STEPHEN R. GREEN

University of Nottingham – School of Mathematical Sciences
University Park, Nottingham NG7 2RD, UK

+44 7360609808   •   stephen.green2@nottingham.ac.uk

https://www.stephenrgreen.com/

EDUCATION

University of Chicago, Chicago, USA

Ph.D. in Physics (general relativity)	08.2012
– Thesis: *Nonlinear Backreaction in Cosmology*	
– Adviser: Robert M. Wald	
S.M. in Physical Sciences	06.2006

University of Toronto (Trinity College), Toronto, Canada

Honours B.Sc. in Mathematics and Physics with High Distinction	06.2005

RESEARCH EXPERIENCE

University of Nottingham, Nottingham, UK

Assistant Professor, School of Mathematical Sciences	starting 2025
Senior Research Fellow, School of Mathematical Sciences	2022–2025
– Member of LIGO Scientific Collaboration since 2018	
– Member of LISA Consortium since 2021	

Max Planck Institute for Gravitational Physics, Potsdam-Golm, Germany

Senior Scientist	2021–2022
Junior Scientist / Postdoctoral Researcher	2017–2021

Perimeter Institute for Theoretical Physics, Waterloo, Canada

Postdoctoral Researcher	2014–2017

University of Guelph, Guelph, Canada

CITA National Postdoctoral Fellow, Department of Physics	2012–2014
– Adviser: Luis Lehner	

University of Chicago, Chicago, USA

Research Assistant, Enrico Fermi Institute	2006–2012
– Adviser: Robert M. Wald	

University of Toronto, Toronto, Canada

NSERC Undergraduate Student Research Awards	Summers 2002–2004
– Departments of Mathematics and Physics	
– Advisers: Ue-Li Pen, Chistopher Matzner, Dror Bar-Natan, and Robert Almgren	

FUNDING

UKRI Future Leaders Fellowship   2024–2028

AI-Driven Inference for Gravitational Waves: Accelerating Discoveries in Fundamental Physics
Amount: £1,522,003
Role: Project Lead

Nottingham Research Fellowship   2022–2025

Black holes, gravitational waves, and machine learning probes
Amount: £221,500
Role: Fellow
– salary + £75,000 research funds
– linked to a permanent faculty position

TEACHING EXPERIENCE

Advising

PhD students supervised
– Jacopo Lestingi (Nottingham, 2023–present)
– Alex Roussopoulos (Nottingham, 2023–present)

PhD students co-supervised or worked closely with
– Annalena Kofler (MPI-IS, 2023–present)
– Jonas Wildberger (MPI-IS, 2021–present)
– Maximilian Dax (MPI-IS, 2020–present)
– Nihar Gupte (AEI, 2021–2022)
– Pablo Bosch (Perimeter, 2015–2019)

Visiting Masters students
– Hugo Roussille (École Normale Supérieure, visiting Perimeter, 2017)
– Antoine Maillard (École Normale Supérieure, visiting Perimeter, 2015)

Summer undergraduate students
– Jérémie Gagnon-Bischoff (Perimeter, 2017)
– Stanislav Fort (Perimeter, 2015)

Schools

Kavli-Villum Summer School on Gravitational Waves   09.2023
Corfu, Greece
– Lecturer, "Machine Learning for Gravitational Waves"

LISA data analysis: from classical methods to machine learning   11.2022
Toulouse, France
– Lecturer, "GW Parameter Estimation with Bayesian Machine Learning"

Numerical Methods in Gravity and Holography   11.2017–12.2017
Universidad de Concepción, Chile
– Lecturer, "Stability of Gravitational Systems on Bounded Domains"

Courses

Max Planck Institute for Gravitational Physics
– Lecturer, machine learning component of IMPRS course on statistics   12.2021
for GW astronomy (slides and recordings)

University of Chicago Department of Physics
– Grader, graduate general relativity course   Winters 2008, 2010-2012
– Teaching assistant, introductory physics courses   09.2005–06.2007

SCHOLARSHIPS AND AWARDS

Postdoctoral

Marie Sklodowska-Curie Actions Seal of Excellence (2017)
National Fellowship (Canadian Institute for Theoretical Astrophysics, 2012–2014)

Graduate

Nathan Sugarman Award (Enrico Fermi Institute, 2012)
    – for excellence in graduate research
Blue Apple Award (Midwest Relativity Meeting, 2011)
    – for best student talk (out of 29)
Harvey B. Plotnick Fellowship (Chicago, 2010)
Postgraduate Scholarship D (NSERC, 2007–2010)
    – 21,000 CAD / year
Sachs Fellowship (Chicago, 2006)

Undergraduate

Chancellor's Gold Medal in Science (Trinity College, 2005)
Governor General's Silver Academic Medal Nominee (Trinity College, 2005)
Prince of Wales Prize (Trinity College, 2005)
    – for high achievement in mathematics
University of Toronto Scholarship (2002–2005)
Dean's List (2002–2005)
Beatrice Evelyn Rodgers Scholarship (Toronto, Math and Physics, 2005)
Margaret Ronald Taylor and Thomas Paxton Taylor Award (Toronto, Math, 2004–2005)
Isaac Chapman Boyd and Sarah Edith Boyd Scholarship (Trinity College, 2004)
    – for highest overall average in third year
Provost's Scholar (Trinity College, 2004)
3T0 M. & P. and Associates Scholarship (Toronto, Physics, 2004)
James Scott Scholarship (Trinity College, 2004)
Ivan Szak Scholarship (Toronto, Math, 2004)
William R. Hossack Memorial Scholarship (Toronto, Math and Physics, 2003)
William Mulock Prize (Toronto, Math and Physics, 2003)
Coxeter Scholarship (Toronto, Math, 2003)
Drew Thompson Scholarship (Trinity College, 2003)
Canadian Association of Physicists University Prize Examination, 10th place (2003)
Elizabeth Kingstone Scholarship (Trinity College, 2002)
Samuel Beatty In-Course Award (Toronto, Math, 2002)
National Biology Competition Scholarship, 4th place (Toronto, 2001)
Trinity College Entrance Scholarship (2001)
Aiming for the Top Scholarship (Government of Ontario, 2001–2004)

High School

Governor General's Bronze Academic Medal (2001)
    – for highest overall average in the graduating class
Ontario Scholar

SERVICE

Organizational activities

Co-organizer, AEI Colloquium Series	09.2019–01.2022
Co-organizer, AEI Astrophysical and Cosmological Relativity Seminar	09.2018–08.2019
Scientific organizer, 26th Midwest Relativity Meeting, PI	10.2016

Chairperson, PI cosmology group meeting	08.2014–08.2016
Chairperson, University of Guelph general relativity group meeting	09.2013–08.2014

Referee activities

Astronomy & Astrophysics, Classical and Quantum Gravity,
European Physical Journal C, JCAP, JHEP, MNRAS, Nature Astronomy,
Nature Communications, Physics Letters B, Physical Review Letters, Physical Review D

Outreach

Ask-A-Scientist volunteer at PI open house	09.2016
Invited keynote lecturer at EinsteinPlus workshop at PI	07.2016
– for Canadian and international high school physics teachers	
Ask-A-Scientist volunteer at PI public lecture	03.2015
Ask-A-Scientist volunteer at PI BrainSTEM Festival	10.2013
Judge at CPES Undergraduate Poster Session (University of Guelph)	2013

Committees

Member of PhD admissions committee	2020–2022
– ACR Division, Max Planck Institute for Gravitational Physics	
Member of graduate admissions committee	2007
– University of Chicago Department of Physics	

Mentoring

University of Toronto Department of Physics mentoring program	2013–2014

PUBLICATIONS

This list excludes LVK Collaboration papers. For a complete list of publications see INSPIRE.

1. C. Iuliano, S. Hollands, S. R. Green, and P. Zimmerman, "Extremal Black Hole Weather", (2024), arXiv:2412.02821 [gr-qc].

2. R. Bachhar, M. Pürrer, and S. R. Green, "Incorporating waveform calibration error in gravitational-wave modeling and inference for SEOBNRv4", (2024), arXiv:2410.17168 [gr-qc].

3. M. Dax, S. R. Green, J. Gair, N. Gupte, M. Pürrer, V. Raymond, J. Wildberger, J. H. Macke, A. Buonanno, and B. Schölkopf, "Real-time inference for binary neutron star mergers using machine learning", Nature **639**, 49–53 (2025), arXiv:2407.09602 [gr-qc].

4. N. Gupte et al., "Evidence for eccentricity in the population of binary black holes observed by LIGO-Virgo-KAGRA", (2024), arXiv:2404.14286 [gr-qc].

5. K. Leyde, S. R. Green, A. Toubiana, and J. Gair, "Gravitational wave populations and cosmology with neural posterior estimation", Phys. Rev. D **109**, 064056 (2024), arXiv:2311.12093 [gr-qc].

6. N. Afshordi et al., "Waveform Modelling for the Laser Interferometer Space Antenna", (2023), arXiv:2311.01300 [gr-qc].

7. E. Cannizzaro, L. Sberna, S. R. Green, and S. Hollands, "Relativistic Perturbation Theory for Black-Hole Boson Clouds", Phys. Rev. Lett. **132**, 051401 (2024), arXiv:2309.10021 [gr-qc].

8. J. B. Wildberger, M. Dax, S. Buchholz, S. R. Green, J. H. Macke, and B. Schölkopf, "Flow matching for scalable simulation-based inference", in Thirty-seventh conference on neural information processing systems (2023), arXiv:2305.17161 [cs.LG].

9. J. Wildberger, M. Dax, S. R. Green, J. Gair, M. Pürrer, J. H. Macke, A. Buonanno, and B. Schölkopf, "Adapting to noise distribution shifts in flow-based gravitational-wave inference", Phys. Rev. D **107**, 084046 (2023), arXiv:2211.08801 [gr-qc].

10. S. R. Green, S. Hollands, L. Sberna, V. Toomani, and P. Zimmerman, "Conserved currents for a Kerr black hole and orthogonality of quasinormal modes", Phys. Rev. D **107**, 064030 (2023), arXiv:2210.15935 [`gr-qc`].

11. M. Dax, S. R. Green, J. Gair, M. Pürrer, J. Wildberger, J. H. Macke, A. Buonanno, and B. Schölkopf, "Neural Importance Sampling for Rapid and Reliable Gravitational-Wave Inference", Phys. Rev. Lett. **130**, 171403 (2023), arXiv:2210.05686 [`gr-qc`].

12. T. Whittaker, W. E. East, S. R. Green, L. Lehner, and H. Yang, "Using machine learning to parametrize postmerger signals from binary neutron stars", Phys. Rev. D **105**, 124021 (2022), arXiv:2201.06461 [`gr-qc`].

13. L. Sberna, P. Bosch, W. E. East, S. R. Green, and L. Lehner, "Nonlinear effects in the black hole ringdown: Absorption-induced mode excitation", Phys. Rev. D **105**, 064046 (2022), arXiv:2112.11168 [`gr-qc`].

14. M. Dax, S. R. Green, J. Gair, M. Deistler, B. Schölkopf, and J. H. Macke, "Group equivariant neural posterior estimation", in International conference on learning representations (2022), arXiv:2111.13139 [`cs.LG`].

15. V. Toomani, P. Zimmerman, A. Spiers, S. Hollands, A. Pound, and S. R. Green, "New metric reconstruction scheme for gravitational self-force calculations", Class. Quant. Grav. **39**, 015019 (2022), arXiv:2108.04273 [`gr-qc`].

16. N. Ortiz, F. Carrasco, S. R. Green, L. Lehner, S. L. Liebling, and J. R. Westernacher-Schneider, "Gamma-radiation sky maps from compact binaries", JCAP **02**, 027 (2022), arXiv:2107.07020 [`astro-ph.HE`].

17. M. Dax, S. R. Green, J. Gair, J. H. Macke, A. Buonanno, and B. Schölkopf, "Real-Time Gravitational Wave Science with Neural Posterior Estimation", Phys. Rev. Lett. **127**, 241103 (2021), arXiv:2106.12594 [`gr-qc`].

18. S. R. Green and J. Gair, "Complete parameter inference for GW150914 using deep learning", Mach. Learn. Sci. Tech. **2**, 03LT01 (2021), arXiv:2008.03312 [`astro-ph.IM`].

19. S. R. Green, C. Simpson, and J. Gair, "Gravitational-wave parameter estimation with autoregressive neural network flows", Phys. Rev. D **102**, 104057 (2020), arXiv:2002.07656 [`astro-ph.IM`].

20. P. Bosch, S. R. Green, L. Lehner, and H. Roussille, "Excited hairy black holes: dynamical construction and level transitions", Phys. Rev. D **102**, 044014 (2020), arXiv:1912.05598 [`gr-qc`].

21. S. R. Green, S. Hollands, and P. Zimmerman, "Teukolsky formalism for nonlinear Kerr perturbations", Class. Quant. Grav. **37**, 075001 (2020), arXiv:1908.09095 [`gr-qc`].

22. J. Gagnon-Bischoff, S. R. Green, P. Landry, and N. Ortiz, "Extended I-Love relations for slowly rotating neutron stars", Phys. Rev. **D97**, 064042 (2018), arXiv:1711.05694 [`gr-qc`].

23. S. R. Green and R. M. Wald, "A simple, heuristic derivation of our 'no backreaction' results", Class. Quant. Grav. **33**, 125027 (2016), arXiv:1601.06789 [`gr-qc`].

24. P. Bosch, S. R. Green, and L. Lehner, "Nonlinear Evolution and Final Fate of Charged Anti–de Sitter Black Hole Superradiant Instability", Phys. Rev. Lett. **116**, 141102 (2016), arXiv:1601.01384 [`gr-qc`].

25. S. R. Green, S. Hollands, A. Ishibashi, and R. M. Wald, "Superradiant instabilities of asymptotically anti-de Sitter black holes", Class. Quant. Grav. **33**, 125022 (2016), arXiv:1512.02644 [`gr-qc`].

26. S. R. Green, A. Maillard, L. Lehner, and S. L. Liebling, "Islands of stability and recurrence times in AdS", Phys. Rev. **D92**, 084001 (2015), arXiv:1507.08261 [`gr-qc`].

27. V. Balasubramanian, A. Buchel, S. R. Green, L. Lehner, and S. L. Liebling, "Reply to Comment on "Holographic Thermalization, Stability of Anti-de Sitter Space, and the Fermi-Pasta-Ulam Paradox"", Phys. Rev. Lett. **115**, 049102 (2015), arXiv:1506.07907 `[gr-qc]`.

28. S. R. Green and R. M. Wald, "Comments on Backreaction", (2015), arXiv:1506.06452 `[gr-qc]`.

29. H. Yang, F. Zhang, S. R. Green, and L. Lehner, "Coupled Oscillator Model for Nonlinear Gravitational Perturbations", Phys. Rev. **D91**, 084007 (2015), arXiv:1502.08051 `[gr-qc]`.

30. A. Buchel, S. R. Green, L. Lehner, and S. L. Liebling, "Conserved quantities and dual turbulent cascades in anti-de Sitter spacetime", Phys. Rev. **D91**, 064026 (2015), arXiv:1412.4761 `[gr-qc]`.

31. A. Buchel, S. R. Green, L. Lehner, and S. L. Liebling, "Universality of non-equilibrium dynamics of CFTs from holography", (2014), arXiv:1410.5381 `[hep-th]`.

32. S. R. Green and R. M. Wald, "How well is our universe described by an FLRW model?", Class. Quant. Grav. **31**, 234003 (2014), arXiv:1407.8084 `[gr-qc]`.

33. V. Balasubramanian, A. Buchel, S. R. Green, L. Lehner, and S. L. Liebling, "Holographic Thermalization, stability of AdS, and the Fermi-Pasta-Ulam-Tsingou paradox", Phys. Rev. Lett. **113**, 071601 (2014), arXiv:1403.6471 `[hep-th]`.

34. S. R. Green, J. S. Schiffrin, and R. M. Wald, "Dynamic and Thermodynamic Stability of Relativistic, Perfect Fluid Stars", Class. Quant. Grav. **31**, 035023 (2014), arXiv:1309.0177 `[gr-qc]`.

35. S. R. Green, F. Carrasco, and L. Lehner, "Holographic Path to the Turbulent Side of Gravity", Phys. Rev. **X4**, 011001 (2014), arXiv:1309.7940 `[hep-th]`.

36. S. R. Green and R. M. Wald, "Examples of backreaction of small scale inhomogeneities in cosmology", Phys. Rev. **D87**, 124037 (2013), arXiv:1304.2318 `[gr-qc]`.

37. S. R. Green, "Nonlinear backreaction in cosmology", PhD thesis (University of Chicago, 2012).

38. S. R. Green and R. M. Wald, "Newtonian and Relativistic Cosmologies", Phys. Rev. **D85**, 063512 (2012), arXiv:1111.2997 `[gr-qc]`.

39. S. R. Green, E. J. Martinec, C. Quigley, and S. Sethi, "Constraints on String Cosmology", Class. Quant. Grav. **29**, 075006 (2012), arXiv:1110.0545 `[hep-th]`.

40. S. R. Green and R. M. Wald, "A new framework for analyzing the effects of small scale inhomogeneities in cosmology", Phys. Rev. **D83**, 084020 (2011), arXiv:1011.4920 `[gr-qc]`.

41. B. Pang, U.-L. Pen, C. D. Matzner, S. R. Green, and M. Liebendorfer, "Numerical Parameter Survey of Nonradiative Black Hole Accretion – Flow Structure and Variability of the Rotation Measure", Mon. Not. Roy. Astron. Soc. **415**, 1228–1239 (2011), arXiv:1011.5498 `[astro-ph.GA]`.

SOFTWARE

Lead developer of DINGO (Deep Inference for Gravitational-wave Observations), a package for analyzing gravitational wave data using neural posterior estimation:

- `https://github.com/dingo-gw/dingo`

RESEARCH TALKS

(* denotes invited)

*1. Gravity Seminar, University of Milan Bicocca, Italy (2025).

*2. Gravity Seminar, Cardiff University, UK (2024).

*3. Challenges and future perspectives in gravitational-wave astronomy: O4 and beyond, Lorentz Center, Leiden, The Netherlands (2024).

*4. Panelist on "Data analysis challenges in the signal dominated era" at PAX IX workshop, King's College London, UK (2024).

*5. Panelist on "New data analysis frameworks" at Dawn VII workshop, University of British Columbia, Canada (2024).

*6. ICG Colloquium, University of Portsmouth, UK (2024).

7. Gravitational Wave Physics and Astronomy Workshop, University of Birmingham, UK (2024).

*8. Geometry, Analysis and Gravitation Seminar, Queen Mary University of London, UK (2024).

*9. Gravity Seminar, Niels Bohr Institute, Denmark (2024).

*10. Astrophysics Seminar, University of Birmingham (2023).

*11. London Gravity Meeting, London Institute for Mathematical Sciences, UK (2023)

*12. GravityShapePisa, University of Pisa, Italy (2023).

*13. PCTS/PGI Workshop on Nonlinear Aspects of General Relativity, Princeton University (2023).

*14. Gravity Seminar, University of Southampton, UK (2023).

*15. QSimFP Seminar (2023).

*16. Gr@v Seminar, University of Aveiro, Portugal (2023); (video).

*17. Nottingham Centre of Gravity, University of Nottingham (2022).

*18. Gravity Seminar, University of Virginia (2022).

*19. Sixième Assemblée Générale du GdR Ondes Gravitationnelles, Toulouse, France (2022); (slides).

*20. Keynote Speaker, Workshop on Bayesian Deep Learning for Cosmology and Time Domain Astrophysics #2, Astroparticule et Cosmologie, Paris (2022); (slides) (video).

*21. Physics Colloquium, Montana State University (2022).

*22. Gravity Seminar, Instituto de Ciencias Nucleares, UNAM, Mexico (2022).

23. Gravitational Wave Physics and Astronomy Workshop, Hannover, Germany (2021).

24. Workshop on Machine Learning and the Physical Sciences (NeurIPS 2021); (extended abstract) (poster). (One of three submissions selected for a contributed talk; given by M. Dax.)

*25. Machine Learning Seminar, Princeton Plasma Physics Laboratory (2021).

*26. Berkeley/IAS/UCSB/Weizmann Gravitational Waves Group Meeting Seminar (2021).

*27. Workshop on Source Inference and Parameter Estimation in Gravitational Wave Astronomy, IPAM, UCLA (2021); (slides) (video).

*28. Astrophysics Seminar, Technion – Israel Institute of Technology (2021).

*29. Physics Colloquium, Technion – Israel Institute of Technology (2021).

*30. Observational Relativity and Cosmology Group Meeting Seminar, AEI Hannover, Germany (2021).

31. GW Mull Workshop, Scotland (2021).

32. 14th Edoardo Amaldi Conference on Gravitational Waves, online (2021); (video).

33. 24th Capra Meeting on Radiation Reaction in General Relativity, Perimeter Institute, Waterloo, Canada (2021); (video).

*34. Nikhef Gravity Group Meeting Seminar, Amsterdam, Netherlands (2021).

*35. SISSA & IFPU Gravity Webinar, Trieste, Italy (2021); (slides) (video).

36. American Physical Society April Meeting, online (2021).

37. Third Workshop on Machine Learning and the Physical Sciences (NeurIPS 2020), Vancouver, Canada; (extended abstract) (poster).

*38. Astrophysics Seminar, Technion – Israel Institute of Technology (2020).

*39. Physics Seminar, University of Western Australia (2020).

*40. Workshop on Statistical Methods for the Detection, Classification, and Inference of Relativistic Objects, ICERM (2020); (video).

*41. Applied and Computational Mathematics Seminar, University College Dublin (2020); (video).

42. 23rd Capra Meeting on Radiation Reaction in General Relativity, University of Texas at Austin (2020); (video).

*43. Gravity Seminar, University of Southampton, UK (2020).

44. GWverse COST Action Meeting, IFPU, Trieste, Italy (2020).

*45. BIRS-CMO Workshop on Time-like Boundaries in General Relativistic Evolution Problems, Casa Matématica Oaxaca, Mexico (2019); (video).

46. 22nd International Conference on General Relativity and Gravitation, Valencia, Spain (2019).

*47. Cosmology and Gravitational Physics with Lambda Workshop, Nordita, Sweden (2018).

*48. Mathematical General Relativity Workshop, Mathematisches Forschungsinstitut Oberwolfach, Germany (2018).

*49. CENTRA Seminar, Instituto Superior Técnico, Lisbon, Portugal (2018).

*50. Reduced-Order Model Workshop, Albert Einstein Institute, Potsdam, Germany (2018).

*51. Workshop on Singularities of General Relativity and their Quantum Fate, Banach Mathematical Center, Warsaw, Poland (2018).

*52. University of Amsterdam String Seminar, Amsterdam, Netherlands (2018).

*53. Institute for Theoretical Physics Seminar, Universität Leipzig, Leipzig, Germany (2018).

*54. Gravity at UCEN 2017: Black holes and Cosmology, Universidad Central de Chile, Santiago, Chile (2017).

*55. Astrophysical and Cosmological Relativity Group Seminar, AEI Potsdam, Germany (2017)

*56. Gravity – New Perspectives from Strings and Higher Dimensions Workshop, Benasque, Spain (2017).

57. American Physical Society April Meeting, Washington, DC (2017).

*58. PI-CITA Day, University of Toronto, ON (2016).

59. 21st International Conference on General Relativity and Gravitation, Columbia University, New York, NY (2016).

60. Numerical Relativity and Holography Workshop, Santiago de Compostela, Spain (2016).

*61. Cosmological Frontiers in Fundamental Physics Conference, Perimeter Institute, Waterloo, ON (2016); (video).

62. American Physical Society April Meeting, Salt Lake City, UT (2016).

*63. Quantum Gravity Seminar, Perimeter Institute, Waterloo, ON (2016); (video).

*64. Particle Seminar, Perimeter Institute, Waterloo, ON (2016); (video).

65. Leipzig University Seminar, Leipzig, Germany (2015)

66. University of Cambridge DAMTP Lunch Seminar, Cambridge, UK (2015)

67. 25th Midwest Relativity Meeting, Northwestern University, Evanston, IL (2015)

68. Fields Institute Focus Program on 100 Years of General Relativity, Toronto, ON (2015)

*69. PI-CITA Day, Perimeter Institute, Waterloo ON (2015)

70. American Physical Society April Meeting, Baltimore, MD (2015)

*71. CERN-CKC TH Institute on Numerical Holography, Geneva, Switzerland (2014)

72. 24th Midwest Relativity Meeting, Oakland University, Auburn Hills, MI (2014)

73. 15th Canadian Conference on General Relativity and Relativistic Astrophysics, University of Winnipeg, Winnipeg, MB (2014)

74. Eastern Gravity Meeting, West Virginia University, Morgantown, WV (2014)

75. Compute Ontario Research Day, Perimeter Institute, Waterloo, ON (2014)

*76. Gravity Theory Seminar, University of Maryland, College Park, MD (2014)

77. American Physical Society April Meeting, Savannah, GA (2014)

*78. CITA National Fellows Meeting, University of Toronto, Toronto, ON (2014)

79. 23rd Midwest Relativity Meeting, University of Wisconsin-Milwaukee, Milwaukee, WI (2013)

*80. Astrophysics Lunch Talk, Cornell University, Ithaca, NY (2013)

81. 20th International Conference on General Relativity and Gravitation, Warsaw, Poland (2013)

82. American Physical Society April Meeting, Denver, CO (2013)

*83. CITA National Fellows Meeting, University of Toronto, Toronto, ON (2013)

*84. Gravitation and Cosmology Lunch Seminar, University of Wisconsin-Milwaukee, Milwaukee, WI (2012)

85. 22nd Midwest Relativity Meeting, University of Chicago, Chicago, IL (2012)

86. American Physical Society April Meeting, Atlanta, GA (2012)

87. Strong Gravity Seminar, Perimeter Institute, Waterloo, ON (2012)

88. Cosmology Lunch Talk, Institute for Advanced Study, Princeton, NJ (2012)

89. 21st Midwest Relativity Meeting, University of Illinois at Urbana-Champaign, Urbana-Champaign, IL (2011)

90. Inhomogeneous Cosmologies Workshop, University of Jyväskylä, Jyväskylä, Finland (2011)

91. American Physical Society April Meeting, Anaheim, CA (2011)

92. 20th Midwest Relativity Meeting, University of Guelph, Guelph, ON (2010)

93. 19th International Conference on General Relativity and Gravitation, Mexico City, Mexico (2010)

94. American Physical Society April Meeting, Washington, DC (2010)

95. 19th Midwest Relativity Meeting, University of Michigan, Ann Arbor, MI (2009)

96. 18th Midwest Relativity Meeting, University of Notre Dame, South Bend, IN (2008)

97. 17th Midwest Relativity Meeting, St. Louis University, St. Louis, MO (2007)