

CURRICULUM VITAE

MICHAEL R.R. GOOD

michael.good@nu.edu.kz

Nazarbayev University

Born: 1981, Georgia, USA. Citizenship: USA, Updated: 2015-Aug
Research Interests: General Relativity, Quantum Cosmology.

POSITIONS HELD

Assistant Professor <i>Department of Physics</i> Nazarbayev University	Astana	08/14 - 08/17
Research Fellow Institute of Advanced Studies Nanyang Technological University	Singapore	08/13 - 08/14
Post-doctoral Fellow Institute of Advanced Studies (advisor: Kerson Huang, MIT)	Singapore	08/11 - 08/13

EDUCATION

University of North Carolina PhD in Physics (advisors: Charles Evans / Paul Anderson) <i>Quantized Scalar Fields Under the Influence of Moving Mirrors and Anisotropic Curved Spacetime.</i>	Chapel Hill	01/07 - 07/11
University of Cambridge Visiting Researcher & Audited Classes, DAMTP (preceptors: John Barrow / Michael Green)	Cambridge	08/09 - 01/10
University of North Carolina MSc in Physics (preceptors: C. Evans / Eugene Merzbacher) <i>Acceleration Temperature: (Unruh Effect)</i>	Chapel Hill	06/04 - 12/06
University of Hawaii Manoa Scholar, Institute of Astronomy (preceptors: Pui Lam / Karen Meech)	Honolulu	01/04 - 06/04
Georgia Institute of Technology BSc in Physics <i>Highest Honors</i> (advisor: David Finkelstein)	Atlanta	08/00 - 12/03

TEACHING EXPERIENCE

- Unanimously voted by the UNC physics faculty for the *Outstanding Teaching Award*, 2006.

Graduate		
Classical Electrodynamics I <i>Text: Jackson</i>	Graduate level electrodynamics.	Fall 2015
Doctoral Written Exam Preparation Class	Led physics PhD candidates in preparation for the written exam. Classical Mechanics, Statistical Mechanics, Quantum Mechanics, Electrodynamics	Spring 2007
Graduate Quantum Mechanics II <i>Text: Sakurai</i>	Symmetry, approximation methods, identical particles, scattering theory, in recitation format.	Spring 2009
Graduate Statistical Mechanics <i>Text: Huang</i>	Classical, quantum, partition function, canonical ensemble, Fermi and Bose systems, approximation methods, etc. in more rigorous recitation format.	Spring 2007
Adv. Undergraduate:		
Classical Electrodynamics II <i>Text: Griffiths</i>	Advanced undergraduate treatment of conservation laws, electromagnetic waves, potentials, gauges, radiation, electrodynamics and relativity.	Spring 2015
Classical Electrodynamics I <i>Text: Griffiths</i>	Advanced undergraduate treatment of electromagnetic phenomena, covering electric and magnetic fields in vacuum and in matter.	Fall 2014
Undergraduate:		
Physics II <i>Text: Walker-Halliday-Resnick</i>	Designed and taught all lectures and demonstrations. Maxwell, quantum, relativity, nuclear, atomic physics, etc.	Summer 2006
Physics I <i>Text: Jewett-Serway</i>	Mechanics and thermodynamics in advanced recitation format.	Fall 2014 Spring 2014
Physics II <i>Text: Knight-Jones-Field</i>	Second semester of introductory physics, problem solving in recitation format.	Spring 2015
Honors Physics II <i>Text: Halliday-Resnick</i>	Electricity and magnetism problem solving, review, lecture in standard recitation format.	Fall 2006
Honors Physics I <i>Text: Halliday-Resnick</i>	Introduction to mechanics. Topics include laws of motion, work/energy, momentum, rotation, gravity and fluids in standard recitation format.	Fall 2005
Honors Physics I (Physics Majors Only) <i>Text: Halliday-Resnick</i>	Fundamentals of physics for physics majors and advanced students in standard recitation format.	Fall 2007 Fall 2008 Spring 2009
Laboratory:		
Modern Physics	Special relativity, black body radiation, photons and electrons, wave particle duality. Elements of atomic theory, nuclei, and fundamental particles.	Spring 2007 Spring 2008
Astronomy	Celestial motions/night sky/planetary astronomy/solar system formation/sun/stars/supernovae/black holes/galaxies/galactic nuclei/BBT.	Spring 2007
Honors Physics II: Electromagnetism	Electricity and magnetism, Coulomb, Ampere, and Faraday Laws. Electromagnetic oscillations and waves, light, diffraction and interference.	Spring 2006
Honors Physics I	Mechanics of particles and rigid bodies, Newton's	Fall 2004

Mechanics	laws, conservation principles, oscillatory and wave motion, sound.	Spring 2005
Physics I Mechanics	Generally pre-med and non-science majors fundamentals of classical mechanics.	Spring 2006
Supplemental Instruction:		
Physics I Supplemental Instruction: <i>Text: Serway</i>	Academic support for students via weekly sessions to facilitate group problem solving. A recitation/lecture hybrid. Mechanics, waves, heat.	Fall 2004
Physics II Supplemental Instruction: <i>Text: Serway</i>	Electricity and magnetism; Laws of Coulomb, Ampere, and Faraday. Electromagnetic oscillations and waves. Light; diffraction and interference.	Spring 2005 Spring 2008
Graduate Grading:		
Electrodynamics <i>Text: Jackson</i>	Solved and graded graduate electrodynamics problems.	Fall 2010
Quantum Mechanics <i>Text: Sakurai</i>	Solved and graded graduate quantum problems.	Spring 2009
Statistical Mechanics <i>Text: Huang</i>	Solved and graded graduate statistical problems.	Spring 2008
General Relativity <i>Text: Misner, Thorne, Wheeler</i>	Solved and graded graduate general relativity problems.	Fall 2008
Undergraduate Grading:		
Electrodynamics I & II <i>Text: Griffiths</i>	Graded all homework, midterms, final exams.	Spring 2015 Fall 2014
Thermodynamics <i>Text: D.Schroeder</i>	Thermal and statistical physics problems graded while at Cambridge University.	Fall 2009
“How Things Work” <i>Text: L. Bloomfield</i>	Graded problems for this non-physics major elective course covering basic physical concepts.	Fall 2010
Tutoring:		
Physics Tutorial Center:	A service I helped provide for free to all physics students.	Fall 2004 Spring 2005
Graduate Tutorial Center: <i>Manager</i>	Coordinated and maintained graduate student help for undergraduates.	Fall 2006
TA Orientation Assistant:	Instructed, assisted, and evaluated new TAs at UNC.	Fall 2006
ROTC Armory Physics Tutor:	Tutoring for the UNC navy students. (mostly basic physics and basic calculus, but often advanced material)	2006-2011
Undergraduate Tutor	Tutoring students in topics ranging from advanced placement high school physics to undergraduate non-linear dynamics.	2006-2011

TEACHING WORKSHOPS

- **NTU Annual Learning and Teaching Seminar 2014**, NTU-Singapore, Transformative Knowledge, Teaching for Conceptual Understanding, Mar 5-7, 2014.
- **Innovations in Teaching 2013**, NTU-Singapore, Online Methods and Interactive Media in Engineering Education, Oct 4, 2013.
- **Innovations in Teaching 2012**, NTU-Singapore / Stanford University Learning Activity Management System (LAMS), Oct 1-3, 2012.
- **Teaching Excellence Workshop**, NASA/JPL, Univ. of Arizona, Conceptual Astronomy and Physics Education Research Team. April 12-13, 2008.
- **Communicating Science: Tools for Scientists and Engineers**, AAAS/NSF at North Carolina State University, April 3, 2008.
- **Incoming TA Orientation Workshop**, participated 2004, selected as exemplary TA to lead new TA's in 2007.
- **Group Dynamics in Teaching Workshop**, Physics and Astronomy Dept, University of North Carolina at Chapel Hill, Sept. 2006.
- **Future Faculty Workshop**, Center of Teaching and Learning, University of North Carolina at Chapel Hill, May 15-22, 2006.

NOTABLE TEACHING MENTIONS

Teaching Fellowship

- Awarded **Future Faculty Fellowship**, Center for Teaching, UNC May 15th-22nd 2006.

Personal Tutoring

- Acted as personal paid tutor for many (30+) students in physics, math and astronomy.
- Acted as personal cosmology tutor/consultant to Dr. Ron Gruber, (Stanford), 2014.

Variform Lectures

- Lectured Physics II the second semester general course in physics at Carolina as a graduate student. (100+ students enrolled)
- Taught **graduate Statistical Mechanics** in a new and challenging recitation format, 2hr sessions at UNC Spring 2007.
- One of four top candidates selected to teach special recitation for advanced undergraduate physics majors only at UNC. Spring 2009.
- Invited as a graduate lecturer for graduates in Statistical Mechanics course, treated paramagnetism and negative temperatures at UNC. Spring 2008.
- Invited to give course lecture at **Yangon University, Myanmar**, to first year students.

Undergraduate Advising

- Advised Undergraduate **Gaukhar Akhmetzhanova** who has worked on an unmoved moving mirror solution and negative energy flux. Fall 2014.
- Advised Undergraduate **Alvin Chua**, who has since gone on to Cambridge University for graduate studies, Summer and Fall 2013
- Advised Undergraduate **Yulong Guo**, who visualized 3+1 dimensional quantum vorticity in the Klein-Gordon equation, at the IAS, summer 2014.

Thesis Committees

- **Yerbolat Dauletyarov**, *Expectation Value Identities for the Dirac Delta Function in Quantum Mechanical Calculations Involving Explicitly Correlated Gaussians*, May 2015.

HONORS

Awards:

- Featured Paper in the annual APS Journal Catalog, 1408.0779, Physical Review D, 2016.
- Kaleidoscope APS Research Selection, 2015.
- Cutting-Edge Physics Research Award, American Association of Physics Teachers, 2007.
- Graduate Teaching Assistant Award, AAPT, USA, 2006.
- Outstanding Teaching Award, UNC 2006., Teaching Prize Nomination, UNC 2005.
- Research Presentation Award, 3rd Place out of 35, National Science Foundation, USA, 2002.
- Georgia Certificate of Merit, University of Georgia, USA 2000.
- Physics Student of the Year, Fayette County, Georgia School of Excellence, USA 2000.
- Eagle Scout, 1998. (fun fact: Frederick Reines, Nobel prize for neutrino detection, was ES)

Grants:

- (\$50,500), GAANN Fellow USA, 2009-2011.
- (\$38,500), HOPE Scholar (awarded full tuition & books at Georgia Tech), 2000-2003.
- (\$15,000), NU-Astana/Chapel Hill Support, 2014-2017.
- (\$12,000), C.R. Evans Summer Support Research Grants, 2007-2010.
- (\$10,500), Research Faculty Social Policy Grant, 2015.
- (\$6,000), Research Experience for Undergraduates, U. of Alabama, Summers 2002 & 2003.
- (\$5,500), Dale Gramley Scholar of Tomorrow Fellow, UNC, 2004-2005.
- (\$5,000), Research Triangle Park IBM Summer Grant, 2006.
- (\$3,500), L. Mersini-Houghton Summer Support Grant, 2005.
- (\$3,000), Paul B. Shearin Summer Research Grant, 2004.
- (\$2,000), Raytheon Company National Scholar, 2003-2004.
- (\$1,000), Future Faculty Fellow, UNC, 2006.

Honorariums:

- (\$2,000), NORDITA, Stockholm, Sweden, 2015.
- (\$3,000), Israel IAS/Hebrew University of Jerusalem, GR School, 2014.
- (\$2,000), National Taiwan University, Taipei, 2013.
- (\$2,000), Embassy of Kazakhstan (competitive), Washington D.C., 2013.
- (\$3,000), IAS/GR20 Warsaw Poland, 2013.
- (\$2,000), IAS/RETUNE, Heidelberg, Germany, 2012.
- (\$700), Carnegie Mellon, Pittsburgh, Pennsylvania, 2011.
- (\$500), Yeungnam University, Korea, 2011. (\$500), Berea College, Kentucky, 2011.
- (\$500), Primordial Gravitational Waves Award, Cambridge, UK 2009.
- (\$2,000), Institute for Nuclear Theory Honorarium (competitive)-U. Washington, 2009.
- (\$2,000), McDonald 2009, Silver 2006, DAMTP 2009, PI-UNC 2008.
- (\$300), Rensselaer Polytechnic Institute, New York, 2007.
- (\$500), Julian Schwinger Foundation Award, (competitive) JSF, 2006.
- (\$300), 'Nobel Gathering', (competitive), UNC-C, 2005, (\$300), Grav. Waves, NASA, 2003.

Positions Beholden:

- Visiting Assistant Professorship, Macalester College, (declined), USA, 2014.
- Assistant Professorship, Nazarbayev University, (declined), Kazakhstan, 2011.
- Visiting Assistant Professorships: Elon University, Whitman College, (declined), USA, 2011.
- Teaching Fellow, African Institute of Mathematical Sciences, (declined), South Africa, 2011.
- Assistant Professorship, Jazan University, (declined), Saudi Arabia, 2010.

Shortlists Beholden:

- Teaching Assistant Professorship, North Carolina State University, USA, 2014.
- Assistant Professorship, University of Guam, USA, 2014.
- Postdoctoral Fellowship, University of Johannesburg, South Africa, 2013.
- Visiting Assistant Professorships: Berea, Smith, Carlton, Concordia; (USA), 2011.

SCIENTIFIC OUTREACH & VOLUNTEER SERVICE

Astana

- 100th Year Anniversary of General Relativity Celebration: Gave invited lecture. One keynote speaker, **Cosmonaut Talgat Musabayev**, Astana, April 2015.
- Astana's first Meeting of Rotary International, February 2015.
- Art of Science 2014: Research Week. Nov 24-28, Photography Contest & Exhibition.
- Attended diplomatic lecture at NU by the **President of Iran**, Mr. Hassan Rouhani, for his first official visit to KZ for strengthening scientific ties. Guest of Honor: **President of Kazakhstan**, Mr. Nursultan Nazarbayev, 2014.

Singapore

- Volunteered at **Singapore Discovery Centre**, Cultural Diplomacy, Embassy Showcase & Special Exhibition, Educational Event. April 2014.
- Participated and helped represent NTU for **Sketches of Science**, exhibition of Nobel Laureates' drawings, and opening of the Science Centre in Singapore. Guest of Honor: **President of Singapore**, Tony Tan, 2013.

Cambridge

- **PhysicsFest '09**: Cavendish Laboratory, Stephen and Lucy Hawking, outreach and education. Cambridge, UK, Dec 07, 2009.
- Volunteer for **Cavendish Laboratory's 25th Anniversary 'Physics at Work'**, 2000+ students. Cambridge, UK, Sept 15-17, 2009.

Carolina

- Volunteered time giving astronomy presentations to the general public at the **'Morehead Astronomy Guest Nights'**. April 2007.
- Volunteered time for demonstrations at **Creekside Elementary School 3rd Annual 'Science Week'**, Durham, NC. March 19-23, 2007.
- Volunteered at **North Carolina's Museum of Natural Science 'Astronomy Days'**, the largest free educational science event in the country with over 50 exhibits, activities, presentations and over 10,000 people in attendance. Jan 27-28, 2007.
- Online maintenance of detailed solutions to over 100 graduate level problems by Goldstein, Sakurai, Jackson and others. google/mgoodphysics/

Hawaii

- Volunteered presenting optics of reflection/refraction of telescopes exhibit at **University of Hawaii's Institute for Astronomy 5th Annual Open House**, April 18, 2004.

Atlanta

- Volunteered outreach via **Georgia Tech's Astronomy Nights**, Leonid Meteor Shower, Nov 19, 2002.

WORK EXPERIENCE

Assistant Professor- 2014- 2017. School of Science and Technology, Nazarbayev University.

Postdoctoral Research Fellow- 2011- 2014. Institute of Advanced Studies, Nanyang Tech.

Graduate Research Assistant- Summers 2004-2011. Physics Dept., University of North Carolina.

Graduate Teaching Assistant- Fall & Spring 2004-2011. Physics Dept., UNC.

Undergraduate Research Assistant- Aug 2002- Aug 2003. School of Physics, Georgia Tech.

Undergraduate Research Assistant- REU, Summer 2002. University of Alabama at Birmingham.

Undergraduate Research Assistant- REU, Summer 2001. Physics Dept, UAB.

2015

- ‘Black Hole in a Moving Mirror’, **University of Rome, Italy.**
- ‘Are black holes spring-like?’, Presentation, Penn State, **Pennsylvania, USA.**
- ‘How to Escape a Black Hole’, 100th Celebration of GR, **Astana.**
- ‘Constant Particle Flux Creation for Acceleration Singularities’, Nordita, **Sweden.**
- ‘The Black Hole and the Quantum Vortex’, Invited Talk, NU Science Café, **Astana.**
- ‘Spring-like Surface Gravity Temperature’, Israel Institute of Advanced Studies, **Israel.**

2014

- ‘Black Holes and Springs’, Invited Seminar, Physics Seminar, **Astana.**
- ‘Hall of Moving Mirrors’, Invited Talk, University-wide Colloquia, NU, **Astana.**
- ‘Particle Creation From the Vacuum’, Invited Talk, **Yangon University, Myanmar.**
- ‘Relativistic Mechanics’, Invited Lecture, **Yangon University, Myanmar.**

2013

- ‘Black Hole in Higgs Field’, Invited Talk, **National Taiwan University, Taipei.**
- ‘Quantized Circulation’, Invited Talk, **Embassy of Kazakhstan, Washington DC, USA.**
- ‘The Quantum Vortex’, Invited Seminar, **Winthrop University, South Carolina, USA.**
- ‘On negative flux and quantum inequalities’, Invited Presentation, **ICISE, Vietnam.**
- ‘Dynamics of Casimir Light’, Accepted Talk. GR20, **University of Warsaw, Poland.**

2012

- ‘Horizons and Negative Energy Flux’, Contributed, Quantum Horizons, **Taipei, Taiwan.**
- ‘Reflections upon Moving Mirrors’, Invited Talk, **IAS-CERN, Singapore.**
- ‘Blackhole in a Superfluid Universe’, Contributed, **Heidelberg Univ., Germany**

2011

- ‘Moving Mirrors Create Light From Nothing’, Invited Talk, **Yeungnam University, Korea.**
- ‘Special Relativity’, Invited Talk, **Carnegie Mellon University, Pennsylvania, USA.**
- ‘Accelerated Objects Create Particles’, Invited Talk, **Whitman College, Washington, USA.**
- ‘Reflections on Accelerated Mirrors’, Invited Talk, **Berea College, Kentucky, USA.**

2010-2007

- ‘Thermal Radiation and Time-Dependent Accelerated Boundaries’, Contributed Talk, 13th Eastern Gravity Meeting. **North Carolina State University, 2010.**
- ‘Dynamical Casimir Effect’, Invited Talk, **University of Washington, 2009.**
- ‘Quantum Black Holes’ Invited Talk, Entire Faculty Seminar, **UNC-Chapel Hill. 2008.**
- ‘Relativistic Moving Mirror’, Invited Talk, **Rensselaer Polytechnic, New York. 2007.**
- ‘Black Hole Emit Light’, Invited Talk, AAPT Meeting, **UNC-Greensboro. 2007.**

2006-2001

- ‘The Casimir Effect’, Contributed Talk, Relativity Meeting, **UNC-Chapel Hill, 2006.**
- ‘Geometric Algebra’ Comp. Sciences. Contributed Talk, Graduate School, **UNC, 2005.**
- ‘Rainbow Optics’, Institute for Astronomy, Outreach Lecture, **Univ. of Hawaii. 2004.**
- ‘Spacetime Algebra’, School of Physics, Quantum Relativity Lecture, **Georgia Tech. 2003.**
- ‘Extremal Black Hole Charge’, Physics Faculty Lecture, **University of Alabama. 2002.**
- ‘Non-linear Newtonian Gravity’, NSF competition, **University of Alabama. 2001.**

- Good, M.R.R., Anderson, P.R. **“Mirrors as Black Holes”**,
 - Manuscript in preparation. arXiv:gr-qc/0000.0000.
 - To be submitted to Physical Review D, 00, 000000.
- Good, M.R.R. and Xiong Chi, **“On Cosmological Expansion and Accelerated Boundaries”**,
 - Manuscript in preparation. arXiv:gr-qc/0000.0000.
 - To be submitted to Physical Review D, 00, 000000.
- Good, M.R.R., Anderson, P.R. and Evans, C.R. **“General Coupling Adiabatic Regularization in Anisotropic Spacetime”**,
 - Manuscript in preparation. arXiv:gr-qc/0000.0000.
 - To be submitted to Physical Review D, 00, 000000.
- Good, M.R.R., Anderson, P.R. and Evans, C.R., **“Black Hole – Moving Mirror II: Particle Creation”**,
 - [arXiv:gr-qc/1507.05048](https://arxiv.org/abs/1507.05048).
 - MG14 Contribution, BH6 General and Analog Black Holes, 2015.
- Anderson, P.R., M.R.R. Good, and Evans, C.R., **“Black Hole – Moving Mirror I: Exact Correspondence”**,
 - [arXiv:gr-qc/1507.03489](https://arxiv.org/abs/1507.03489).
 - MG14 Contribution, BH6 General and Analog Black Holes, 2015.
- Good, M.R.R, Chi Xiong, Alvin J.K. Chua and Kerson Huang. **“Geometric Creation of Quantum Vorticity”**,
 - [arXiv:gr-qc/1407.5760](https://arxiv.org/abs/1407.5760). (Manuscript in preparation August 2015.)
 - To be submitted to Classical and Quantum Gravity, 00, 000000, 2015.
- Good, M.R.R. and Ong, Y.C., **“Signatures of Energy Flux in Particle Production: A Black Hole Birth Cry and Death Gasp”**,
 - [arXiv:gr-qc/1506.08072](https://arxiv.org/abs/1506.08072)
 - Journal of High Energy Physics, 2015:145, July 2015.
- Good, M.R.R. and Ong, Y.C., **“Are Black Holes Spring-like?”**,
 - [arXiv:gr-qc/1412.5432](https://arxiv.org/abs/1412.5432).
 - Physical Review D, 91, 044031, February 2015.
- Chi Xiong, M.R.R.Good, Yulong Guo, Xiaopei Liu and Kerson Huang. **“Relativistic Superfluidity and Vorticity from the Nonlinear Klein-Gordon Equation”**,
 - [arXiv:hep-th/1408.0779](https://arxiv.org/abs/1408.0779).
 - Physical Review D, 90, 125019, December 2014.
- Good, M.R.R., Anderson, P.R., and Evans, C.R. **“Time Dependence of Particle Creation from Accelerating Mirrors”**,
 - [arXiv:gr-qc/1303.6756](https://arxiv.org/abs/1303.6756)
 - Physical Review D, 88, 025023, July 2013.
- Good, M.R.R, **“Spin-Statistics Connection from Acceleration”**,
 - [arXiv:gr-qc/1205.0881](https://arxiv.org/abs/1205.0881)
 - International Journal of Modern Physics, Vol. A28, No. 2, 1350008, 2013.

- Good, M.R.R. “**Quantized Scalar Fields Under the Influence of Moving Mirrors and Anisotropic Curved Spacetime**”,
 - [ISBN: 9781124942285](#).
 - UMI Dissertations, University of North Carolina, 2011.
- Good, M.R.R., “**Extremal Black Hole in a Nonlinear Newtonian Theory of Gravity**”,
 - [arXiv:gr-qc/0811.1805](#) (Submitted for Publication in AJP)
 - Proceedings of NSF/REU Competition at Univ. of Alabama.

SELECTED SCIENTIFIC ACCOMPLISHMENTS

- Found spring-black hole temp: $2\pi T = g - k$. (Good, et al, PRD, [1412.5432](#))
 - First simulations of black hole quantum vortices. (Good, et al, [1407.5760](#))
 - Discovery of thermal boundary acceleration. (Good, et al, PRD, [1303.6756](#))
 - Discovery of exact unitary particle creation solutions. (Good, et al, PRD, Ibid.)
 - Demonstrated a black hole birth cry. (Good, et al, JHEP, [1506.08072](#)).
-

INTERVIEWS CONDUCTED AND LECTURE HIGHLIGHTS

Interviews

- **Carlo Rubbia**, Nobel Prize in Physics.
 - Interview, IAS Book, (in print), June 27, 2014.
- **Roy Glauber**, Nobel Prize in Physics.
 - Interview, IAS ‘Innovations’, (in print), May 6, 2014.
- **Serge Haroche**, Nobel Prize in Physics.
 - IAS, Book, (in print), post-award questions of *Interview with 2012 Nobel Prize Winner Serge Haroche*, Centre for Quantum Technologies, Singapore Jan 2013, Vol 2, No 1., Interview April 23, 2014.
- **Arieh Warshel**, Nobel Prize in Chemistry.
 - Interview, IAS Asia Pacific Article (in print), March 12, 2014.
- **Wendelin Werner**, Fields Medalist.
 - Interview, IAS Supplementary Article (in print), January 16, 2014.

Editorial Board Highlights

- **Freeman Dyson**, *Dyson’s 90th and Research Highlights*, Editorial Board,
 - IAS Newsletter, Issue 15, October 2013.
 - **Vladimir Korepin**, *Series of Lectures and IAS Research*, Editorial Board,
 - IAS Newsletter, Issue 14, January 2013.
-

Local Organizer

- **90th Birthday of Freeman Dyson Conference:** Personally welcomed Dyson upon his arrival to Singapore. Some Notable Speakers: David Gross, Henry Tye, Cecile DeWitt, Lawrence Krauss. August 26-29, 2013.

Schools

- **32nd Jerusalem Winter School in Theoretical Physics: “100 Years of GR: From Theory to Experiment and Back”.** Institute for Advanced Studies, The Hebrew University of Jerusalem, Israel. Dec 29, 2014-Jan 8, 2015. (over 120 applicants)
- **1st IAS-CERN School on Particle Physics and Cosmology and Implications for Technology.** Nanyang Technological University, Jan 9-31, 2012. (Invited to serve as a Chairman / gave Closing Remarks.)
- **Winter School: Multiscale Modeling, Simulation, Analysis and Applications:** Institute of Mathematical Sciences, National University of Singapore, Nov 1, 2011 – Jan 20, 2012.
- **Summer School: Competitively accepted and funded to participate, Nuclear and Particle Astrophysics: Connecting Quarks with the Cosmos:** University of Washington, Seattle, Washington, June 28-July 10, 2009.

Yukawa Institute Seminar

- **Theoretical Particle Physics Seminar:** ‘Boundary condition for a D-brane from the Wilson loop, and gravitational interpretation of an eigenvalue in the matrix model in AdS/CFT correspondence., Akitsugu Miwa from Harish-Chandra Research Institute at **Kyoto University** and the **Yukawa Institute of Theoretical Physics**, Japan, July 28, 2009.

Computational Software

- Strong Mathematica. Skilled at Matlab.

Oak Ridge Associated Universities External Proposal Evaluation (ORAU)

- Ernazar Abdikamalov, Michael R.R. Good, Daniele Malafarina, Rating of 7.33-**Excellent**, “Probing Fundamental Physics with Core Collapse Supernova”, Proposal Number 20140214, 2014
- Unanimously voted fundable by the University Research Council Panel.

VARIOUS ACTIVITIES/RESPONSIBILITIES

Elected service

- President, Physics Graduate Association, UNC, 2006 – 2007.
- Senator, [Graduate and Professional Student Federation](#), UNC, 2005 – 2007.
- Senator, Student Congress, College of Arts and Science, District 8, UNC, 2007
- Senator, Faculty Senate, Nazarbayev University, 2015-2017.

Leadership roles

- Chairman, Physics Department Colloquium at Nazarbayev University, 2015.
- Chairman, CERN School on Particle Physics, IAS, 2012.
- Manager, Physics and Astronomy Dept. Tutorial Center, 2006.
- Founder of [Georgia Tech's Astronomy Club](#), 2003.
- Founder and Faculty Advisor of Society of Physics Students at Nazarbayev University, 2015.
- Executive Committee, School of Science & Technology, Nazarbayev University, 2014-2015.
- Representative to the Strategic Research Committee, NU, 2015
- Committee for Faculty Rights and Responsibilities, NU, 2015.

Referee

- Referee, Journal of High Energy Physics, Gravitation and Cosmology, JHEPGC, 2015.
- Referee, Journal of Selected Topics in Quantum Electronics, JSTQE, IF 3.465, 2015.

Editor

- Editor, [IAS Newsletter](#), Editorial Board, 2012 – 2014
- Editor, Nazarbayev University Theoretical Astrophysics and Gravitation Group, [NUTAG](#).
- Editor, solutions to over 100 graduate level problems. [google/mgoodphysics/](https://www.google.com/mgoodphysics/)

Science and Political Organizations

- Scientists and Engineers for America, 2006 – 2012.
- Federation of American Scientists, 2004 – 2012.
- Union of Concerned Scientists, 2004 – 2012.
- American Association for the Advancement of Science, 2002-present.

Societies

- American Physical Society, Particle & Fields Division, Gravity Topical Group 2002- present.
 - American Association of Physics Teachers, 2006-present.
 - Institute of Physics, American Mathematical Society, 2003 – 2008.
 - International Clifford Algebra Society, 2003 – 2005.
 - Society of Physics Students at Georgia Tech, 2002 – 2004.
-

CONFERENCES

2015

- **On Geometry of Quantum Effects**, Mini-workshop, IAS, Singapore, August 3-7, 2015.
- **Grossman MG14**: University of Rome, Italy, July 12-18, 2015.
- **Penn State General Relativity “100 Years of GR”**: ISGRG & GGR of APS, notable speakers: (Ashtekar, Berger, Isenberg, MacCallum, Anderson). USA, June 8-12, 2015
- **Probing the Fundamental Nature of Spacetime**, Workshop, (one keynote speaker: Renate Loll), Nordita, Stockholm, Sweden, March 23-27, 2015.

2014

- **32nd Jerusalem General Relativity and Theoretical Physics: “100 Years of GR: From Theory to Experiment and Back”**. Institute for Advanced Studies, The Hebrew University of Jerusalem, Israel. Dec 29, 2014-Jan 8, 2015. (many keynote speakers: Maldacena, Polchinski, Gibbons, Gross, Damour, Bekenstein, Mukhanov, Peebles, Arkani-Hamed, Thorne)
- **Overseas Chinese Physics Association OCPA8 – International Conference: *Looking Forward to Quantum Physics***, (some keynote speakers: Michael Turner, Carlo Rubbia, B.L. Hu), Singapore, June 23-27, 2014.
- **Berge Fest, *Celebration of B.G. Englert's contributions to Quantum Information, Quantum Optics, and the Foundations of Quantum Mechanics***, Center for Quantum Technologies, National University of Singapore, April 22-26, 2014. (a keynote speaker: Serge Haroche)
- **Hidden Connections**, Complexity Program Annual Conference, IAS, NEC, Singapore. March 3-5, 2014. (a keynote speaker: Martin Rees)
- **International Conference on Flavor Physics and Mass Generation**, Singapore. February 10-14, 2014.
- **IAS-CERN Novice Workshop on Higgs Boson, Particle Physics and Cosmology**. NTU, Singapore. February 7, 2014.

2013

- **PASCOS, 19th International Symposium on Particles, Strings and Cosmology**, Taipei, Taiwan, Nov 20-26, 2013.
- **Rencontres du Vietnam, Windows on the Universe, Inaugural Conference, International Center for Interdisciplinary Science Education**. Quy Nhon, Vietnam, Aug 11-17, 2013.
- **90th Birthday Celebration Conference for Rudy Marcus, Nobel Laureate**. July 23, 2013.
- **GR20 / Amaldi 10**. Uniwersytet Warszawski, Poland, July 7-13, 2013.
- **IAS-CERN Workshop on Particle Physics and Cosmology and Implications for Technology**. Nanyang Technological University, Singapore. March 25-27, 2013.
- **Determination of the Fundamental Parameters of QCD**, IAS, NEC, Singapore. Mar 18-21, 2013.
- **A Crude Look at the Whole**, Complexity Program Annual Conference, IAS, NEC, Singapore. Mar 4-6, 2013.
- **School on Modern Topics in Condensed Matter Physics**, NTU, Singapore. Jan 28- Feb 8, 2013.

2012

- **Horizons of Quantum Physics: from Foundations to Quantum Enabled Technologies**. National Taiwan University, Taipei, Taiwan. Oct-14-18, 2012.
- **RETUNE 2012: Relaxation, Turbulence, and Non-Equilibrium Dynamics of Matter Fields**. EMMI, Heidelberg University, Center for Quantum Dynamics, Heidelberg, Germany. June 21-24, 2012.
- **Singapore School of Physics, Strong-Light Matter Coupling** IAS, Singapore May 21-June 8, 2012.
- **More Is Different**: Complexity Program Annual Conference, IAS, NEC, Singapore Feb 27-29, 2012.

2011-2009

- **Emergence in Field Theory:** IAS, Nanyang Executive Centre, Singapore Aug 5-8, 2011.
- **13th Eastern Gravity Meeting:** East Coast Relativity Conference, NC, May 21-22, 2010.
- **Primordial Gravitational Waves:** University of Cambridge, UK Aug 25-30, 2009.
- **213th AAS:** American Astronomical Society, Long Beach, California. Jan 4-8, 2009.

2008

- **Cha-Cha Days:** Charleston and Chapel Hill, applied mathe, Chapel Hill, NC Nov 1-2, 2008.
- **NC Astronomers' Meeting:** headlined by Neil Gehrels, PI of NASA's Swift, Jamestown, NC, Oct 17-18, 2008.
- **A Debate in Cosmology: The Multiverse:** forum for scientists from various fields to discuss, debate, and stimulate progress on the idea that our observable universe is part of a multiverse. Perimeter Institute, Ontario, Canada, Sept 2-4, 2008.

2007

- **Origin of Time's Arrow:** First cosmology conference dedicated to the direction of time's arrow. Columbia University, New York City, NY Oct 15-16, 2007.
- **NC Astronomers' Meeting:** Annual technical meeting, headlined by cosmologist Mike Turner, Jamestown, NC, Sept 28-29, 2007.
- **AAPT Greensboro 2007:** National meeting of the American Association of Physics Teachers, University of North Carolina at Greensboro, North Carolina, July 28-Aug 1, 2007.
- **Science Blogging Conference:** (first of its kind!) Science communication, education and literacy on the web. University of North Carolina, Chapel Hill, Jan 20, 2007.

2006

- **Miami 2006:** Topical conference on elementary particles, astrophysics and cosmology at the University of Miami, Fort Lauderdale, Florida. Dec 12 – 17, 2006.
- **Hadron Collider Physics Symposium 2006:** Results from Tevatron, RHIC & HERA, Bryan Center at Duke University in Durham, North Carolina, May 22-26, 2006.

2005

- **ASNY Fall 2005:** Meeting of the Astronomical Society of New York, Union College, Schenectady, New York, Oct 22, 2005.
- **8th Eastern Gravity Meeting:** World Year of Physics at Wake Forest University, Winston Salem, North Carolina, Mar 18-19, 2005.

2004

- **Super B Factory Workshop:** East-West Center at the University of Hawaii at Manoa, Honolulu, Hawaii, Jan 19-22, 2004.
- **2004 Hawaii International Conference on Sciences:** Renaissance Ilikai Waikiki Hotel, Honolulu, Hawaii, Jan 15-18, 2004.
- **203rd AAS:** Meeting of the American Astronomical Society, Hyatt Regency, Atlanta Georgia, Jan 4-8, 2004.

2003-1999

- **QTS3:** 3rd Symposium on Symmetries, Univ. of Cincinnati, Ohio, Sept. 10-14, 2003.
- **AstroGravS:** The Astrophysics of Gravitational Wave Sources Workshop hosted by NASA/Goddard Space Flight Center, University of Maryland, April 24-26, 2003.
- **DPS 2002:** 34th Annual Meeting of the Division of Planetary Sciences of the American Astronomical Society, University of Alabama at Birmingham, Oct 6-11, 2002.
- **APS Centennial,** (world's largest gathering of physicists, 11,000), Stephen Hawking's, The Universe in a Nutshell, Georgia World Congress Center, Atlanta, March 15-26, 1999.