neutrino Experiments*

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59. *Investigation of Double Beta Decay with Bolometers*

Neutrino Mass: From the Terrestrial Laboratory to the Cosmos
University of Massachusetts, Amherst Center for Fundamental Interactions
Amherst, MA, USA, December 14-16, 2015

58. *PROSPECT – A Precision Oscillation and Spectrum Experiment*

Workshop on Applied Antineutrino Physics 2015
Arlington, VA, December 7, 2015

57. *Search for Neutrinoless Double Beta Decay: Recent Results and Future Prospects*

CIPANP 2015
Vail, CO, USA, May 19-24, 2015

56. *Reactor Neutrinos: Recent Results and Future Prospects*

IPA 2015, IceCube Particle Astrophysics Symposium
Madison, WI, USA, May 4-6, 2015

55. *Reactor Neutrinos: Status and Outlook*

KITP Workshop: Neutrinos: Recent Developments and Future Challenges
KITP, Santa Barbara, CA, USA, November 4, 2014

54. *What Coordination is Necessary for Planning the Short-Baseline Neutrino Program?*

ICFA Neutrino Panel Mini Workshop, roundtable discussion
FNAL, II, USA, January 30, 2014

53. *Probing Neutrino Oscillations at Very Short Baselines with Reactors and Radioactive Sources*
NNN13: International Workshop on Next-generation Nuclear Decay and Neutrino Detectors
Kavli IPMU, Tokyo, Japan, November 11-13, 2013

52. *Prospects for Measuring the Reactor Neutrino Flux and Spectrum*
Institute for Nuclear Theory,
Seattle, WA, USA, November 8, 2013

51. *Experiments with Reactor Antineutrinos – The decade after the Solar Neutrino Problem*
Perspectives on Fundamental Symmetries and Neutrinos,
Seattle, WA, USA, September 6, 2013

50. *A Discovery Program of Neutrino Experiments,*
Snowmass on the Mississippi - Community Summer Study 2013
Minneapolis, MN, July 30, 2013

49. *Precision Studies at the Neutrino Frontier*
APS April Meeting 2013
Denver, CO, USA, April 13, 2013

48. *Reactor and Solar Neutrino Experiments – Recent Highlights and Future Opportunities*
Deutsche Physikalische Gesellschaft (plenary talk)
Dresden, Germany, March 4, 2013

47. *Experiments with Reactor Neutrinos – Recent Discoveries and Future Prospects*
Lake Louise Winter Institute (plenary lecture)
Lake Louise, Alberta, Canada, February 20, 2013

46. *Probing Neutrino Oscillations at Very Short Baselines*
Aspen Winter Workshop – New Directions in Neutrino Physics
Aspen, Co, USA, February 8, 2013

45. *Observation of Electron Antineutrino Disappearance at Daya Bay*
24th Kavli Frontiers of Science Symposium
National Academies of Sciences, Irvine, CA, USA, November 2-4, 2012

44. *Opportunities in Nuclear, Particle, and Astrophysics*
First CPS-APS Joint Session, CPS Annual Fall Meeting
Guangzhou, China, September 22, 2012

43. *Neutrino Experiments*
Nuclear Science Advisory Subcommittee
Washington, DC, USA, September 7, 2012

42. *Neutrino Oscillations and Interactions*
DNP Town Meeting on Fundamental Symmetries and Neutrinos
Chicago, IL, USA, August 10-11, 2012

41. *Recent Progress in Neutrino Physics*
Latino-American Workshop on High Energy Physics: Particles and Strings
Havana, Cuba, 15-21 July 2012 (*declined*)

40. *Neutrino Oscillation Studies with Reactor Neutrinos: Recent Results and Future Prospects*

NDM12—International Symposium on Neutrinos and Dark Matter in Nuclear Physics,
Nara, Japan, June 11-15, 2012

39. *Future Reactor Experiments*

Neutrino 2012—XXV International Conference on Neutrino Physics and Astrophysics,
Kyoto, Japan, June 3-9, 2012

38. *CUORE: Bolometric Search for Neutrinoless Double Beta Decay*

SNOLAB Opening Workshop,
SNOLAB, Sudbury, ON, Canada, May 16, 2012

37. *Observation of Electron Antineutrino Disappearance at Daya Bay and the Future of θ_{13}*

European Strategy for Neutrino Oscillation Physics – A Town Meeting
CERN, Geneva, Switzerland, May 14, 2012

36. *Precision Reactor Neutrino Physics with the Daya Bay Experiment*

Symposium on Electroweak Nuclear Physics,
Duke University, NC, USA, March 8-9, 2012

35. *Oscillation Measurements with Reactor Neutrinos: Recent Discoveries and Future Prospects*

13th Conference on Astroparticle, Particle, Space Physics, and Detectors for Physics Applications
(ICATPP11)

Villa Olmo, Como, Italy, October 3-7, 2011

34. *Antineutrino Detectors for a High-Precision Measurement of θ_{13} at Daya Bay*

Technology and Instrumentation in Particle Physics 2011 (TIPP2011)
Chicago, IL, USA, June 9-14, 2011

33. *Reactor Neutrino Oscillation Experiments: Status and Prospects*

Short Baseline Neutrino Workshop (SBNW11)
Fermilab, Batavia, IL, USA, May 12-14, 2011

32. *Systematics in Reactor Neutrino Oscillation Experiments*

12th International Workshop on Neutrino Factories, Superbeams and Beta Beams
Mumbai, India, October 20-25, 2010

31. *Status and Prospects of Neutrino Oscillation Experiments*

International Conference of Nuclear Physics, INPC2010,
Vancouver, BC, Canada, July 4-9, 2010

30. *Reactor Neutrino Experiments*

Workshop on "Low Energy" Neutrino Physics and Astrophysics with IceCube's DeepCore Sub-Array"
State College, PA, USA, July 1-2, 2010

29. *Probing Neutrino Mixing with Non-Accelerator Experiments*

APS April/AAPT Meeting 2010
Washington, DC, USA, February 13-17, 2010

28. *Reactor Neutrino Experiments: Recent Results and Future Prospects*

CTP International Conference on Neutrino Physics in the LHC Era,
Luxor, Egypt, November 15-19, 2009

27. *Understanding Neutrino Mass and Mixing with Low-Energy Experiments*

Inaugural Fall Meeting of the APS Prairie Section
Iowa City, Iowa, November 12-14, 2009

26. *A High-Precision Measurement of θ_{13} with the Daya Bay Reactor Neutrino Experiment*
TAUP 2009, International Conference on Topics in Astroparticle and Underground Physics
Laboratori Nazionali del Gran Sasso, Italy, July 1-5, 2009

25. *Understanding Neutrino Mass and Mixing with Low-Energy Experiments*
4th International Symposium on Symmetries in Subatomic Physics
Taipei, Taiwan, June 2-5, 2009

24. *Antineutrino Detectors for a High-Precision Measurement of the Neutrino Mixing Angle θ_{13} at Daya Bay*
TIPP09, Technology and Instrumentation in Particle Physics
Tsukuba, Japan, March 12-17, 2009

23. *Precision Measurements of Neutrino Oscillation Parameters with Reactor Neutrinos*
Les Rencontres de Physique de la Vallée d'Aoste
La Thuile, Aosta Valley, Italy, March 1-7, 2009

22. *Reactor Neutrino Experiments: Recent Results and Future Prospects*
TAUP 2007, International Conference on Topics in Astroparticle and Underground Physics
Sendai, Japan, September 11-15, 2007

21. *Search for the Neutrino Mixing Angle θ_{13}*
APS April Meeting
Jacksonville, FL, USA, April 14-17, 2007

20. *Future Reactor Neutrino Experiments to Measure $\sin^2 2\theta_{13}$*
Workshop on Next Generation Nucleon Decay and Neutrino Detectors 2006
Seattle, WA, USA, September 21-23, 2006

19. *Evidence of New Physics in Reactor and Solar Neutrino Experiments*
VietNam 2006 6th Rencontres du Vietnam
Hanoi, Vietnam, August 6 - 12, 2006

18. *Future θ_{13} Reactor Experiments*
Neutrino 2006
Santa Fe, NM, USA, June 13-19, 2006

17. *Measuring $\sin^2 2\theta_{13}$ with Reactor Antineutrinos*
US-Japan Seminar on "Double Beta Decay and Neutrino Mass",
2nd Joint Meeting of the Nuclear Physics Divisions of the APS and The Physical Society of Japan
Maui, HI, USA, September 17-20, 2005

16. *Measuring $\sin^2 2\theta_{13}$ with Reactor Antineutrinos at Daya Bay – An Underground Laboratory for a Multidetector Experiment*
Workshop on Exploring the Physics Frontier at the Deep Underground Laboratories,
Seattle, WA, USA, June 23-24, 2005

15. *Experimental Evidence for Neutrino Mass*
SeeSaw25, International Conference on Seesaw Mechanism
Paris, France, June 10-11, 2004

14. *Recent Discoveries in Neutrino Oscillation Physics & Prospects for the Future*
Opening Talk at the German Physical Society Meeting
Mainz, Germany, March 29 - April 1, 2004
13. *The Case for a Reactor Neutrino Disappearance Experiment to Measure θ_{13}*
Workshop on Future Low-Energy Neutrino Experiments
Niigata, Japan, March 20, 2004
12. *Results from KamLAND and Future Reactor Neutrino Experiments*
Les Rencontres de Physique de la Vallée d'Aoste,
La Thuile, France, February 29- March 6, 2004
11. *Towards a Precision Measurement of θ_{13} with Reactor Neutrinos in the US*
NOON2004, Workshop on Neutrino Oscillation and their Origin
Tokyo, Japan, February 11-15, 2004
10. *A Reactor Neutrino Experiment at Diablo Canyon*
Workshop on Future Low-Energy Neutrino Experiments
Munich, Germany, October 9-11, 2003
9. *Reactor Neutrino Experiments: KamLAND and Diablo Canyon*
Institute for Nuclear Particle Astrophysics and Cosmology (INPAC Meeting)
San Diego, October 3-5, 2003
8. *The Future of Reactor Neutrino Oscillation Experiments*
Yamada Symposium on Neutrinos and Dark Matter in Nuclear Physics (NDM03)
Nara, Japan, June 9-14, 2003
7. *Reactor Neutrino Measurement of θ_{13}*
Conference on the Intersections of Particle and Nuclear Physics
New York, NY, USA, May 19-24, 2003
6. *APS DNP Dissertation Award in Nuclear Physics Prize Talk:
Evidence for Neutrino Oscillations from SNO and KamLAND*
APS April Meeting
Philadelphia, USA, April 5-8, 2003
5. *The Resolution to the Solar Neutrino Problem: Model-Independent Evidence for Neutrino Flavor
Change at SNO*
XXXVIIIth Rencontres de Moriond: Electroweak Interactions and Unified Theories
Les Arcs, France, March 15-22, 2003
4. *Evidence for Neutrino Oscillations from SNO and KamLAND*
KITP Conference on "Neutrinos: Data, Cosmos, and Planck Scale"
Santa Barbara, USA, March 3-7, 2003
3. *Oscillation Measurements in the Solar Δm^2 Region Including KamLAND*
International Workshop on Neutrinos and Subterranean Science,
Washington, DC, USA, September 18-21, 2002
2. *Solar Neutrino Detection in KamLAND*
International Workshop on Neutrinos and Subterranean Science,

Washington, DC, USA, September 18-21, 2002

1. *First Results from the Sudbury Neutrino Observatory (SNO)*,
Euroconference on Neutrino Masses and Mixing
Les Houches, France, June 17-21, 2001

Contributed Conference Presentations

30. *PROSPECT: A Precision Reactor Oscillation and Spectrum Experiment*
14th International Conference on Topics in Astroparticle and Underground Physics (TAUP15)
Torino, Italy, September 7-11, 2015

29. *Measurement of the Reactor Antineutrino Flux and Spectrum at Daya Bay*
Joint Meeting of Nuclear Physics Divisions of DNP and JPS
Hawaii, HI, USA, October 10, 2014

28. *First Data with the Daya Bay Antineutrino Detectors*,
12th International Conference on Topics in Astroparticle and Underground Physics (TAUP11)
Munich, Germany, September 5-9, 2011

27. *Search for Neutrinoless Double Beta Decay with CUORE*,
XXIV International Conference on Neutrino Physics and Astrophysics,
Athens, Greece, June 14-19, 2010

26. *Antineutrino Detectors for a High-Precision Measurement of the Neutrino Mixing Angle θ_{13} at Daya Bay*,
XXIV International Conference on Neutrino Physics and Astrophysics,
Athens, Greece, June 14-19, 2010

25. *Status and Sensitivity of the Daya Bay Reactor θ_{13} Experiment*
Third Joint Meeting of the Nuclear Physics Divisions of the American Physical Society and The Physical Society of Japan
Hawaii, HI, USA, October 13-17, 2009

24. *Energy Calibration of the CUORE Bolometric Double Beta Decay Experiment*
Japan-US seminar on Double Beta Decay and Neutrinos,
Hawaii, HI, USA, October 11-13, 2009

23. *Design, Simulation, and Performance of the Daya Bay Antineutrino Detectors*
APS April Meeting,
Denver, CO, USA, May 2-5, 2009

22. *A Low-Temperature Calibration System for the CUORE Bolometric Double Beta-Decay Experiment*
APS Meeting of the Division of Nuclear Physics (2008)
Oakland, CA, October 26, 2008

21. *A High-Precision Measurement of $\sin^2 2\theta_{13}$ with the Daya Bay Reactor Neutrino Experiment*
Division of Nuclear Physics Town Meeting for the NSAC Long Range Plan
Chicago, IL, January 20, 2007

20. *Measuring $\sin^2 2\theta_{13}$ with Reactor Antineutrinos at Daya Bay*
APS Meeting of the Division of Nuclear Physics (2006)
Nashville, TN, October 23, 2006

19. *Measuring $\sin^2 2\theta_{13}$ with Reactor Antineutrinos at Daya Bay*
Joint APS/JPS Meeting of the Division of Nuclear Physics (2005)
Maui, HI, September 25-28, 2005
18. *Full-Volume Calibration of KamLAND and Precision Measurement of Oscillation Parameters*
Joint APS/JPS Meeting of the Division of Nuclear Physics (2005)
Maui, HI, September 17-22, 2005
17. *Full-Volume Calibration in KamLAND*
APS Division of Nuclear Physics, Bulletin of the American Physical Society vol. 49, No.6 (2004)
Chicago, IL, October 27-30, 2004
16. *Measuring θ_{13} in a Reactor Neutrino Oscillation Experiment*
APS April Meeting, Bulletin of the American Physical Society vol. 49, No.2 (2004)
Denver, CO, USA, May 1, 2004
15. *Measuring θ_{13} with Reactors*
APS Division of Nuclear Physics, Bulletin of the American Physical Society vol. 48, No.8 (2003)
Tucson, AZ, USA, October 31, 2003
14. *Reactor Neutrino Measurement of θ_{13}*
TAUP 2003 - Topics in Astroparticle and Underground Physics
Seattle, WA, USA, September 5-8, 2003
13. *Reactor Neutrino Measurement of θ_{13}*
Lepton Photon Conference (poster)
Fermilab, IL, USA, August 11-8, 2003
12. *Measuring the Neutrino Interaction Rates in SNO for Variable Fiducial Volumes*
APS April Meeting, Bulletin of the American Physical Society vol. 48, No.2 (2003)
Albuquerque, NM, USA, April 20-23, 2002
11. *Determination of the Charged-Current Rate and Energy Scale in SNO by Means of a Calibration Source-Independent Analysis of the Energy Spectrum*
APS Division of Nuclear Physics, Bulletin of the American Physical Society vol. 46, no.7 (2001)
Maui, Hawaii, USA, October 17-20, 2001
10. *Neutral-Current Detection in the Sudbury Neutrino Observatory Using Ultra-Low-Background ^3He Proportional Counters,*
EuroConference on Neutrinos in the Universe: Frontiers in Astroparticle Physics and Cosmology
Lenggries, Germany, September 30, 2001
9. *Background Studies for the Neutral Current Detector Array in SNO,*
APS Division of Nuclear Physics, Bulletin of the American Physical Society vol. 45, No.5 (2000)
Williamsburg, VA, USA, October 4-7, 2000
8. *High-Voltage Microdischarge in Ultra-Low-Background ^3He Proportional Counters,*
IEEE Nuclear Science Symposium
Seattle, Washington, USA, October 24-30, 1999
7. *Background Studies for the Neutral Current Detector Array in SNO,*
TAUP99 - Topics in Astroparticle and Underground Physics

Paris, France, September 5-10, 1999

6. *Neutral Current Detection in the Sudbury Neutrino Observatory*,
National Nuclear Physics Summer School, UCSD
San Diego, California, USA, June 28-July 9, 1999

5. *Model-Independent Constraints on Neutrino Mixing from Solar Neutrinos*,
APS Centennial Meeting, Bulletin of the American Physical Society 44, 1307 (1999)
Atlanta, Georgia, USA, March 20-26, 1999

4. *In Situ Determination of Backgrounds from Neutral Current Detectors in the Sudbury Neutrino Observatory*,
APS Division of Nuclear Physics, Bulletin of the American Physical Society 43, 1549 (1999)
Santa Fe, New Mexico, USA, October 28-31, 1998

3. *A Model Independent Analysis of the Solar Neutrino Anomaly*,
International School of Nuclear Physics, 19th Course
Erice, Sicily, 16-24 September, 1997

2. *Model-Independent Analysis of the Solar Neutrino Anomaly*,
APS Division of Nuclear Physics, Bulletin of the American Physical Society 42, 1679 (1997)
Whistler, BC, Canada, October 5-8, 1997

1. *The Energy Spectrum of ^8B Neutrinos and the Solar Neutrino Problem*,
APS Division of Nuclear Physics, Bulletin of the American Physical Society 42, 1639 (1997)
Whistler, BC, Canada, October 5-8, 1997

Public Science, Outreach, and Arts

5. *Neutrinos – Chasing The Ghost Particles in our Universe*
Tilde Science Café, <http://www.tildecafe.org>
Branford, CT, USA, December 5, 2015

5. *Art at the Yale Wright Laboratory*
Various art projects carried out jointly with Yale art students, inspired by the decommissioned accelerator of the Wright Nuclear Structure Laboratory, 2015
<http://wlab.yale.edu/arts>

4. *Neutrinos - Ghost Particles in our Universe*,
Science Saturdays – fun science lectures for kids, Yale University
New Haven, CT, USA, October 19, 2013

3. *Neutrinos and Dark Matter – The Next Frontier at the Wright Lab*,
Open House of the Yale Wright Laboratory, Yale University
New Haven, CT, USA, October 12, 2013

2. *Hunting Invisible Ghosts in the Universe*
Madison Science Pub, Wisconsin Citizens for Science, <http://madsciencepub.org/>
Madison, WI, USA, October 31, 2010

1. *From the Cultural Revolution to Nuclear Power: The Rise of Science and Technology in China*
Rotary Club Madison West
Madison, WI, USA, June 10, 2010

Colloquia and Seminars

85. University of Washington, CENPA, March 1, 2015 (seminar)
84. Yale University, CT, USA, October 19, 2015 (colloquium)
83. Brandeis University, MA, USA, October 13, 2015 (colloquium)
82. Yale University, CT, USA, March 27, 2015 (colloquium)
81. Muenster University, Muenster, Germany, April 10, 2014 (colloquium)
80. Penn State University, State College, PA, December 12, 2013 (colloquium)
79. Yale University, New Haven, CT, September 30, 2013 (seminar)
78. University of Massachusetts, Amherst, MA, September 13, 2013 (seminar)
77. Brookhaven National Laboratory, Upton, NY, USA, March 28, 2013 (seminar)
76. Argonne National Laboratory, Physics Division, IL, USA, March 18, 2013 (seminar)
76. National Institute of Standards and Technology (NIST), MD, USA, March 15, 2013 (seminar)
75. University of Wisconsin, Madison, WI, USA, February 25, 2013 (undergraduate colloquium)
75. Technical University Dresden, Germany, November 27, 2012 (colloquium)
74. Ohio State University, Columbus, OH, November 21, 2012 (colloquium)
73. Ohio State University, CCAPP, Columbus, OH, November 20, 2012 (seminar)
72. Simon Fraser University, Burnaby, BC, Canada, November 9, 2012 (colloquium)
71. University of British Columbia, Vancouver, BC, Canada, November 8, 2012 (colloquium)
70. University of Victoria, Victoria, BC, Canada, November 7, 2012 (colloquium)
69. University of Alberta, Edmonton, Alberta, Canada, October 19, 2012 (colloquium)
68. University of North Carolina, Chapel Hill, NC, USA, August 27, 2012 (colloquium)
67. NSAC Fundamental Symmetries Town Meeting, Chicago, IL, USA, August 10-11, 2012 (invited talk)
66. Oak Ridge National Laboratory, Oak Ridge, TN, USA, July 5, 2012 (seminar)
65. Lawrence Livermore National Laboratory, CA, USA, May 23, 2012 (seminar)
64. University of Rome, Italy, May 4, 2012 (seminar)
63. Stony Brook University, NY, USA, May 1, 2012 (seminar)
62. University of Maryland, MD, USA, April 18, 2012 (seminar)
61. Fermi National Accelerator Laboratory, IL, USA, March 23, 2012 (seminar)
61. University of Wisconsin, WI, USA, March 13, 2012 (seminar)
60. Yale University, CT, USA, February 11, 2012 (colloquium)
59. National Institute of Standards and Technology (NIST), MD, USA, October 2011 (seminar)
58. University of Washington, CENPA, WA, USA, July 2011 (seminar)
57. Shanghai Jiao Tong University, China, May 20, 2011 (seminar)
56. Shanghai Jiao Tong University, China, May 18, 2011 (colloquium)
55. UC Irvine, Orange, CA, USA, April 21, 2011 (seminar)
54. University of Wisconsin, Madison, WI, USA, February 8, 2011 (undergraduate colloquium)

53. SLAC National Accelerator Laboratory, May 11, 2010 (seminar)
52. University of Illinois at Urbana-Champaign, IL, USA, April 23, 2010 (seminar)
51. Yale University, New Haven, CT, USA, March 1, 2010 (colloquium)
50. University of Wisconsin, Madison, WI, USA, January 26, 2010 (undergraduate colloquium)
49. Indiana University Cyclotron Facility (IUCF), Bloomington, IN, USA, December 11, 2009 (seminar)
48. Forschungszentrum Karlsruhe, Karlsruhe, Germany, November 20, 2009 (seminar)
47. University of Wisconsin, Madison, WI, USA, March 31, 2009 (undergraduate colloquium)
46. Columbia University, New York, NY, USA, February 16, 2009 (colloquium)
45. Technical University Munich (TUM), Munich, Germany, February 2, 2009 (colloquium)
44. Illinois Institute of Technology, Chicago, IL, USA, December 4, 2008 (colloquium)
43. Argonne National Laboratory, Physics Division, Chicago, IL, USA, May 23, 2008 (colloquium)
42. California Institute of Technology, Pasadena, CA, USA, February 7, 2008 (colloquium)
41. University of Wisconsin, Madison, WI, USA, February 5, 2008 (undergraduate colloquium)
40. University of Chicago, Enrico Fermi Institute, IL, USA, June 4, 2007 (seminar)
39. University of Wisconsin, Madison, WI, USA, April 24, 2007 (undergraduate colloquium)
38. Illinois Institute of Technology, Chicago, IL, USA, April 19, 2007 (colloquium)
37. Argonne National Laboratory, Physics Division, Chicago, IL, USA, December 11, 2006 (seminar)
36. University of Illinois Urbana-Champaign, Urbana, IL, USA, September 13, 2006 (seminar)
35. Harvard University, Cambridge, MA, March 14, 2006 (colloquium)
34. Lawrence Berkeley National Laboratory, Berkeley, CA, USA, February 23, 2006 (colloquium)
33. University of Washington, Seattle, WA, USA, February 2, 2006 (colloquium)
32. University of Wisconsin-Madison, Madison, WI, January 23, 2006 (seminar)
31. UC Berkeley, CA, USA, November 30, 2005 (seminar)
30. German National Academic Foundation, Berlin, Germany, September 2, 2005 (seminar)
29. SLAC, Menlo Park, CA, USA, July 7, 2005 (seminar)
28. University of Maryland, College Park, MD, USA, March 7, 2005 (seminar)
27. University of North Carolina at Chapel Hill, NC, USA, February 28, 2005 (colloquium)
26. Massachusetts Institute of Technology, Boston, MA, USA, February 11, 2005 (colloquium)
25. California Institute of Technology, Pasadena, CA, USA, January 18, 2005 (seminar)
24. University of Washington, Seattle, WA, USA, January 10, 2005 (colloquium)
23. Lawrence Berkeley National Laboratory, Nuclear Physics Forum, USA, December 16, 2004 (seminar)
22. Max-Planck Institute for Nuclear Physics, Heidelberg, Germany, November 25, 2004 (colloquium)
21. CENPA, University of Washington, Seattle, WA, USA, May 18, 2004 (seminar)
20. Case Western Reserve University, Cleveland, OH, USA, April 28, 2004 (colloquium)
19. Los Alamos National Laboratory, T-Division, Los Alamos, NM, USA, April 6, 2004 (seminar)
18. California Institute of Technology, Pasadena, CA, USA, December 5, 2003 (seminar)

17. Kansas State University, Manhattan, KS, USA, October 22, 2003 (colloquium)
16. San Luis Obispo Polytechnic State University, CA, USA, July 18, 2003, (seminar)
15. Harvard University, Cambridge, MA, USA, April 2, 2003 (colloquium)
14. John Hopkins University, Baltimore, MD, USA, February 28, 2003 (colloquium)
13. Laboratoire d'Annecy-le-Vieux de Physique des Particules (LAPP), Annecy, France
February 7, 2003 (colloquium)
12. Institute de Sciences Nucleaire (ISN), Grenoble, France, February 6, 2003 (colloquium)
11. Los Alamos National Laboratory, P-25, Los Alamos, NM, USA, January 6, 2003 (seminar)
10. University of Mainz, Mainz, Germany, June 5, 2002 (colloquium)
9. University of Wuppertal, Wuppertal, Germany, June 4, 2002 (colloquium)
8. University of Washington, Seattle, WA, USA, April 25, 2002 (colloquium)
7. University of Oregon, Eugene, OR, USA, January 14, 2002 (seminar)
6. University of Heidelberg, Particle Physics Seminar, December 4, 2001 (seminar)
5. University of Heidelberg, Philosophisches Kolloquium, November 30, 2001 (colloquium)
4. Forschungszentrum Karlsruhe, November 29, 2001 (seminar)
3. University of Illinois at Urbana-Champaign, IL, USA, November 14, 2001 (seminar)
2. Los Alamos National Laboratory, P-23, Los Alamos, NM, USA, November 6, 2001 (seminar)
1. Laboratoire d'Annecy-le-Vieux de Physique des Particules (LAPP), Annecy, France
June 22, 2001 (colloquium)

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References

References are available upon request.