

# CURRICULUM VITAE

**Scott Dodelson**

Department of Physics  
Carnegie Mellon University  
Pittsburgh, PA 15213

## EMPLOYMENT

### **Carnegie Mellon University**

Professor and Department Head, Physics (2017-present)  
Director, NSF AI Planning Institute for Physics of the Future

### **Fermi National Accelerator Laboratory**

Distinguished Scientist (2011-2017)  
Interim Director, Center for Particle Astrophysics (2006-2008)  
Scientist II (2004-2011)  
Head, Theoretical Astrophysics (2001-2006)  
Scientist I (1999-2004)  
Associate Scientist (1994-1999)  
Research Associate (1991-1994)

### **University of Chicago**

Professor, Part Time, Department of Astronomy and Astrophysics  
(2004-2017)  
Associate Professor, Part Time (1998-2004)  
Visiting Professor (1995-1998)

### **Northwestern University**

Visiting Professor, Part Time, Department of Physics and Astronomy  
(2004-5)

### **Harvard University**

Post-doctoral Fellow, Department of Physics (1988-1991)

### **Columbia University**

Research Assistant, Physics (1985-1988)  
Research Assistant, Experimental Particle Physics (1983)

### **Weizmann Institute of Science**

Research Assistant, Karyn Kupcinec International Science School (1982)

## EDUCATION

### **Columbia University**

PhD in Physics, Advised by Gerald Feinberg (1988)  
Joint BA/BS in Applied Physics, Columbia College  
and School of Engineering and Applied Science (1983)

## TEACHING AND MENTORING

- 1995-present: Taught in Department of Astronomy and Astrophysics at the University of Chicago and the Department of Physics at Carnegie Mellon University. Graduate seminars on the large scale structure of the universe, the cosmic microwave background, gravitational lensing, and QSO absorption systems. Core courses for first year graduate students on Radiative Processes in Astrophysics, The Galaxy, and Cosmology. Undergraduate course on galaxies and the universe for physics majors concentrating in astronomy and PHYSICI 120 “The Universe and How we Know”. Taught astronomy course for sophomores at Northwestern University. Taught “Gravitational Lensing,” “Basic Experimental Physics,” “Quantum Mechanics,” “Physics and AI,” “Physics of Energy,” and “Introduction to Cosmology” at CMU.
- 1995-present: Supervised graduate students: Primary supervisor to: Kim Coble (PhD 1999; faculty at San Francisco State University), Ryan Scranton (PhD 2002, [google](#)), Eduardo Rozo (PhD 2006, faculty at University of Arizona), Fabian Schmidt (PhD 2009, faculty at Max-Planck-Institut for Astrophysik ), Melanie Simet (PhD 2012; postdoc at JPL/University of California, Riverside), Eric Baxter (PhD 2014, postdoc at University of Pennsylvania), Youngsoo Park (PhD 2015, postdoc at KIPMU), Alessandro Manzotti (PhD 2017, postdoc in Paris), Peikai Li (2017-present), Andresa de Campos (2018-present), Tianqing Zhang (2018-2019), Yingzhang Chen (2019–present), James McElveen (Masters, 2014), Sam Passaglia (2015-2017), Gourav Khollar (2015-2017), Pablo Portela (Masters 2014, now at University College London), Karin Klein (Masters, 2013).  
Secondary supervisor to: Arthur Kosowsky (1994-1995), Lloyd Knox (1994-1995), Paul Ricker (1995-1996), Robert Lopez (1997-1999), Alberto Vallinotto (2005-2006), Charles Shapiro (2005-2008), Michele Liguori (2005-2006), Sohyun Park (2011-12), Alan ZablOCKY (2010-12), Tim Linden (2010-11), Hsin-Yu Chen (2011-12), Jason Poh (2014-2016), Nil Banik (2015-2016), Ross Cawthon (2012-2016), Shashin Pavaskar (2017), Tassia Ferreira (2018-19).
- 1995-present: Supervised undergraduate students: Matt Billmire (Thesis, 2003), Sara Burtwell (Thesis, 2002), Brian Klein (Thesis, 2007), Vikram Upadhyay (Thesis, 2014), Tianke Zhuang (2019), Zivan Vasquez (2019), Boyan Yin (2020–2021), Hannah Varekamp (2021–present).
- 1994-present: Supervised post-doctoral fellows. These include: Stephane Colombi (currently faculty at IAP), Andrew Heckler (Ohio State), Yun Wang (Oklahoma), Istvan Szapudi (Hawaii), Antonio Riotto (Geneva), Will Kinney (Buffalo), Chris Metzler, Lam Hui (Columbia), Andrew Sornborger (UC, Davis), Ewan Stewart (KAIST), Zoltan Haiman (Columbia), Pasquale Blasi (Florence), Michael Blanton (NYU), Idit Zehavi (Case Western), Ravi Sheth (Penn), Andreas Berlind (Vanderbilt), John Beacom (Ohio

State), Nicole Bell (Melbourne), Patrick Greene (Texas), Kev Abazajian (Irvine), Gianfranco Bertone (GRAPPA Institute), Pengjie Zhang (Shanghai), Dan Hooper (FNAL), Kenji Kadota (Nagoya), Mark Jackson, Chris Vale, Emiliano Sefusatti (ICTP), Pasquale Serpico (Savoie, CNRS), Hee-Jong Seo (Ohio), Jeter Hall (LLNL), Andrew Hearin (Argonne), Elise Jennings (Argonne), Chihway Chang (Chicago), Adam Solomon (CMU), Arya Farahi (Michigan), and Danielle Leonard (Newcastle).

1987-1990: Volunteer: Brookline School System and Double Discovery Program in New York City. Guided disadvantaged elementary student in independent research project. Tutored urban high school students in math and science.

1982 - 1986: Preceptor of Columbia's undergraduate physics labs.

## GRANTS

- PI, Planning Institute for AI and Physics, NSF (2020-22)
- Co-I on Umbrella Grant, "Cosmic Frontier," DOE High Energy Physics (2020-23)
- Co-I, New Vistas in Weak Lensing, NSF (2019-2022)
- PI, "Physics from Cosmic Surveys," DOE High Energy Physics (2018-20)
- PI, Framework for Analysis of Cosmological Surveys, DOE-HEP (2013-14)
- Fermilab PI, Scientific Discovery through Advanced Computing, "Computation-Driven Discovery for the Dark Universe" (2012-14)
- Co-I, NSF Physics Frontier Center, "Pushing Cosmology to the Edge," (2011-2017)
- PI, National Science Foundation Grant AST-0908072, "Precision Measures of the Dark Sector," (2009-2012)
- Co-I, DOE Discovering the Nature of Dark Energy Program, "Towards Precision Cosmology in the Non-linear Regime" (2008)
- Co-I, NASA Mission Concept Study Award NNX08AT71G S01 (2008-9)
- PI, Brinson Post-dostoral Fellowship Program (2006, 2007)
- PI, Fermilab-University of Chicago Strategic Collaborative Initiative, "Computational Cosmology," (2007)
- PI, NASA Grant NAG5-10842, "Fundamental Physics from Space" (2004-2006)
- PI, National Science Foundation Grant 0118263, "Workshop on Cosmology" (2001)
- PI, National Science Foundation Grant PHY-0079251, "Probing Fundamental Physics with Cosmological Observations," (2000-2003)
- Co-I on Fermilab Astrophysics' NASA ATP grants (1994-2003)

## AWARDS

- Honorable Mention, *Gravity Research Foundation* (2011)
- Strategic Laboratory Leadership Program, University of Chicago Business School (2008)
- *Fellow*, American Physical Society (2004)
- Garden State Graduate Fellowship (1983)
- Sigma Pi Sigma (Physics Honor Society) (1983)
- Third, second prizes, Van Buren Math Prize Competition (1982,83)
- Tau Beta Pi (National Engineering Honor Society) (1982)

## PROFESSIONAL ACTIVITIES

- Physics Advisory Committee, Fermilab (2021–present)
- Argonne National Lab Institutional Review Panel (2021)
- Academic Freedom Commission, Carnegie Mellon University (2020–present)
- Advisory Committee, Berkeley Network for Neutrinos, Nuclear Astrophysics, and Symmetries (2020–present)
- External Advisory Board, Center for Particle Cosmology, University of Pennsylvania (2020–present)
- Dark Energy Survey Mentorship Oversight Committee (2020–present)
- Founder and Member, Equity, Diversity, and Inclusion Committee, Department of Physics, CMU (2020–present)
- Co-Chair, Equity, Diversity, and Inclusion Committee, Dark Energy Science Collaboration (2020–present)
- Chair, CMU Department of Physics Search Committee (2020–21)
- NSF Panel Reviewer and Write-in Reviewer (2020)
- Member, Associate Dean of Diversity, Equity, and Inclusion, Mellon College of Science, Search Committee (2020-21)
- Co-Chair, Head of CMU Department of Mathematical Sciences Search Committee, (2020)
- Honorary Member, Aspen Center for Physics (2020–present)
- Director’s Review, CMB-S4, (2020)
- Member, Carnegie Mellon Academic Freedom Commission (2020–present)
- Admissions Committee, Aspen Center for Physics (2020)
- Member, Carnegie Mellon Campus Climate Task Force (2018–present)
- Pittsburgh Supercomputer Center Director, Search Committee (2018–present)
- LSST Corporation Chair Search Committee (2018)
- CMB-Stage IV Decadal Survey Review Team (2018)
- Member, Astronomy and Astrophysics Advisory Committee (2018–present)
- Director’s Review, Dark Energy Spectroscopic Instrument (DESI), LBL, December 2017

- International Advisory Committee, Neutrino 2018, 2020
- Scientific Organizing Committee, Big Questions, Big Surveys, Big Data: Astronomy & Cosmology in the 2020s
- Co-Chair, Science Committee, Dark Energy Survey (2016-2021)
- Steering Committee, Inflation Probe Mission Concept Study (2016-present)
- Chair, Organizing Committee, Future Cosmic Surveys, Chicago (2016)
- International Advisory Committee, Neutrino Physics Center (2016-present)
- Chair, Organizing Committee, Workshop on "Cosmology with Low Resolution Spectroscopy", Chicago (2016)
- Treasurer, Aspen Center for Physics (2016-2020)
- Scientific Organizing Committee, CMB-S4 Workshops, Michigan, LBL, and Chicago (2015-16)
- Chair, KICP Director Search Committee (2016)
- Chair, DOE Cosmic Visions: Dark Energy Committee (2015-2018)
- Member, Aspen Center for Physics Presidential Search Committee (2015-16)
- Convener, Software and Infrastructure Working Group, LSST Dark Energy Science Collaboration (2015-2017)
- Member, LSST Collaboration Council (2015-2017)
- Organizer, Workshop on "Neutrinos from Space and on Earth", Aspen (2015)
- Panelist, INCITE Proposals on High Performance Computing
- Secretary-Treasurer, Division of Astrophysics, American Physical Society (2015-present)
- Organizer, Workshop on "Combined Probes in Cosmology", Aspen (2014)
- Organizer, CosmoSIS Workshop, Chicago (2014)
- Assistant Treasurer, Aspen Center for Physics (2014-2016)
- Organizing Committee, Cosmo14
- Co-Chair, Organizing Committee, DES/LSST Workshop (2014)
- Particle Physics Project Prioritization Panel "P5" (2013-14)
- Science Advisory Council, Fermilab (2013-2015)
- International Advisory Committee, 26th International Conference on Neutrino Physics and Astrophysics (Neutrino 2014)
- Scientific Organizing Committee, 27th Texas Symposium on Relativistic Astrophysics (2013)
- Chair, Candidacy Exam Committee, University of Chicago (2012-13)
- Convener, Software Working Group, LSST Dark Energy Science Collaboration (2012-13)
- Organizing Committee, XC3: External Correlations of the CMB and Cosmology (2013)
- Scientific Review, Swiss National Supercomputing Centre (2013)

- Deputy Secretary-Treasurer, Division of Astrophysics, American Physical Society (2013-14)
- DOE HEP Dark Energy Science Plan Task Force (2012)
- Hans Bethe Award Committee, American Physical Society (2012, 2013)
- Co-Chair, Task Force on DES Scientific Computing (2012)
- Convener, “Dark Energy and CMB” sub-group, Snowmass Community Study (2012-13)
- Panelist, DOE Comparative Reviews (2012, 2013)
- Reviewer, NASA Postdoctoral Program (2011)
- Co-Lead, Inflation MA, Physics Frontier Center (2011-2017)
- Co-coordinator, Theory and Combined Probes Working Group, Dark Energy Survey (2011-present)
- Local Organizing Committee, SUSY 2011
- Reviewer, Consolider Program, Spanish Ministry of Science and Innovation (2011)
- External Reviewer, Research Grants Council, Hong Kong (2011)
- Reviewer, DOE Early Career Research Program (2011)
- Summer Public Lectures and Dialogs Committee, Aspen Center for Physics (2011)
- Co-convener, Meeting of the Division of Particles and Fields, APS (2011)
- Chicagoland Task Force on Computational Cosmology, co-Chair (2011)
- Reviewer for Discovery Grants submitted to National Sciences and Engineering Research Council of Canada (NSERC)
- Reviewer for Swiss National Science Foundation (2010)
- Admissions Committee, Aspen Center for Physics (4 years)
- Scientific Organizing Committee, Fermilab Symposium on the Cosmic Frontier (2011)
- International Coordinator, Kavli Institute for Theoretical Physics China 4-week Cosmology Program
- International Advisory Committee, TAUP 2011
- Reviewer, Consolider Cosmology Program (2010)
- DOE Visiting Committee, Caltech (2010)
- Summer Program Committee, Aspen Center for Physics (2010)
- Chair, NASA Astrophysics Theory Program Review Panel “Cosmic Microwave Background” (2009)
- Chair, NSF Review Panel “Large Scale Structure” (2009)
- Co-Chair, Scientific Committee, Theoretical Advanced Studies Institute (TASI) (2009)
- Chair, Summer Program Committee, Aspen Center for Physics (2009)
- Strategic Planning Committee, Kavli Institute for Cosmological Physics (2008-9)
- Chair, Organizing Committee, CMBPol Theory Workshop (2008)
- Editor, Physics Letters B (2008-2017)

- Advisor, *Annual Review of Nuclear and Particle Science* (2007)
- External Referee: Israel Science Foundation, Natural Sciences and Engineering Research Council of Canada (2007)
- Chair, NASA Astronomy and Physics Research and Analysis panel (2007)
- Panel Member for DOE Innovative and Novel Computational Impact on Theory and Experiment (INCITE) Program (2006)
- Member, Astronomy and Astrophysics Advisory Committee (2006-09)
- Member, Aspen Center for Physics (2006-2020)
- Program Committee, Annual Meeting Division of Particle of Fields (2006)
- Managing Editor, *International Journal of Modern Physics D* (2004-08)
- Divisional Editor, *Physical Review D* (2004-06)
- Organizer, “Fundamental Physics from Clusters of Galaxies” (2004)
- Editor, *Journal of Astroparticle Physics* (2003-2010)
- Member, Local Advisory Committee, Center for Cosmological Physics, Chicago (2001-5)
- Head, External Advisory Committee, Theoretical Astrophysics Center, Denmark (2002)
- Co-organizer, Workshop on Neutrinos and Cosmology, Fermilab and Cosmo-02 (2002)
- Co-Organizer “Chicago Chattaqua on Cosmology,” for thirty college teachers (1999,2001)
- Co-Organizer “Pritzker Symposium and Workshop on Inflation,” (1999) “Inner Space/Outer Space II,” and “Santa Fe Workshop on Cosmology” (1999).
- Organized “Sloan Digital Sky Survey Collaboration Meeting” and “Missing Energy in the Universe” Workshop (1998)
- Panel member for National Science Foundation research proposals
- Panel member for NASA Astrophysics Theory Program research proposals
- Reviewer for Department of Energy research proposals
- Referee for *Physical Review D*, *Physical Review Letters*, *Astrophysical Journal*, *Astrophysical Journal Letters*, *Annals of Physics*, *Physics Letters*, *New Astronomy*, *Nature*, *JCAP*
- Preceptor overseeing undergraduate labs, Columbia University (1985)

## Books

*Modern Cosmology* (Academic Press, Amsterdam, 2003).

*CMB Polarization Workshop: Theory and Foregrounds: CMBPol Mission Concept Study*, Editor (American Institute of Physics, 2009).

*Physics of the Large and the Small: Tasi 2009, Proceedings of the 2009 Theoretical Advanced Study Institute in Elementary Particle Physics*, co-Editor (World Scientific 2011).

*Gravitational Lensing* (Cambridge University Press, 2017)

*Modern Cosmology, 2nd Edition* (Academic Press, Amsterdam, 2020).

## Invited Talks

- [1] “Cosmology from the Dark Energy Survey and what lies ahead,” Colloquium, Oxford (2021).
- [2] “New Probes of Large Scale Structure,” Copernicus Webinar/Colloquium (2021).
- [3] “Neutrino mass constraints from cosmic surveys,” Colloquium, Fermilab (2019).
- [4] “Cosmological neutrino mass constraints from galaxy clustering and weak lensing,” Wilhelm und Else Heraeus-Seminar 698 Massive Neutrinos, Germany (2019).
- [5] “Cosmology in the New Era,” Phenomenology Symposium, Pitt (2019).
- [6] “The Mystery of the Matter–Anti-Matter Asymmetry,” AAAS Special Session, Washington (2019).
- [7] “Dark Energy Survey Cosmology,” Distinguished Visitor Lecture, Haverford College (2019).
- [8] “The Standard Model of Cosmology,” SLAC Summer Institute (2018).
- [9] “Results from the Dark Energy Survey,” Colloquium, University of Pittsburgh (2017).
- [10] “Field Theory,” Prelude to First MCS Theory Center Event (2017).
- [11] “Dark Energy Survey Cosmology,” Colloquium, Stonybrook University (2017).
- [12] “Cosmology and the Dark Energy Survey,” Plenary, UK Annual Theory Meeting, Durham, England (2017).



- [13] “Neutrinos and Cosmology,” International Neutrino Summer School (2017).
- [14] “Neutrinos and Cosmology,” Katrin Collaboration Meeting, Carnegie Mellon University (2017).
- [15] “Dark Energy Survey Cosmology,” Fermilab Joint Theoretical and Experimental Seminar (2017).
- [16] “Myth Busters: Dark Energy Survey and South Pole Telescope,” Colloquium, Harvard University (2017).
- [17] “Myth Busters: Dark Energy Survey and South Pole Telescope,” Colloquium, Queens University (2017).
- [18] “Beyond the Core Science,” CMB-S4 Collaboration Meeting, SLAC (2017).
- [19] “Myth Busters: Dark Energy Survey and South Pole Telescope,” Colloquium, Carnegie Mellon University (2017).
- [20] “LSST,” Invited Talk, Inferi Workshop (2016).
- [21] “Future Cosmic Surveys,” Astronomy and Astrophysics Advisory Committee (2016).
- [22] “Large Scale Structure: 4 Lectures,” Theoretical Advanced Studies Institute (2016).
- [23] “Myth Busters: Dark Energy Survey and South Pole Telescope,” Colloquium, Argonne National Laboratory (2016).
- [24] “Myth Busters: Dark Energy Survey and South Pole Telescope,” Fermilab Joint Theoretical and Experimental Seminar (2016).
- [25] “Cross-Correlations,” CMB-S4 Collaboration Meeting, LBL (2016).
- [26] “Myth Busters: Dark Energy Survey and South Pole Telescope,” Colloquium, University of Minnesota (2016).
- [27] “Theoretical Perspectives on Cosmology and Cosmic Dawn,” Plenary, U.S. Radio/Millimeter/Submillimeter Science Futures in the 2020s (2015).
- [28] “Myth Busters: Dark Energy Survey and South Pole Telescope,” Joint Theoretical and Experimental Seminar, Fermilab (2015).
- [29] “Cosmic Neutrinos,” Plenary, Ice Cube Symposium, Madison (2015).
- [30] “Neutrinos and Cosmology,” Second International Meeting for Large Neutrino Infrastructures, Fermilab (2015).

- [31] “Early Results from DES (and SPT), HEAP Seminar, Utah (2015).
- [32] “The Story of BICEP,” University of Utah Colloquium (2015).
- [33] “Cosmic Neutrinos,” Neutrino Division Seminar, Fermilab (2015).
- [34] “Neutrinos in Particle Physics and Cosmology,” KICP Colloquium (2015).
- [35] “Cosmic Neutrinos,” Special Session, Annual Meeting, American Association for the Advancement of Science, San Jose (2015).
- [36] “Power of Cosmic Surveys,” ICTP Colloquium, Sao Paulo (2014).
- [37] “Combined Probes in Cosmology: 4 Lectures,” ICTP Summer School, Brazil (2014).
- [38] “Extending the Reach,” HEP Division Seminar, Argonne National Laboratory (2014).
- [39] “Extending the Reach,” Colloquium, University of Texas, Dallas (2014).
- [40] “Cosmic Surveys,” International Committee for Future Accelerators, Beijing (2014).
- [41] “Combined Probed in the Dark Energy Survey,” Cosmo14 (2014).
- [42] “Cosmology Basics: Three Lectures,” SLAC Summer Institute (2014).
- [43] “From Einstein to Google: New Approaches to Dark Energy,” Fermilab Users Meeting (2014).
- [44] “Cosmological Survey Inference System,” LSST DESC, Penn (2014).
- [45] “Dark Sector vs. Modified Gravity,” Public Lecture, Bogazici University (2014).
- [46] “Cosmic and Biological Evolution,” Two lectures, Bogazici University (2014).
- [47] “Software Analysis,” DES-LSST Workshop, Fermilab (2014).
- [48] “Lensing of the Cosmic Microwave Background,” Fermilab Academic Lectures (2013).
- [49] “Software Framework,” LSST DESC Collaboration Meeting, Pittsburgh (2013).
- [50] “Evidence for Dark Matter,” Fermilab Academic Lectures (2013).
- [51] “Challenges for MKIDS in Dark Energy,” MKIDS Workshop, Fermilab (2013).
- [52] “Theoretical Challenges in the post-Planck Era,” Keynote talk, Bay Area Particle Theory Seminar (2013).

- [53] “Particle Physics from Cosmic Surveys,” Plenary, Division of Particle and Fields Annual Meeting (2013).
- [54] “Cosmic Surveys Colloquium,” Introduction, Community Summer Study (“Snowmass”) (2013).
- [55] “Intensity Frontier Colloquium,” Short contribution, Community Summer Study (“Snowmass”) (2013).
- [56] “Developments in Cosmology,” Theory Session, Community Summer Study (“Snowmass”) (2013).
- [57] “Cross Correlations with DES,” South Pole Telescope Collaboration Meeting (2013).
- [58] “The Myth of 4+1 Independent Probes,” International School of Physics Enrico Fermi: New Horizons for Observational Cosmology, Italy (2013).
- [59] “CMB Anisotropies,” International School of Physics Enrico Fermi: New Horizons for Observational Cosmology, Italy (2013).
- [60] “Cosmology Theory,” Weak Lensing Workshop, Aspen Center for Physics (2013).
- [61] “Cross Correlations,” Webinar, Laboratori Interinstitucional de e-Astronomia, Brazil (2013).
- [62] “Resolving the Unresolved in Fermi,” Stanford Cosmology Seminar (2013).
- [63] “View from the Cosmic Frontier,” Intensity Frontier Workshop, Argonne National Laboratory (2013).
- [64] “Cosmology after Planck,” Joint Stony Brook/Brookhaven Cosmology Seminar (2013).
- [65] “Science Analysis Framework Update,” DES Council Operations Review (2013).
- [66] “Inflation: Status and Prospects,” Cosmology Seminar, Penn (2013).
- [67] “Dark Energy and the CMB,” SLAC Cosmic Frontier Workshop (2013).
- [68] “Neutrinos in the Cosmos,” SLAC Cosmic Frontier Workshop (2013).
- [69] “Current and future constraints on neutrinos in the cosmos,” Neutrino Workshop, Aspen Center for Physics (2013).
- [70] “Inflation,” Physics of the Universe Summit, California (2013).

- [71] “DES Software Framework,” LSST DESC meeting, SLAC (2013).
- [72] “Dark Energy and Beyond,” LSST DESC meeting, SLAC (2013).
- [73] “DES Computing,” NERSC Planning Workshop, Washington D.C. (2012).
- [74] “Inflation,” Gravity and Cosmology Seminar, University of North Carolina (2012).
- [75] “Modified Gravity vs. the Dark Sector,” Colloquium, University of Florida (2012).
- [76] “Inflation,” High Energy Physics Seminar, University of Florida (2012).
- [77] “CMB Science in the Post-WMAP Era,” Cosmo 2012, Beijing, China (2012).
- [78] “The Dark Sector vs. Modified Gravity,” Kavli Prize Week, Oslo, Norway (2012).
- [79] “Introduction to Cosmology: Three Lectures,” ICTP Summer School, Trieste, Italy (2012).
- [80] “The Current State of Dark Energy,” LSST Dark Energy Science Collaboration Meeting, Philadelphia, PA (2012).
- [81] “The Cosmic Frontier,” Eleventh Conference on the Intersections of Particle and Nuclear Physics, Tampa, FL (2012).
- [82] “Cosmological Constraints on Neutrinos,” Short-Baseline Focus Group, Fermilab (2012).
- [83] “Modified Gravity vs. the Dark Sector,” Colloquium, University of California, San Diego (2012).
- [84] “Gravitational Lensing,” University of California, San Diego (2012).
- [85] “Gravitational Lensing,” Simon Fraser University (2012).
- [86] “Modified Gravity vs. the Dark Sector,” Colloquium, University of British Columbia (2012).
- [87] “Gravitational Lensing,” Challenges IV, Brazil (2011).
- [88] “Cosmic Microwave Background,” Challenges IV, Brazil (2011).
- [89] “Inflation,” SUSY-2011, Chicago (2011).
- [90] “Modified Gravity vs. the Dark Sector,” Colloquium, IUCAA Pune, India (2011).

- [91] “Gravity on Large Scales,” Plenary, Lepton Photon, Mumbai, India (2011).
- [92] “Cosmology,” Workshop on Novel Telescopes for 21 cm Cosmology, Penticton, BC (2011).
- [93] “Dark Energy and Modified Gravity,” CCAPP Symposium, Ohio State (2011).
- [94] “The Dark Sector vs. Modified Gravity,” Colloquium, Institute for Physics and Mathematics of the Universe, Japan (2011).
- [95] “Gravitational Lensing: Shedding Light on Dark Energy and Inflation,” Seminar, University of Tokyo, Japan (2011).
- [96] “The Dark Sector vs. Modified Gravity,” Colloquium, University of Michigan (2011).
- [97] “The Dark Sector vs. Modified Gravity,” Colloquium, University of Illinois at Urbana (2011).
- [98] “The Dark Sector vs. Modified Gravity,” Colloquium, Penn State University (2010).
- [99] “Dark Matter in the Era of the LHC,” Invited Talk, Il Prometeo Workshop III, Valencia, Spain (2010).
- [100] “Combined Probes Working Group Summary Talk,” DES Collaboration Meeting (2010).
- [101] “Challenges for Modified Gravity,” Workshop on Modified Gravity and the Dark Sector, Strasbourg, France (2010).
- [102] “Cosmology,” Three Lectures at Summer School, Pan American Studies Institute (PASI) (2010).
- [103] “The Dark Sector vs. Modified Gravity,” Colloquium, Yale University (2010).
- [104] “Lensing and Neutrino Masses,” INT Workshop on Neutrino Masses, University of Washington (2010).
- [105] “Dark Matter and the Constitutional Convention,” Inaugural Workshop on Particle Astrophysics, University of Pennsylvania (2009).
- [106] “Combining Probes with an eye on Modified Gravity,” DES Collaboration Meeting (2009).
- [107] “Inflation and Gravitational Waves,” Seminar, University of Wisconsin, Milwaukee (2009).

- [108] “Quarks to the Cosmos and Einstein,” Colloquium, Brown University (2009).
- [109] “Gravitational Waves on the Horizon,” Invited Talk, Primordial Gravitational Waves, Cambridge (2009).
- [110] “Quantum Theory, Symmetries, and Cosmology,” Plenary Talk, Quantum Theory and Symmetries 6, Lexington, KY (2009).
- [111] “Astroparticle Physics, Two Lectures,” CTEQ Summer School, Madison, WI(2009).
- [112] “TeVSe: Modified Gravity Inside Out,” Aspen Center for Physics (2009).
- [113] “CMBPol,” High Energy Seminar, Argonne National Laboratory(2009).
- [114] “Issues in Gravitational Lensing,” Seminar, University of Pennsylvania(2009).
- [115] “Fundamental Physics from Space,” Colloquium, Rochester University (2009).
- [116] “Issues in Gravitational Lensing,” Seminar, Perimeter Institute (2009).
- [117] “Primordial Gravitational Waves,” Special Session, Annual Meeting, American Association for the Advancement of Science (2009).
- [118] “Cosmic Microwave Background,” Aspen Winter Workshop (2009).
- [119] “Evidence for Inflation,” Special Session, Annual Meeting, American Astronomical Society (2009).
- [120] “Fundamental Physics from Space,” Colloquium, University of North Carolina (2008).
- [121] “Dark Matter vs. Modified Gravity,” Seminar, University of North Carolina (2008).
- [122] “Cosmology, Four Lectures,” Maria Laach Summer School (2008).
- [123] “Fundamental Physics From Space,” Summer Lecture Series, Fermilab (2008).
- [124] “Observational Cosmology, Three Lectures,” Theoretical Advanced Studies Institute, Boulder, Colorado (2008).
- [125] “Present and Future of Observational Cosmology,” Users Meeting, Fermilab (2008).
- [126] “Summary Talk,” Particle Physics and Cosmology 2008 Albuquerque, NM (2008).
- [127] “Dark Matter vs. Modified Gravity,” Seminar, University of Minnesota (2008).

- [128] “Dark Matter vs. Modified Gravity,” Seminar, Simon Fraser University (2008).
- [129] “Fundamental Physics from Space,” Colloquium, Simon Fraser University (2008).
- [130] “Dark Matter vs. Modified Gravity,” Colloquium, Syracuse University (2007).
- [131] “Computational Cosmology,” Physics Advisory Committee, Fermilab (2007).
- [132] “Fundamental Physics from Space,” Colloquium, Illinois Institute of Technology (2007).
- [133] “Dark Matter vs. Modified Gravity,” Workshop on Modern Cosmology, Perimeter Institute (2007).
- [134] “Cosmology for Particle Physicists, 3 Lectures,” SLAC Summer Institute (2007).
- [135] “Fundamental Physics from Space,” Summer Lecture, Fermilab (2007).
- [136] “Neutrinos in Cosmology,” Wine & Cheese Seminar, Fermilab (2007).
- [137] “Beyond-the-Standard-Model Cosmology,” Colloquium, University of Pittsburgh (2006).
- [138] “Cosmology,” Plenary, APS Divisions of Particles and Fields Annual Meeting, Hawaii (2006).
- [139] “SDSS Publication Policy,” Special Session, Joint Meeting of Pacific Region Particle Physics Communities, Hawaii (2006).
- [140] “Two Lectures on Cosmology,” Pan-American Advanced Studies Institute, Puerto Vallarta, Mexico (2006).
- [141] “Modified Gravity vs. Dark Matter,” Colloquium, CCAPP Ohio State University (2006).
- [142] “Fundamental Physics from Space,” Colloquium, Northern Illinois University (2006).
- [143] “Modified Gravity vs. Dark Matter,” Fermilab (2006).
- [144] “Fundamental Physics from Space,” Colloquium, Northern Illinois University (2006).
- [145] “Gravitational Lensing,” Plenary Talk, IRGAC, Barcelona, Spain (2006).
- [146] “Precision Cosmology and Neutrinos,” Plenary, Neutrino 2006, Santa Fe (2006).

- [147] “Lectures on Cosmology,” Theoretical Advanced Studies Institute, Boulder, Colorado (2006, 2008, 2016).
- [148] “Three Lectures on the Clumpy Universe,” Academic Lectures II, Fermilab (2006).
- [149] “Three Lectures on the Smooth Universe,” Academic Lectures I, Fermilab (2006).
- [150] “CMB-Cluster Lensing,” Fundamental Physics With Cosmic Microwave Background Radiation, UC Irvine (2006).
- [151] “Fundamental Physics from Space,” University of Kentucky (2006).
- [152] “Cosmic Deflections,” University of Kentucky (2006).
- [153] “Cosmic Deflections,” Harvard University (2006).
- [154] “Gravitational Lensing,” University of Illinois (2005).
- [155] “Five Lectures on Cosmology,” INPE Advanced Course, Sao Jose dos Campos, Brazil (2005).
- [156] “CMB Primary Anisotropies,” Frontiers in Contemporary Physics, Vanderbilt University (2005).
- [157] “CMB Secondary Anisotropies,” Frontiers in Contemporary Physics, Vanderbilt University (2005).
- [158] “Gravitational Lensing,” Colloquium, Columbia University (2005).
- [159] “Dark Energy in the Universe,” High Energy Seminar, Argonne National Lab (2005).
- [160] “Second Order Corrections to Cosmic Shear,” SNAP Science Meeting (2005).
- [161] “Learning from Lensing: Power Spectrum and Bispectrum,” Workshop, Ohio State University (2005).
- [162] “Dark Energy,” Colloquium, Vanderbilt University (2004).
- [163] “Cosmology constraints on Neutrinos,” Argonne Theory Institute on Higgs SUSY and Extra Dimensions (2004).
- [164] “Dark Energy, Clusters, and Lensing,” Northwestern University (2004).
- [165] “Dark Energy, Clusters, and Lensing,” University of North Carolina (2004).



- [166] “Dark Energy, Clusters, and Lensing,” Mitchell Symposium on Observational Cosmology (2004).
- [167] “Weak Lensing,” Seminar, University of Wisconsin, Madison (2003).
- [168] “Dark Energy in the Universe,” Colloquium, University of British Columbia (2003).
- [169] “SDSS and the CMB,” Kingston Workshop on the CMB (2003).
- [170] “Massive Neutrinos and the Cosmos,” Colloquium, University of Kansas (2003).
- [171] “Cosmological Puzzles,” Tropical Workshop on Particle Physics & Cosmology, Cairns (2003).
- [172] “Cosmic Harmony,” Tropical Workshop on Particle Physics & Cosmology, Cairns (2003).
- [173] “Sloan Digital Sky Survey,” Colloquium, University of Wisconsin, Madison (2003).
- [174] “Dark Energy in the Universe,” Experimental Seminar, SLAC (2003).
- [175] “Running, CMB, and the Lyman alpha forest,” Workshop on CMB, Minnesota (2003).
- [176] “What can we learn about Neutrinos from Large Scale Structure,” KITP Symposium on Neutrinos, Santa Barbara (2003).
- [177] “First Impressions of the WMAP Results,” Enrico Fermi Mini-Symposium (2003).
- [178] “Dark Energy in the Universe,” Illinois Institute of Technology (2002).
- [179] “Dark Energy in the Universe,” Physics Colloquium, Brandeis University (2002).
- [180] “Dark Energy in the Universe,” Joint Theoretical/Experimental Seminar, Fermilab (2002).
- [181] “CMB Lensing by Galaxies,” Workshop on CDM Structure, Chicago (2002).
- [182] “CMB Anisotropies: Primary and Secondary,” Invited Review Talk, Santa Fe Cosmology Workshop (2002).
- [183] “Cosmology Past the Crossroads,” Colloquium, Aspen Center for Physics (2002).
- [184] “Solving the Why Now Problem,” Invited talk, APS Divisions of Particles and Fields, Annual Meeting (2002).

- [185] “Results from the Sloan Digital Sky Survey,” Plenary, Pheno02, Wisconsin (2002).
- [186] “Dark Energy in the Universe,” Illinois Institute of Technology (2001).
- [187] “Can the Inflationary paradigm ever be more than a plausible myth?” Plenary talk at *Frontier of the Universe* Blois, France (2001).
- [188] “Cosmology and Particle Physics,” High Energy Physics Advisory Panel (HEPAP) (2001).
- [189] “Angular Clustering in the SDSS,” Workshop on CDM Halos, Fermilab (2001).
- [190] “CMB: Past, Future, and Present,” Purdue University (2000).
- [191] “CMB: Past, Future, and Present,” Brookhaven National Laboratory (2000).
- [192] “Large Scale Structure from Early SDSS Data,” Enrico Fermi Institute (2000).
- [193] “CMB: Past, Future, and Present,” Ohio State University (2000).
- [194] “CMB: Past, Future, and Present,” Plenary, PASCOS 99, Lake Tahoe, CA (1999).
- [195] “CMB: Future and Present,” Plenary, COSMOS 99, Trieste, Italy (1999).
- [196] “Cosmic Microwave Background,” Plenary, Lepton-Photon 99, Stanford University (1999).
- [197] “The Inverse Problem,” Sante Fe Workshop on Large Scale Structure, (1999).
- [198] “The History of the History of the Universe,” Physics Colloquium, Northwestern University (1999).
- [199] “MSAM Results” and “Implications for Open Inflation,” Pritzker Workshop on Inflation (1999).
- [200] “Latest Results from the CMB,” Astrophysics Colloquium, Northwestern University (1999).
- [201] “Lensed QSOs with the Sloan Digital Sky Survey,” Missing Energy Workshop, Fermilab (1998).
- [202] “What will we learn from the CMB?” Colloquium, Wayne State University (1998).
- [203] “CMB and Parameters,” Coral Gables Conference on High Energy Physics and Cosmology (1998).

- [204] “Numerical Issues in Cosmology,” Computational Methods Seminar, University of Chicago (1997).
- [205] “What will we learn from the CMB?” Plenary talk at Birth of the Universe Conference, Rome, Italy (1997).
- [206] “Large Scale Structure and the Cosmic Microwave Background,” Bartol Research Institute (1997).
- [207] “The End of Cosmic Confusion,” Colloquium, University of Chicago (1997).
- [208] “The End of Cosmic Confusion,” Coral Gables Conference on High Energy Physics and Cosmology (1997).
- [209] “Cosmic Microwave Background: Theory,” Plenary, 18th Texas Symposium on Relativistic Astrophysics, Chicago, IL (1996)
- [210] “The End of Cosmic Confusion,” Columbia University (1996)
- [211] “The End of Cosmic Confusion,” Notre Dame University (1996)
- [212] “The End of Cosmic Confusion,” Case Western Reserve University (1996)
- [213] “Determining CMB Anisotropy in the presence of foregrounds,” Moriond Conference on CMB (1996).
- [214] “The Doppler Peaks and the CMB,” University of Chicago (1996).
- [215] “Learning from the Cosmic Microwave Background,” Enrico Fermi Institute (1995).
- [216] “Foreground Separation in Anisotropy Experiments,” Conference on Cosmic Background Radiations, Santa Barbara (1995).
- [217] “The Hubble Constant,” Fermilab (1994).
- [218] “Warm Dark Matter,” Particle and Nuclear Astrophysics in the Next Millenium, Snowmass Summer Study (1994); University of Pennsylvania (1994).
- [219] “Testing Inflation with the Cosmic Microwave Background,” Goddard Institute for Space Science (1993); Ohio State University (1993); Case Western Reserve University (1994); Workshop on the Cosmic Microwave Background, Case Western Reserve University (1994); Particle and Nuclear Astrophysics in the Next Millenium, Snowmass Summer Study (1994); Marcel Grossman Meeting on General Relativity, Stanford (1994); Annual Meeting of Division of Particles and Fields, New Mexico (1994).

- [220] “Cosmic Microwave Background: From Inflation to Dust,” Canadian Institute of Theoretical Astrophysics (1993); Queens University (1993).
- [221] “CDM confronts the CMB: an analysis including the effects of foreground,” Cosmic Microwave Background Workshop, Capri, Italy (1993).
- [222] “Anisotropies in the Cosmic Microwave Background,” Great Lakes Cosmology Workshop, University of Michigan (1993).
- [223] “Sterile Neutrinos as Dark Matter,” Princeton University (1993).
- [224] “Microwave Anisotropies in Light of COBE,” Annual meeting of Division of Particles and Fields, Batavia, IL (1992).
- [225] “Decaying Dark Matter,” Purdue University (1992).
- [226] “Tunneling Rates: Is the Effective Potential a good approximation?” Workshop on Cosmological Phase Transitions, University of California at Santa Barbara (1992).
- [227] “Towards a Quantitative Understanding of the Electroweak Phase Transition,” Bartol Research Institute (1992).
- [228] “Is Symmetry Restored at High Temperature?” Cornell (1991); University of Wisconsin (1992).
- [229] “Constraints on Neutrino Decays from SN 1987A,” Many Aspects of Neutrino Physics conference, Fermilab (1991); Workshop on 17 keV Question, University of California at Berkeley (1991).
- [230] “Relativistic Bose-Einstein Condensation,” MIT (1991); Boston University (1991).
- [231] “Baryon-symmetric Baryogenesis,” Fermilab (1989); joint CFA-Tufts early universe seminar (1989); Brown University (1990).
- [232] “Distortions of the Microwave Background,” University of Georgia (1989); University of Massachusetts, Amherst (1989).