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| CONTACT INFORMATION | Center for Cosmology and Particle Physics New York University | <i>e-mail:</i> grant.remmen@nyu.edu <i>web:</i> grantremmen.com |
| POSITIONS | New York University , James Arthur Postdoctoral Fellow University of California, Santa Barbara , Fundamental Physics Fellow Kavli Institute for Theoretical Physics , Postdoctoral Scholar University of California, Berkeley , Miller Research Fellow Harvard University Society of Fellows , Junior Fellow (declined) | 2023–present 2020–2023 2017–2020 2017 |
| EDUCATION | California Institute of Technology Ph.D., Physics M.S., Physics Hertz Fellow and NSF Graduate Research Fellow University of Minnesota, College of Science & Engineering B.S., Physics, <i>summa cum laude</i> , High Distinction, 4.0 GPA B.S., Astrophysics, <i>summa cum laude</i> , High Distinction, 4.0 GPA B.S., Mathematics, <i>summa cum laude</i> , High Distinction, 4.0 GPA | 2012–2017 June 2017 June 2015 2008–2012 May 2012 May 2012 May 2012 |
| SELECTED HONORS & AWARDS | Appointed as Hertz Fellowship Interviewer Sakurai Dissertation Award in Theoretical Particle Physics American Physical Society award citation: “For his contributions to understanding the structure and self-consistency of gravity and effective field theories using ideas from quantum field theory and holography.” Stemple Memorial Prize in Physics , Caltech United States Delegate to the 66th Lindau Nobel Laureate Meeting Hertz Fellow NSF Graduate Research Fellow , National Science Foundation Goldwater Scholar Chambliss Astronomy Achievement Student Award , American Astronomical Society Dean’s Summer International Student Scholarship , University College London National Merit Scholar Byrd Honors Scholar United States Presidential Scholar , White House Commission on Presidential Scholars & U.S. Dept. of Education | 2018–present 2018 2016 2016 2012–2017 2012–2017 2010–2012 2011 2011 2008–2012 2008–2011 2008 |
| PRESS | Phys.org <i>Theoretical Study Shows That Kerr Black Holes Could Amplify New Physics</i> Physics Magazine, APS <i>New Physics Magnified in Spinning Black Holes</i> The Current, UCSB <i>Quantum Zeta Epiphany</i> Physics Magazine, APS <i>A Physical Match for the Riemann Zeta Function</i> Quanta Magazine <i>Black Hole Paradoxes Reveal a Fundamental Link Between Energy and Order</i> | September 2023 August 2023 January 2022 December 2021 May 2020 |

- PUBLICATIONS
62. Clifford Cheung, Aaron Hillman, **Grant N. Remmen** under review, Phys. Rev. Lett.
Uniqueness Criteria for the Virasoro-Shapiro Amplitude arXiv:2408.03362
 61. Clifford Cheung, Aaron Hillman, **Grant N. Remmen** under review, Phys. Rev. Lett.
A Bootstrap Principle for the Spectrum and Scattering of Strings arXiv:2406.02665
 60. Gary T. Horowitz, Maciej Kolanowski, **Grant N. Remmen**, Jorge E. Santos JHEP **5** (2024) 122
Sudden Breakdown of Effective Field Theory Near arXiv:2403.00051
Cool Kerr-Newman Black Holes
 59. Rafael Aoude, Gilly Elor, **Grant N. Remmen**, under review, Phys. Rev. Lett.
Olcyr Sumensari, arXiv:2402.16956
Positivity in Amplitudes from Quantum Entanglement
 58. Nima Arkani-Hamed, Clifford Cheung, Phys. Rev. Lett. **132** (2024) 091601
Carolina Figueiredo, **Grant N. Remmen** arXiv:2312.07652
Multiparticle Factorization and the Rigidity of String Theory
 57. Aidan Chatwin-Davies, Pompey Leung, **Grant N. Remmen** Phys. Rev. D **109** (2024) 046003
Holographic Screen Sequestration arXiv:2312.06750
 56. Xi Dong, **Grant N. Remmen**, Diandian Wang, JHEP **11** (2023) 207
Wayne W. Weng, Chih-Hung Wu arXiv:2308.07952
Holographic Entanglement from the UV to the IR
 55. Clifford Cheung, **Grant N. Remmen** Phys. Rev. D **108** (2023) 086009
Bespoke Dual Resonance arXiv:2308.03833
 54. Gary T. Horowitz, Maciej Kolanowski, Phys. Rev. Lett. **131** (2023) 091402
Grant N. Remmen, Jorge E. Santos Editors' Suggestion
Extremal Kerr Black Holes as Amplifiers of New Physics arXiv:2303.07358
 53. Clifford Cheung, **Grant N. Remmen** Phys. Rev. D **108** (2023) 026011
Stringy Dynamics from an Amplitudes Bootstrap arXiv:2302.12263
 52. Achilleas P. Porfyriadis, **Grant N. Remmen** JHEP **3** (2023) 125
Charged Dilatonic Spacetimes in String Theory arXiv:2301.08256
 51. Clifford Cheung, **Grant N. Remmen** JHEP **1** (2023) 122
Veneziano Variations: How Unique are String Amplitudes? arXiv:2210.12163
 50. Marat Freytsis, Soubhik Kumar, **Grant N. Remmen**, Nicholas L. Rodd JHEP **9** (2023) 41
Multifield Positivity Bounds for Inflation arXiv:2210.10791
 49. Juan Maldacena, **Grant N. Remmen** JHEP **8** (2022) 152
Accumulation-Point Amplitudes in String Theory arXiv:2207.06426
 48. **Grant N. Remmen**, Nicholas L. Rodd JHEP **9** (2022) 30
Spinning Sum Rules for the Dimension-Six SMEFT arXiv:2206.13524
 47. Yu-tin Huang, **Grant N. Remmen** Phys. Rev. D **106** (2022) L021902
UV-Complete Gravity Amplitudes and the Triple Product arXiv:2203.00696
 46. Achilleas P. Porfyriadis, **Grant N. Remmen** JHEP **3** (2022) 107
Large Diffeomorphisms and Accidental Symmetry of the Extremal Horizon arXiv:2112.13853
 45. **Grant N. Remmen** Gen. Rel. Grav. **53** (2021) 101
Exploration of a Singular Fluid Spacetime arXiv:2111.08713
 44. Nima Arkani-Hamed, Yu-tin Huang, Jin-Yu Liu, **Grant N. Remmen** JHEP **3** (2022) 83
Causality, Unitarity, and the Weak Gravity Conjecture arXiv:2109.13937

- PUBLICATIONS, 43. **Grant N. Remmen** Phys. Rev. Lett. **127** (2021) 241602
 CONTINUED *Amplitudes and the Riemann Zeta Function* Editors' Suggestion
 arXiv:2108.07820
42. Achilleas P. Porfyriadis, **Grant N. Remmen** JHEP **10** (2021) 142
Horizon Acoustics of the GHS Black Hole and the Spectrum of AdS_2 arXiv:2106.10282
41. Ning Bao, Aidan Chatwin-Davies, **Grant N. Remmen** JHEP **7** (2021) 113
Entanglement Wedge Cross Section Inequalities from Replicated Geometries arXiv:2106.02640
40. Ning Bao, Jonathan Harper, **Grant N. Remmen** Phys. Rev. D **105** (2022) 026010
Holevo Information of Black Hole Mesostates arXiv:2103.06888
39. **Grant N. Remmen**, Nicholas L. Rodd Phys. Rev. D **105** (2022) 036006
Signs, Spin, SMEFT: Sum Rules at Dimension Six arXiv:2010.04723
38. Rafael Aoude et al. (including **Grant N. Remmen**) Snowmass 2021 Letter of Interest
On-Shell Methods for the SMEFT
37. Ning Bao, Aidan Chatwin-Davies, **Grant N. Remmen** JHEP **9** (2020) 102
*Warping Wormholes with Dust:
 a Metric Construction of the Python's Lunch* arXiv:2006.10762
36. **Grant N. Remmen**, Nicholas L. Rodd Phys. Rev. Lett. **125** (2020) 081601
Flavor Constraints from Unitarity and Analyticity arXiv:2004.02885
35. Clifford Cheung, **Grant N. Remmen** JHEP **5** (2020) 100
Entanglement and the Double Copy arXiv:2002.10470
34. Ning Bao, Aidan Chatwin-Davies, Jason Pollack, **Grant N. Remmen** JHEP **8** (2020) 65
Cosmological Decoherence from Thermal Gravitons arXiv:1911.10207
33. **Grant N. Remmen**, Nicholas L. Rodd JHEP **12** (2019) 32
Consistency of the Standard Model Effective Field Theory arXiv:1908.09845
32. Ning Bao, Aidan Chatwin-Davies, Jason Pollack, **Grant N. Remmen** JHEP **7** (2019) 152
*Towards a Bit Threads Derivation of
 Holographic Entanglement of Purification* arXiv:1905.04317
31. Clifford Cheung, Junyu Liu, **Grant N. Remmen** Phys. Rev. D **100** (2019) 046003
*Entropy Bounds on Effective Field Theory from
 Rotating Dyonic Black Holes* arXiv:1903.09156
30. Raphael Bousso, Yasunori Nomura, **Grant N. Remmen** Phys. Rev. D **99** (2019) 046002
Outer Entropy and Quasilocal Energy arXiv:1812.06987
29. Ning Bao, Aidan Chatwin-Davies, **Grant N. Remmen** JHEP **2** (2019) 110
Entanglement of Purification and Multiboundary Wormhole Geometries arXiv:1811.01983
28. **Grant N. Remmen** Phys. Rev. D **98** (2018) 124008
*New Spacetimes for Rotating Dust in
 $(2+1)$ -Dimensional General Relativity* arXiv:1810.12305
27. Ning Bao, Aidan Chatwin-Davies, Jason Pollack, **Grant N. Remmen** JHEP **11** (2018) 71
*Traversable Wormholes as Quantum Channels:
 Exploring CFT Entanglement Structure and Channel Capacity in Holography* arXiv:1808.05963
26. Yasunori Nomura, **Grant N. Remmen** JHEP **8** (2018) 63
Area Law Unification and the Holographic Event Horizon arXiv:1805.09339
25. Venkatesa Chandrasekaran, **Grant N. Remmen**, JHEP **11** (2018) 15
 Arvin Shahbazi-Moghaddam arXiv:1804.03153
Higher-Point Positivity

- PUBLICATIONS, 24. Clifford Cheung, Junyu Liu, **Grant N. Remmen** JHEP **10** (2018) 4
CONTINUED *Proof of the Weak Gravity Conjecture from Black Hole Entropy* arXiv:1801.08546
23. Ning Bao, Sean M. Carroll, Aidan Chatwin-Davies, Phys. Rev. D **97** (2018) 126014
Jason Pollack, **Grant N. Remmen** arXiv:1712.04955
Branches of the Black Hole Wave Function Need Not Contain Firewalls
22. Chris Akers, Raphael Bousso, Illan F. Halpern, Phys. Rev. D **97** (2018) 024018
Grant N. Remmen arXiv:1711.06689
Boundary of the Future of a Surface
21. Clifford Cheung, **Grant N. Remmen**, Chia-Hsien Shen, Congkao Wen JHEP **4** (2018) 129
Pions as Gluons in Higher Dimensions arXiv:1709.04932
20. Clifford Cheung, **Grant N. Remmen** JHEP **9** (2017) 2
Hidden Simplicity of the Gravity Action arXiv:1705.00626
19. Sean M. Carroll, **Grant N. Remmen** Phys. Rev. D **95** (2017) 123504
A Nonlocal Approach to the Cosmological Constant Problem arXiv:1703.09715
18. Ning Bao, **Grant N. Remmen** EPL **121** (2018) 60007, Editor's Choice
Bulk Connectedness and Boundary Entanglement arXiv:1703.00018
17. Clifford Cheung, **Grant N. Remmen** JHEP **1** (2017) 104
Twofold Symmetries of the Pure Gravity Action arXiv:1612.03927
16. Clifford Cheung, **Grant N. Remmen** Phys. Rev. Lett. **118** (2017) 051601
Positivity of Curvature-Squared Corrections in Gravity arXiv:1608.02942
15. **Grant N. Remmen**, Ning Bao, Jason Pollack JHEP **7** (2016) 48
Entanglement Conservation, $ER=EPR$, and a New Classical Area Theorem for Wormholes arXiv:1604.08217
14. Sean M. Carroll, **Grant N. Remmen** Phys. Rev. D **93** (2016) 124052
What is the Entropy in Entropic Gravity? arXiv:1601.07558
13. Clifford Cheung, **Grant N. Remmen** JHEP **4** (2016) 2
Positive Signs in Massive Gravity arXiv:1601.04068
12. Ning Bao, Jason Pollack, **Grant N. Remmen** JHEP **11** (2015) 126
Wormhole and Entanglement (Non-)Detection in the $ER=EPR$ Correspondence arXiv:1509.05426
11. Brando Bellazzini, Clifford Cheung, **Grant N. Remmen** Phys. Rev. D **93** (2016) 064076
Quantum Gravity Constraints from Unitarity and Analyticity arXiv:1509.00851
10. Ning Bao, Jason Pollack, **Grant N. Remmen** Fortschr. Phys. **63** (2015) 705
Splitting Spacetime and Cloning Qubits: Linking No-Go Theorems across the $ER=EPR$ Duality arXiv:1506.08203
9. Ning Bao, ChunJun Cao, Sean M. Carroll, Aidan Chatwin-Davies, Nicholas Hunter-Jones, Jason Pollack, **Grant N. Remmen** Phys. Rev. D **91** (2015) 125036
Consistency Conditions for an AdS Multiscale Entanglement Renormalization Ansatz Correspondence arXiv:1504.06632
8. Clifford Cheung, **Grant N. Remmen** JHEP **12** (2014) 87
Infrared Consistency and the Weak Gravity Conjecture arXiv:1407.7865
7. **Grant N. Remmen**, Sean M. Carroll Phys. Rev. D **90** (2014) 063517
How Many e-Folds Should We Expect from High-Scale Inflation? arXiv:1405.5538
6. Clifford Cheung, **Grant N. Remmen** Phys. Rev. Lett. **113** (2014) 051601
Naturalness and the Weak Gravity Conjecture arXiv:1402.2287

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| PUBLICATIONS, CONTINUED | 5. Grant N. Remmen , Sean M. Carroll <i>Attractor Solutions in Scalar-Field Cosmology</i> | Phys. Rev. D 88 (2013) 083518 arXiv:1309.2611 |
| | 4. Grant N. Remmen , Kris Davidson, Andrea Mehner <i>Unexpected Ionization Structure in Eta Carinae's "Weigelt Knots"</i> | Astrophys. J. 773 (2013) 27 arXiv:1302.2659 |
| | 3. Grant N. Remmen , Kinwah Wu <i>Complex Orbital Dynamics of a Double Neutron Star System Revolving around a Massive Black Hole</i> | Mon. Not. R. Astron. Soc. 430 (2013) 1940 arXiv:1301.2836 |
| | 2. Grant Remmen , Elwood McCreary <i>Measurement of the Speed and Energy Distribution of Cosmic Ray Muons</i> | JURP 25 (2012) |
| | 1. Grant Remmen <i>A New Assessment of Dark Matter in the Milky Way Galaxy</i> | JURP 23 (2010) |

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| TALKS | Modern Trends in Gravity and Black Holes Workshop University of Crete, Greece | June 2024 |
| | Harvard University Swampland Seminar | May 2024 |
| | Surveying the Landscape Workshop University of Massachusetts Amherst, ACFI | April 2024 |
| | Johns Hopkins University High Energy Physics Theory Seminar | April 2024 |
| | Particle Theory Initiative, What is String Theory? Program Kavli Institute for Theoretical Physics | March 2024 |
| | California Institute of Technology High Energy Theory Seminar | March 2024 |
| | University of Wisconsin–Madison Theory Seminar | February 2024 |
| | University of Pennsylvania High Energy Theory Seminar | January 2024 |
| | Columbia University Theory Seminar | January 2024 |
| | University of Washington Particle Theory Seminar | November 2023 |
| | Crete Center for Theoretical Physics High Energy Seminar (virtual) | November 2023 |
| | New York University, CCPP Brown Bag Seminar | October 2023 |
| | Boston University High Energy Theory Seminar | September 2023 |
| | Swamplandia Workshop Instituto de Física Teórica, UAM-CSIC, and Harvard University, Madrid, Spain | September 2023 |
| | Amplitudes 2023 CERN | August 2023 |
| | Strings 2023 Perimeter Institute for Theoretical Physics | July 2023 |
| | Kavli Institute for Theoretical Physics Generalized Symmetries Reading Group | June 2023 |
| | Quark Confinement 2023 University of Minnesota Simons Collaboration on Confinement and QCD Strings | May 2023 |
| | Kavli Institute for Theoretical Physics Locals' Lunch Talk | April 2023 |
| | CERN Standard Model Electroweak Group Meeting, ATLAS Collaboration (virtual) | April 2023 |
| | McGill University High Energy Theory Group Meeting (virtual) | April 2023 |
| | University of Chicago, Kadanoff Center for Theoretical Physics Particle Theory Seminar | April 2023 |
| | Princeton University High Energy Theory Seminar | March 2023 |
| | California Amplitudes Meeting UC San Diego | March 2023 |
| | University of Michigan, LCTP High Energy Theory Seminar (two parts) | March 2023 |
| | Indiana University High-Energy Physics/Astrophysics Seminar | March 2023 |

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| TALKS, CONTINUED | California Institute of Technology Amplitudes Group Meeting | February 2023 |
| | Bootstrapping Quantum Gravity Program Kavli Institute for Theoretical Physics | February 2023 |
| | Stony Brook University, Simons Center for Geometry and Physics Special Physics Seminar | February 2023 |
| | UC Davis, QMAP Particles/Cosmology Seminar | January 2023 |
| | Brown University High Energy Theory Seminar (virtual) | November 2022 |
| | Number Theory and Physics Workshop Simons Center for Geometry and Physics, Stony Brook University (virtual) | October 2022 |
| | Institute for Advanced Study Amplitudes Group Meeting | October 2022 |
| | Simons Symposium on Amplitudes Meet Cosmology Scotland | May 2022 |
| | UC Santa Barbara High Energy and Gravity Seminar | May 2022 |
| | Possible and Impossible in Effective Field Theory: From the S-Matrix to the Swampland Workshop Institute for Advanced Study | May 2022 |
| | Argonne National Laboratory High Energy Physics Theory Seminar (virtual) | April 2022 |
| | Kavli IPMU, Univ. Tokyo Mathematics - String Theory Seminar (virtual) | April 2022 |
| | California Amplitudes Meeting UC Davis | March 2022 |
| | California Institute of Technology Amplitudes Group Meeting | February 2022 |
| | UC Irvine Particle Physics Seminar | January 2022 |
| | QCD Meets Gravity Workshop UCLA (virtual) | December 2021 |
| | Kavli Institute for Theoretical Physics Locals' Event | November 2021 |
| | UC Santa Barbara High Energy and Gravity Seminar (virtual) | November 2021 |
| | International Centre for Theoretical Physics High Energy, Cosmology, and Astroparticle Physics Seminar (virtual) | November 2021 |
| | Brandeis University Quantum/Gravity Seminar (virtual) | November 2021 |
| | ETH Zürich QFT, Strings and Beyond Seminar (virtual) | October 2021 |
| | Perimeter Institute Quantum Fields and Strings Seminar (virtual) | October 2021 |
| | Hertz Foundation Innovation Hour (virtual) | June 2021 |
| | California Amplitudes Meeting UCLA (virtual) | March 2021 |
| | New York University Physics Department Colloquium (virtual) | March 2021 |
| | New York University Physics Research Seminar (virtual) | February 2021 |
| | University of Florida High Energy Physics Seminar (virtual) | January 2021 |
| | University of Chicago Particle Theory Seminar (virtual) | January 2021 |
| | Korea Institute for Advanced Study High Energy Physics Seminar (virtual) | December 2020 |
| | UC Santa Barbara High Energy and Gravity Seminar (virtual) | November 2020 |
| | Yale University Particle Theory Seminar (virtual) | October 2020 |
| | Brookhaven National Laboratory High Energy Theory Seminar (virtual) | April 2020 |
| | Kavli IPMU, Univ. Tokyo Astronomy-Cosmology-Particle Physics Seminar (virtual) | April 2020 |
| | UC Davis, QMAP Fields, Strings, Gravity Seminar (virtual) | April 2020 |

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| TALKS, | The String Swampland and Quantum Gravity | March 2020 |
| CONTINUED | Constraints on Effective Theories Program Kavli Institute for Theoretical Physics | |
| | Brandeis University High-Energy and Gravitational Theory Chalk Talk | January 2020 |
| | Brandeis University Physics Department Colloquium | January 2020 |
| | University of Michigan, LCTP High Energy Theory Seminar | November 2019 |
| | From Scattering to Expansion Workshop Northwestern University | October 2019 |
| | UC Santa Barbara Particle Physics Phenomenology Seminar | October 2019 |
| | UC Santa Barbara High Energy and Gravity Seminar | October 2019 |
| | Navigating the Swampland Workshop Instituto de Física Teórica, UAM-CSIC, Madrid, Spain | September 2019 |
| | University of Washington AdS/CFT Group Meeting | May 2019 |
| | University of Washington Particle Theory Seminar | May 2019 |
| | University of Minnesota, FTPI High Energy Theory Seminar | April 2019 |
| | Stanford University Stanford Institute for Theoretical Physics Colloquium | April 2019 |
| | UC Berkeley 4D Seminar | April 2019 |
| | California Institute of Technology High Energy Theory Seminar | February 2019 |
| | UC Davis Joint Theory Seminar | January 2019 |
| | Harvard University Black Hole Initiative Colloquium | November 2018 |
| | Cornell University Particle Theory Seminar | October 2018 |
| | Institute for Advanced Study High Energy Theory Seminar | October 2018 |
| | Vistas over the Swampland Workshop Instituto de Física Teórica, UAM-CSIC, Madrid, Spain | September 2018 |
| | King's College London Special Seminar, Theoretical Particle Physics & Cosmology | June 2018 |
| | Gravity, Cosmology & Physics Beyond the Standard Model Conference LPNHE, UPMC, Paris, France | June 2018 |
| | Sakurai Thesis Prize Talk American Physical Society April Meeting, Columbus, OH <i>Quantum Gravity Constraints for Effective Field Theories</i> | April 2018 |
| | University of Illinois, Urbana-Champaign Mathematical and Theoretical Physics Seminar | April 2018 |
| | McGill University High Energy Theory Group Seminar (virtual) | March 2018 |
| | California Institute of Technology High Energy Theory Seminar | February 2018 |
| | California Institute of Technology Quantum Spacetime Meeting | February 2018 |
| | UC Berkeley String Seminar | February 2018 |
| | Stanford University Stanford Institute for Theoretical Physics Seminar | January 2018 |
| | SLAC National Accelerator Laboratory Elementary Particle Physics Theory Seminar | October 2017 |
| | Institute for Advanced Study High Energy Theory Seminar | October 2017 |
| | Massachusetts Institute of Technology String/Gravity Theory Seminar | May 2017 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | April 2017 |

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| TALKS, CONTINUED | California Institute of Technology Theoretical Physics Journal Club | April 2017 |
| | UC Berkeley String Seminar | February 2017 |
| | QCD Meets Gravity Workshop UCLA | December 2016 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | November 2016 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | October 2016 |
| | Johns Hopkins University High Energy Theory/Cosmology Seminar | October 2016 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | May 2016 |
| | New York University High Energy Seminar | April 2016 |
| | Harvard University Particle Theory Seminar | April 2016 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | February 2016 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | November 2015 |
| | California Institute of Technology Theoretical Physics Journal Club | October 2015 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | April 2015 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | February 2015 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | October 2014 |
| | California Institute of Technology Theoretical Physics Journal Club (two parts) | October 2014 |
| | 20 th International Symposium on Particles, Strings and Cosmology (PASCOS 2014) Warsaw, Poland | June 2014 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | May 2014 |
| | California Institute of Technology Theoretical Physics Journal Club | February 2014 |
| | California Institute of Technology Theoretical Physics Research Group Meeting | February 2014 |
| | California Institute of Technology Theoretical Physics Journal Club | September 2013 |
| | Hertz Foundation 50 th Anniversary Symposium Poster Presentation | August 2013 |
| | American Physical Society April Meeting, Denver, CO | April 2013 |
| | Mullard Space Science Laboratory, United Kingdom Theory Group Meeting | August 2011 |
| | Dean's Summer International Student Day of Talks University College London, United Kingdom | August 2011 |
| | 217 th Meeting of the American Astronomical Society, Seattle, WA Poster Presentation | January 2011 |
| SCIENCE OUTREACH | Interacted with various major donors at the request of KITP | 2022–2023 |
| | Outreach talk for KITP administrative staff | May 2021 |
| | Guest lecturer for Caltech's <i>Storytelling for Scientists</i> course | April 2021 |
| | Presented talks on dark matter to physics classes in rural Minnesota | 2011 |
| SEMINAR ORGANIZATION | Organizer KITP Locals' Event Series | 2022–2023 |
| | Organizer UC Santa Barbara High Energy and Gravity Seminar Series | 2020–2021 |
| | Organizer UC Berkeley HEP-QIS Seminar Series | 2018–2019 |
| | Organizer UC Berkeley String Seminar Series | 2017–2019 |

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| CONFERENCE | Conference Co-Chair Kavli Institute for Theoretical Physics (virtual) | October 2020 |
| ORGANIZATION | <i>UV Meets the IR: Effective Field Theory Bounds from QFT to String Theory</i> | |
| TEACHING | UC Santa Barbara, Department of Physics | Fall 2020 |
| EXPERIENCE | Instructor and organizer of graduate short course <i>Impossible Physics: Constraining the Laws of Nature, from Scattering Amplitudes to Black Holes</i> | |
| | UC Berkeley, Department of Physics | April 2018 |
| | Guest lecturer in Prof. Petr Hořava's Quantum Field Theory course | |
| | University of Minnesota, Institute of Technology, Department of Astronomy | Fall 2009 |
| | Teaching assistant to Prof. Robert Gehr, Department Chair | |
| THESES | Ph.D., Physics California Institute of Technology | Defended May 2017 |
| | Grant Newton Remmen <i>Defining Gravity: Effective Field Theory, Entanglement, and Cosmology</i> Thesis advisors: Clifford Cheung and Sean M. Carroll, California Institute of Technology | |
| | B.S., Mathematics , <i>summa cum laude</i> University of Minnesota | Defended May 2012 |
| | Grant N. Remmen <i>Dynamics of a Rigid Spinning Ring in the Schwarzschild Metric: A Solution to a Gravitational Problem in Mathematical Physics</i> Thesis advisor: Willard Miller, School of Mathematics, University of Minnesota Research supervised by Kinwah Wu, Head of Theory, Mullard Space Science Laboratory, University College London. | |
| | B.S., Astrophysics , <i>summa cum laude</i> University of Minnesota | Defended December 2011 |
| | Grant N. Remmen Hubble Space Telescope <i>Subpixel Modeling of Anomalous High-Excitation Emission Lines in the Ejecta of Eta Carinae</i> Thesis advisor: Kris Davidson, MN Institute for Astrophysics, University of Minnesota | |
| | B.S., Physics , <i>summa cum laude</i> University of Minnesota | Defended April 2010 |
| | Grant Remmen <i>Distortion of Black Holes caused by Motion relative to the Cosmic Microwave Background</i> Thesis advisor: Robert Gehr, Director, MN Institute for Astrophysics, University of Minnesota | |
| UNDERGRAD. | Hagstrum Award in Physics | 2012 |
| HONORS & | Outstanding Graduate in Mathematics | 2012 |
| AWARDS, | Franklin Scholarship in Physics | 2011–2012 |
| UNIVERSITY OF | Lando Scholarship in Mathematics | 2011–2012 |
| MINNESOTA | Richards Scholarship in Mathematics | 2011–2012 |
| | Nier Scholarship in Physics | 2010–2011 |
| | Thorp Scholarship in Mathematics | 2010–2011 |
| | Undergraduate Research Scholarship | 2010 |
| | Basford Award in Physics | 2009–2010 |
| | Institute of Technology Alumni Award | 2009–2010 |
| | Institute of Technology Honors Undergraduate Research Scholarship | 2009 |
| | Maroon & Gold Leadership Award | 2008–2012 |
| | 3M/Alumni Award | 2008–2012 |
| | Bentson Scholar | 2008–2012 |
| | Dean's List , College of Science & Engineering/Institute of Technology | 2008–2012 |
| | McGraw Hill Student Achievement Recognition , | 2008 |
| | Meritorious Work in General Chemistry | |

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| SCIENTIFIC & HONORARY AFFILIATIONS | American Physical Society American Astronomical Society International Society on General Relativity and Gravitation New York Academy of Sciences Golden Key International Honour Society Sigma Pi Sigma, National Physics Honor Society | |
| JOURNAL REFEREE | Physical Review Letters Physical Review D Journal of High Energy Physics Nuclear Physics B Scientific Reports - Nature Communications in Mathematical Physics | |
| LEADERSHIP, SERVICE, & CULTURAL ACTIVITIES | Co-author/-composer of a two-act musical, <i>From the Earth to the Moon</i> , based on the Verne novel Caltech production of <i>From the Earth to the Moon</i> Mainstage production, Assistant to the Director Public reading (virtual), Music Director California Institute of Technology Graduate Student Council Board of Directors Member, Academics Committee and Director at Large Member, Academics Committee and Physics Representative California Institute of Technology Faculty Library Committee, Student Representative Co-author/-composer of a two-act musical, <i>Boldly Go!</i> , a musical parody based upon <i>Star Trek</i> Caltech production of <i>Boldly Go!</i> Mainstage production, Music Director Public reading, Music Director University Study Abroad May Seminar: <i>Great Minds of the Renaissance</i> , Italy History of Renaissance scientists (Galileo, da Vinci, etc.) and societal context University of Minnesota Gospel Choir Detroit Lakes Community Summer Band Program University of Minnesota Honors Student Association University of Minnesota volunteer caller for Admissions Office U.S. Department of Education volunteer Assembled hygiene kits for Washington, D.C. homeless | 2022 2021 2021 2013–2017 2016–2017 2013–2016 2013–2017 2016 2015 2011 2008–2010 2008–2010 2008–2012 2008–2009 2008 |
| TEST SCORES | GRE Physics—Perfect Score: 990/990 GRE General—Quantitative: 800/800, Verbal: 720/800, Analytical Writing: 5.5/6.0 SAT—Perfect Score: 2400/2400 SAT II—Perfect Scores: Math Level II 800/800 and Biology–Molecular 800/800 | 2011 2011 2008 2008 |