

## **Mohammad Hafezi**

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## **PERSONAL INFORMATION**

### **Educational Background**

- 2003-2009, Ph.D., Physics, Harvard University
- 2000-2003, Diplome d'ingenieur, Physics-Math, Ecole Polytechnique
- 1998-2002, B.Sc., Physics (transferred), Sharif University

### **Academic Appointments at UMD**

- 2021- , Minta Martin Professor of Electrical and Computer Engineering and Physics (Joint appointment)
- 2021 - , Affiliate Fellow of Joint Center for Quantum Information and Computer Science
- 2017-2021, Associate Professor of Electrical and Computer Engineering and Physics Departments (Joint appointment)
- 2014-2017, Assistant Professor, Electrical and Computer Engineering Department
- 2014 - , Affiliate of Institute for Research and Electronics and Applied Physics
- 2014 - , Fellow of Joint Quantum Institute
- 2012-2014, Senior Research Associate, Joint Quantum Institute
- 2009-2012, Research Associate, Joint Quantum Institute

### **Other Employment**

- Visiting Scholar, Pauli Center for Theoretical Studies, ETH Zurich Spring 2022
- Visiting scientist, Institute for Quantum Optics and Quantum Information, Innsbruck, Austrian Academy of Sciences, Fall 2012
- Intern, Institut d'optique théorique et appliquée, Orsay, Summer 2002
- Intern, Laboratoire de Physique Théorique (High Energy), Orsay, Summer 2001

### **Research Fellowships, Prizes and Awards**

- 2021, Fellow of American Physical Society
- 2020, Simons Foundation Investigator Award
- 2020, Blavatnik National Award Finalist
- 2020, Google Noisy Intermediate-Scale Quantum (NISQ) award
- 2019, Blavatnik National Award Finalist
- 2015, Young Investigator Program, Office of Naval Research
- 2015, Sloan Research Fellowship, Alfred P. Sloan Foundation

- 2003, Certificate of distinction for outstanding senior project, Ecole Polytechnique
- 2003, Purcell Fellowship, Harvard University
- 2000, Fellowship of the Foundation of the Ecole Polytechnique
- 1998, Silver Medal, 29th International Physics Olympiad, Iceland
- 1997, Gold Medal, National Physics Olympiad, Iran

### **Teaching Awards**

- 2017, George Corcoran Memorial Teaching Award for faculty
- 2005, Certificate of distinction for excellence in teaching, Harvard University
- 2004, Certificate of distinction for excellence in teaching, Harvard University

### **Refereed Journals (published and submitted)**

1. Two-dimensional excitons from twisted light and the fate of the photon's orbital angular momentum, T. Graß, U. Bhattacharya, J. Sell, and M. Hafezi, arXiv:2201.13058 (2022)
2. Chiral transport of hot carriers in graphene in the quantum Hall regime, B. Cao, T. Grass, O. Gazzano, K. Ashokbhai Patel, J. Hu, M. Müller, T. Huber, L. Anzi, K. Watanabe, T. Taniguchi, et al. , arXiv preprint arXiv:2110.01079 (2021)
3. Compressed Sensing Measurement of Long-Range Correlated Noise, A. Seif, M. Hafezi, and Y-K. Liu , arXiv preprint arXiv:2105.12589 (2021)
4. Cross-Platform Comparison of Arbitrary Quantum Computations, D. Zhu, Z-P. Cian, C. Noel, A. Risinger, D. Biswas, L. Egan, Y. Zhu, A. M. Green, A. Maksymov, ii, Y. Nam, et al. , arXiv preprint arXiv:2107.11387 (2021)
5. Decoding conformal field theories: from supervised to unsupervised learning, E-J. Kuo, A. Seif, R. Lundgren, S. Whitsitt, and M. Hafezi, arXiv preprint arXiv:2106.13485 (2021)
6. Discovering hydrodynamic equations of many-body quantum systems, Y. Kharkov, O. Shtanko, A. Seif, P. Bienias, M. Van Regemortel, M. Hafezi, and A. V. Gorshkov, arXiv preprint arXiv:2111.02385 (2021)
7. Engineering an Effective Three-spin Hamiltonian in Trapped-ion Systems for Applications in Quantum Simulation, B. Andrade, Z. Davoudi, T. Graß, M. Hafezi, G. Pagano, and A. Seif , arXiv preprint arXiv:2108.01022 (2021)
8. Entanglement Entropy Scaling Transition under Competing Monitoring Protocols, M. Van Regemortel, Z-P. Cian, A. Seif, H. Dehghani, and M. Hafezi , Physical Review Letters, 126, 123604 (2021)
9. Extraction of many-body Chern number from a single wave function, H. Dehghani, Z-P. Cian, M. Hafezi, and M. Barkeshli , Phys. Rev. B, 103, 075102 (2021)
10. Floquet vortex states induced by light carrying the orbital angular momentum, H. Kim, H. Dehghani, I. Ahmadabadi, I. Martin, and M. Hafezi , arXiv preprint arXiv:2106.08515 (2021)
11. Light-matter interactions in synthetic magnetic fields: Landau-photon polaritons, D. De Bernardis, Z-P. Cian, I. Carusotto, M. Hafezi, and P. Rabl , Phys. Rev. Lett. 126, 103603 (2021)

12. Machine learning the thermodynamic arrow of time, A. Seif, M. Hafezi, and C. Jarzynski , Nature Physics, 17, 105 (2021)
13. Many-body Chern number from statistical correlations of randomized measurements, Z-P. Cian, H. Dehghani, A. Elben, B. Vermersch, G. Zhu, M. Barkeshli, P. Zoller, and M. Hafezi , Phys. Rev. Lett., 126, 050501 (2021)
14. Meta Hamiltonian Learning, P. Bienias, A. Seif, and M. Hafezi , arXiv preprint arXiv:2104.04453 (2021)
15. Mode Delocalization in Disordered Photonic Chern Insulator, U. Chattopadhyay, S. Mittal, M. Hafezi, and YD. Chong , Phys. Rev. B , 103, 214201 (2021)
16. Optical flux pump in the quantum Hall regime, B. Cao, T. Grass, G. Solomon, and M. Hafezi , Phys. Rev. B, 103, L241301 (2021)
17. Optically induced topological superconductivity via Floquet interaction engineering, H. Dehghani, M. Hafezi, and P. Ghaemi, PHYSICAL REVIEW RESEARCH, 3, 023039 (2021)
18. Topological Frequency Combs and Nested Temporal Solitons, S. Mittal, G. Moille, K. Srinivasan, Y. K. Chembo, and M. Hafezi , arXiv preprint arXiv:2101.02229 (2021)
19. Tunable quantum interference using a topological source of indistinguishable photon pairs, V. Vikram Orre, S. Mittal, E. A. Goldschmidt, and M. Hafezi , Nature Photonics (2021)
20. Spin-Mediated Mott Excitons, T-S. Huang, CL. Baldwin, M. Hafezi, and V. Galitski , arXiv preprint arXiv:2004.10825 (2020)
21. Engineering Quantum Hall Phases in Synthetic Bilayer Graphene System, Z-P. Cian, T. Grass, A. Vaezi, Z. Liu, and M. Hafezi , Phys. Rev. B 102, 085430 (2020)
22. Towards analog quantum simulations of lattice gauge theories with trapped ions, Z. Davoudi, M. Hafezi, C. Monroe, G. Pagano, A. Seif, and A. Shaw , Phys. Rev. Research, 2, 023015 (2020)
23. Z. M. Raines, A. A. Allocca, M. Hafezi, and V. M. Galitski “Cavity Higgs-Polaritons”, arXiv preprint Phys. Rev. Research , 2, 013143 (2020)
24. Guiding and confining of light in a two-dimensional synthetic space using electric fields, H. Chalabi, S. Barik, S. Mittal, T. E. Murphy, M. Hafezi, and E. Waks , Optica, 7, 506–513 (2020)
25. J. B. Curtis, Z. M. Raines, A. A. Allocca, M. Hafezi, and V. M. Galitski “Cavity Quantum Eliashberg Enhancement of Superconductivity” Phys. Rev. Lett., 122 , 167002 (2019)
26. S. Barik, A. Karasahin, S. Mittal, E. Waks, and M. Hafezi “Chiral quantum optics using a topological resonator” Phys. Rev. B, 101, 205303 (2020)
27. V. Vikram Orre, E. A. Goldschmidt, V. Tamma, M. Hafezi, and S. Mittal “Interference of multiple temporally distinguishable photons using frequency-resolved detection” Phys. Rev. Lett. 123, 123603 (2019)
28. A. Seif, M. Hafezi, and C. Jarzynski “Machine learning the thermodynamic arrow of time” Nature Physics 17, 105 (2021)
29. A. Elben, J. Yu, G. Zhu, M. Hafezi, F. Pollmann, P. Zoller, and Benoit. Vermersch “Many-body topological invariants from randomized measurements, Science Advance, 6, 3666 (2020)
30. S. Mittal, V. Orre, G. Zhu, M. A. Gorlach, A. Poddubny, and M. Hafezi, “Photonic quadrupole topological phases” Nature Photonics 13, 692 (2019)

31. O. Gazzano, B. Cao, J. Hu, T. Huber, T. Grass, M. Gullans, D. Newell, M. Hafezi, and G. S. Solomon “Observation of chiral photocurrent transport in the quantum Hall regime in graphene”, arXiv preprint arXiv:1903.01487 (2019)
32. Z-P. Ciani, G. Zhu, S-K. Chu, A. Seif, W. DeGottardi, L. Jiang, and M. Hafezi “Photon pair condensation by engineered dissipation” Phys. Rev. Lett. 123, 063602 (2019)
33. S. Mittal, V. Vikram Orre, D. Leykam, YD. Chong, and M. Hafezi “Photonic Anomalous Quantum Hall Effect” Phys. Rev. Lett. 123, 043201 (2019)
34. H. Chalabi, S. Barik, S. Mittal, T. E. Murphy, M. Hafezi, and E. Waks “A synthetic gauge field for two-dimensional time-multiplexed quantum random walks” Phys. Rev. Lett. , 123, 150503 (2019)
35. W. DeGottardi, M. J. Gullans, S. Hedge, S. Vishveshwara, and M. Hafezi, “Thermal radiation as a probe of one-dimensional electron liquids” Phys. Rev. B 99, 235124 (2019)
36. T. Graß, M. Gullans, P. Bienias, G. Zhu, A. Ghazaryan, P. Ghaemi, and M. Hafezi, “Optical control over bulk excitations in fractional quantum Hall systems” Physical Review B , 98, 155124 (2018)
37. Machine learning assisted readout of trapped-ion qubits, A. Seif, K. A. Landsman, N. M. Linke, C. Figgatt, C. Monroe, and M. Hafezi, J. Phys. B: At. Mol. Opt. Phys. 51 174006 (2018)
38. H. Kim, G. Zhu, J. V. Porto, and M. Hafezi “Optical Lattice with Torus Topology”, Phys. Rev. Lett. 121, 133002 (2018)
39. G. Zhu, M. Hafezi, and M. Barkeshli “Quantum Origami: Applying Transversal Gates and Measuring Topological Order” Phys. Rev. Research, 2, 013285 (2020)
40. A. Seif, W. DeGottardi, K. Esfarjani, and M. Hafezi “Thermal management and non-reciprocal control of phonon flow via optomechanics” Nature Communication 9, 1207 (2018)
41. S. Mittal, E. Goldschmidt, and M. Hafezi “A topological source of quantum light” Nature, 561, 502–506 (2018).
42. Guanyu Zhu, Yigit Subasi, James D. Whitfield, Mohammad Hafezi “Hardware-efficient fermionic simulation with a cavity-QED system” npj Quantum Information, 4 (2018)
43. D. Leykam, S. Mittal, M. Hafezi, and Y. D. Chong “Reconfigurable topological phases in next-nearest-neighbor coupled resonator lattices”, Phys. Rev. Lett. 121, 023901 (2018)
44. A topological quantum optics interface, S. Barik, A. Karasahin, C. Flower, T. Cai, H. Miyake, W. DeGottardi, M. Hafezi, and E. Waks , Science, 359, 666-668 (2018)
45. Wade DeGottardi, Mohammad Hafezi “Stability of Fractional Quantum Hall States in Disordered Photonic Systems” New Journal of Physics , 19 (2017)
46. A. Ghazaryan, M. Gullans, P. Ghaemi, and M. Hafezi, “Light-induced fractional quantum Hall phases in graphene”, Physical Review Letters, 119, 247403 (2017)
47. M. Gullans, J. Taylor, A. Imamoglu, P. Ghaemi, M. Hafezi “High-Order Multipole Radiation from Quantum Hall States in Dirac Materials” Phys. Rev. B 95, 235439 (2017)
48. S. Mittal, V. Vikram Orre, A. Restelli, R. Salem, E. A. Goldschmidt, and M. Hafezi “Temporal and spectral manipulations of correlated photons using a time-lens,” Phys. Rev. A, 96, 043807 (2017)

49. M. Foss-Feig, P. Niroula, J. T. Young, M. Hafezi, A. V. Gorshkov, R. M. Wilson, and M. F. Maghrebi “Emergent equilibrium in many-body optical bistability” *Phys. Rev. A*, 95, 043826 (2017)
50. B. Cao, M. Khan, M. Hafezi, “Two coupled nonlinear cavities in a driven-dissipative environment” *Phys. Rev. A* 94, 063805 (2016).
51. G. Zhu, M. Hafezi, T. Grover, “Measurement of many-body chaos using a quantum clock” *Phys. Rev. A* 94, 062329 (2016).
52. H. Pichler, G. Zhu, A. Seif, P. Zoller, M. Hafezi, “A Measurement Protocol for the Entanglement Spectrum of Cold Atoms” *Phys. Rev. X* 6, 041033 (2016).
53. S. Barik, H. Miyake, W. DeGottardi, E. Waks, M. Hafezi, “Two-Dimensionally Confined Topological Edge States in Photonic Crystals” *New Journal of Physics* 18 (2016).
54. Ryan M. Wilson, Khan W. Mahmud, Anzi Hu, Alexey V. Gorshkov, Mohammad Hafezi, Michael Foss-Feig, “Collective phases of strongly interacting cavity photons” *Phys. Rev. A* 94, 033801 (2016).
55. S. Mittal, V. Vikram Orre, and M. Hafezi, “Topologically robust transport of entangled photons in a 2D photonic system”, *Optics Express* 24, 15631-15641 (2016).
56. B. Cao, K. W. Mahmud, and M. Hafezi “Two coupled nonlinear cavities in a driven-dissipative environment”, *Phys. Rev. A* , 94, 063805 (2016).
57. S. Mittal, S. Ganeshan, J. Fan, A. Vaezi, and M. Hafezi, “ Measurement of topological invariants in a 2D photonic system”, *Nature Photonics* 10, 180 (2016).
58. A. V. Poshakinskiy, A. N. Poddubny, M. Hafezi “Phase spectroscopy of topological invariants in photonic crystals” *Phys. Rev. A* 91, 043830 (2015)
59. M. F. Maghrebi, N. Y. Yao, M. Hafezi, T. Pohl, O. Firstenberg, and A. V. Gorshkov, “Fractional Quantum Hall States of Rydberg Polaritons”, *Phys. Rev. A*, 91, 033838 (2015).
60. D. Marcos, P. Widmer, E. Rico, M. Hafezi, P. Rabl, U.-J. Wiese, P. Zoller, “Two-dimensional lattice gauge theories with superconducting quantum circuits”, *Annals of Physics* 351, 634 (2014).
61. F. Grusdt, F. Letscher, M. Hafezi, and M. Fleischhauer, “Topological growing of Laughlin states in synthetic gauge fields”, *Phys. Rev. Lett.* 113, 155301 (2014).
62. M. Hafezi, P. Adhikari, J. M. Taylor, “Chemical potential for light by parametric coupling”, *Phys. Rev. B* 92, 174305 (2015).
63. E. Kapit, M. Hafezi, S. Simon, “Induced self-stabilization in fractional quantum Hall states of light”, *Phys. Rev. X*, 4, 031039 (2014).
64. S. Mittal, J. Fan, S. Faez, A. Migdall, J. M. Taylor, M. Hafezi, “Topologically Robust Transport of Photons in a Synthetic Gauge Field” *Phys. Rev. Lett.* 113, 087403 (2014) Highlighted in *Physics Viewpoint* Khanikaev and Genack 7, 87 (2014).
65. M. Hafezi, “Measuring topological invariants in photonic systems”, *Phys. Rev. Lett.* 112, 210405 (2014).

66. H. Xu, M. Hafezi, J. Fan, J. M. Taylor, G. F. Strouse, Z. Ahmed, “ Ultra-Sensitive Chip-Based Photonic Temperature Sensor Using Ring Resonator Structures Optics Express 22, 3098 (2014).
67. M. Hafezi, P. Adkikhari, J. Taylor, “Engineering three-body interaction and Pfaffian states in circuit QED systems”, Phys. Rev. B 90, 060503 (R) (2014).
68. K. Stannigel, P. Hauke, D. Marcos, M. Hafezi, S. Diehl, M. Dalmonte, P. Zoller, “Constrained dynamics via the Zeno effect in quantum simulation”, Phys. Rev. Lett. 112, 120406 (2014).
69. M. Hafezi, M. Lukin, J. Taylor, “Non-equilibrium fractional quantum Hall state of light ” New J. Phys. 15 063001 (2013). Featured in Highlights of New Journal of Physics 2013.
70. M. Hafezi, S. Mittal, J. Fan, A. Migdall, J. Taylor, “Imaging topological edge states in silicon photonics”, Nature Photonics 7, 1001 (2013). In News and Views by A. Khanikaev, Nature Photonics 7, 941–943 (2013), Research Highlight by D. Gevaux Nature Physics 9, 753 (2013).
71. P. Adhikari, M. Hafezi, J. M. Taylor, “Nonlinear Optics Quantum Computing with Circuit QED”, Phys. Rev. Lett. 110, 060503 (2013).
72. Peyronel, M. Bajcsy, S. Hofferberth, V. Balic, M. Hafezi, Q. Liang, A. Zibrov, V. Vuletic, and M. D. Lukin, “Switching and counting with atomic vapors in photonic-crystal fibers”, IEEE Journal of Selected Topics in Quantum Electronics 18, 1747 (2012).
73. M. Hafezi, Z. Kim, S. L. Rolston, L. A. Orozco, B. L. Lev., J. M. Taylor, “ An atomic interface between microwave and optical photons”, Phys. Rev. A Rapid 85, 020302 (2012).
74. M. Hafezi, P. Rabl, “ Optomechanically induced non-reciprocity in microring resonators”, Optics Express 20, 7684 (2012). News coverage includes: Science Daily, Photonics
75. M. Hafezi, E. Demler, M. D. Lukin, Jacob Taylor, “Robust optical delay lines via topological protection”, Nature Physics 7, 907 (2011). News coverage includes: Science Daily, Photonics, Material 360 (Materials Research Society), NIST Tech Beat, Nanowerk, RedOrbit, PhysOrg.com, Physics News
76. J. E. Hoffman, J. A. Grover, Z. Kim, A. K. Wood, J. R. Anderson, A. J. Dragt, M. Hafezi, C. J. Lobb, L. A. Orozco, S. L. Rolston, J. M. Taylor, C. P. Vlahacos, F. C. Wellstood, “Atoms Talking to SQUIDs”, Rev. Mex. de S 57, 1 (2010), also at arXiv:1108.4153.
77. D. Chang, A. Safavi-Naeini, M. Hafezi, O. Painter, “Slowing and stopping light using an optomechanical crystal array”, New J. Phys. 13, 023033 (2011). Also appears in the Virtual Journal of Quantum Information 11, 3 (2011).
78. M. Hafezi, D. Chang, V. Gritsev, E. Demler, M. Lukin, “ Quantum transport of strongly interacting photons in a 1D nonlinear waveguide”, Phys. Rev. A 85, 013822 (2012).
79. Z. Kim, C. Vlahacos, J. Hoffman, J. Grover, K. Voigt, B. Cooper, C. Ballard, B. Palmer, M. Hafezi, J. Taylor, J. Anderson, A. Dragt, C. Lobb, L. Orozco, S. Rolston, and F. Wellstood, “Thin-film Superconducting Resonator Tunable to the Ground-state Hyperfine Splitting of  $^{87}\text{Rb}$ ”, AIP Advance 1, 042107 (2011).
80. M. Hafezi, Darrick Chang, Vladimir Gritsev, E. Demler, M. D. Lukin, “Photonic quantum transport in a nonlinear optical fiber”, Euro Phys. Lett. 94, 54006 (2011).
81. M. Bajcsy, S. Hofferberth, V. Balic, T. Peyronel, M. Hafezi, A. S. Zibrov, V. Vuletic, M. Lukin, “Efficient all-optical switching using slow light within a hollow fiber”, Phys. Rev. Lett. 102,

205501(2009), Featured in Physics 2, 41 (2009) and Physics World.

82. M. Vengalattore, M. Hafezi, M. D. Lukin, M. Prentiss, “Optical bistability at low light level due to collective atomic recoil”, Phys. Rev. Lett. 101, 063901 (2008).
83. Liang Jiang, Gavin Brennen, Alexey Gorshkov, Klemens Hammerer, Mohammad Hafezi, Eugene Demler, Mikhail Lukin, Peter Zoller, “Anyonic interferometry and protected memories in atomic spin lattices”, Nature Physics 4, 482-488, (2008). Also appears in the Virtual Journal of Nanoscale Science & Technology 7, 24 (2008) and in the Virtual Journal of Quantum Information 8, 6 (2008).
84. M. Hafezi, Anders S. Sorensen, Mikhail D. Lukin, Eugene Demler, “Characterization of topological states on a lattice with Chern number”, Euro Phys. Lett. 81, 10005 (2008).
85. Mohammad Hafezi, Anders S. Sorensen, Eugene Demler, Mikhail D. Lukin, “Fractional Quantum Hall Effect in Optical Lattices”, Phys. Rev. A 76, 023613 (2007), mentioned in Physics 4,46 (2011).
86. Jérôme Wenger, Mohammad Hafezi, Frédéric Grosshans, Rosa Tualle-Brouri, Philippe Grangier, “Maximal Violation of Bell Inequalities using Continuous Variables Measurements”, Phys. Rev. A 67, 012105 (2003). Also appears in the Virtual Journal of Nanoscale Science & Technology 7, 4 (2003) and in the Virtual Journal of Quantum Information 3, 2 (2003).

## **Reviews**

87. T. Ozawa, H. M. Price, A. Amo, N. Goldman, M. Hafezi, L. Lu, M. Rechtsman, D. Schuster, J. Simon, O. Zilberberg, et al. “Topological Photonics” Rev. Mod. Phys. 91, 015006 (2019)
88. S. Barik, and M. Hafezi, “Robust and compact waveguides” Nature Nanotechnology, 14, 8 (2019)
89. S. Mittal, W. DeGottardi, and M. Hafezi “Topological Photonic Systems”, Optics and Photonics News OSA, 29 (5), 36-43 (2018)
90. A. Seif, and M. Hafezi, “Broadband optomechanical non-reciprocity” Nature Photonics News & Views, 12, 60–61 (2018).
91. S. Mittal, and M. Hafezi, “Round the bend with microwaves”, Nature 522, 292 (2015).
92. M. Hafezi and J. Taylor, “Topological physics with light”, Physics Today 67, 68 (2014).
93. M. Hafezi, “Synthetic gauge fields with photon”, Int. J. Mod. Phys. B 28, 1441002 (2014).
94. M. Hafezi, “Microwave Photons Move Out of Equilibrium”, Physics APS, 7, 92 (2014).

## **Published Conference Proceedings**

1. Topological Physics in Photonic Systems, M. Hafezi, Physics of Quantum Electronics, 2016
2. Measuring topological invariants in photonic system, S. Mittal, S. Ganeshan, A Vaezi, M. Hafezi, META 2015 Conference, New York, 2015
3. Topologically Robust Transport of Photons in a Synthetic Gauge Field, S. Mittal, J. Fan, S. Faez, A. Migdall, J. M. Taylor, and M. Hafezi, Physics of Quantum Electronics, 2015

4. Measuring topological invariants in photonic systems, S. Mittal, S. Ganeshan, J. Fan, A. Vaezi and M. Hafezi, 9th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics - Metamaterials, Oxford, United Kingdom, 2015
5. Topological edge states in silicon photonics, S. Mittal, J. Fan, A. Migdall, J. Taylor, M. Hafezi, META 2014 Conference, Singapore, 2014
6. Topological Edge States in Silicon Photonics, S. Mittal, J. Fan, A. Migdall, J. M. Taylor, M. Hafezi, CLEO, 2014
7. Photonic temperature sensor based on microring resonators, CLEO, 2013
8. Few photon switching with slow light in hollow fiber, M. Bajcsy, S. Hofferberth, V. Balic, T. Peyronel, M. Hafezi, A. S. Zibrov, V. Vuletic, M. D. Lukin, Proc. SPIE 7226, Advances in Slow and Fast Light II, 2009

### **Selected Conferences, Workshops and Talks**

1. Light-Matter Interactions in Low Dimensional and Topological Photonic Materials  
Workshop India “Topological photonics recent advances in quantum and nonlinear regime”  
(Feb 2022)
2. Caltech, Condensed Matter Seminar “Quantum optics meets correlated electrons” (Nov 2021)
3. NYU Physics Colloquium, “Topological physics: from photons to electrons” (Nov 2021)
4. Boston College, Physics Colloquium “Topological physics: from photons to electrons” (Nov 2021)
5. University of Glasgow, Center for Quantum Technology “Characterizing, measuring, and comparing many-body states using statistical correlations of randomized measurements”  
(Oct 22, 2021)
6. Penn Materials Science and Engineering, “Topological photonics recent advances in quantum and nonlinear regime” (Oct 21, 2021)
7. Upenn Condensed and Living Matter Seminar, “Quantum optics meets correlated electrons”  
(Oct 20, 2021)
8. Metamaterials NYC 2021 “Recent advances in topological photonics” (Sep 2021)
9. Berkeley CICQ QLCI Colloquium “Quantum optics meets correlated electrons” (Sep 22, 2021)
10. Oklahoma University, Physics Colloquium “Topological Physics from photons to electrons”  
(Sep 3, 2021)
11. FET-Proactive EU project TOCHA, SUMMER SCHOOL TOPOLOGICAL BOSONICS AND ELECTRONICS “Introduction to topological photonics” (Sep 1st, 2021)
12. Summer School on Surface Plasmons, Paris-Saclay “Introduction to topological photonics”  
(July 2021)
13. GSELOP 2021 “Topological Frequency Combs and Nested Temporal Solitons” (Aug 23,



2021)

14. Coherence and Entanglement in Quantum Systems PSI Summer Camp “Floquet engineering from single-particle to effective interaction control” (Aug 18, 2021)
15. Technical University of Munich, CMT seminar “Characterizing and comparing many-body states using statistical correlations of randomized measurements”(July 15, 2021)
16. KITP Topology AMO 2021 “Quantum optics of correlated electron systems”( July 13, 2021)
17. IBM-Qiskit Quantum Information Science Seminar Series “Characterizing, measuring, and comparing many-body states using statistical correlations of randomized measurements” (July 2021)
18. George Mason University ,Physics Colloquium “Topological photonics” (Feb 19, 2021)
19. Benasque Workshop “Interplay between electronic and photonic topology” (June 2021)
20. University of Rhode Island, Physics Colloquium (March 2021)
21. Colorado State University, Fort Collins, Physics Colloquium (March 2021)
22. Illinois Quantum Information Science and Technology Center, “topological physics from photons to electrons” (Feb 2021)
23. Rice University, Distinguished Speaker Series, “Topological photonics” (Dec 2020)
24. Birmingham University, Physics Colloquium, “Topological photonics” (Nov 2020)
25. ICTP Condensed Matter and Statistical Physics seminar of ICTP, “Quantum optics meets correlated electrons” (Nov 2020)
26. PLMCN conference Clermont Ferrand “Quantum optics of correlated matter” (Oct 2020)
27. Simon Fraser, Physics Colloquium, “Topological photonics” (Oct 2020)
28. DFG (German Research Foundation) FOR2414 consortium, meeting, “Many -body invariants from statistical correlations of randomized measurements” (Aug 2020)
29. Long range colloquium “Quantum optics meets correlated electrons” (Aug, 2020) (online)
30. Virtual Condensed Matter Seminar MPI-PKS Dresden “Many -body invariants from statistical correlations of randomized measurements” (Aug 2020)
31. Harvard Quantum Huddle seminar, “Quantum optics toolbox for topological and correlated states of electrons” (Jun 2020) (online)
32. NISQ workshop on many-body physics (Dresden-Google), “Many-body invariants from statistical correlations of randomized measurements” (Jun 2020) (online)
33. Stanford Q-Farm seminar, “Many-body invariants from statistical correlations of randomized measurements” (Jun 2020) (online)
34. CLEO invited talk, “Recent advances in quantum topological photonics” (May 2020) (online)
35. Air Force Research Laboratory “Recent progress in quantum topological photonics” , Dayton (Feb 2020)
36. Advanced Science Research Center Seminar, “Topological physics: from photons to electrons” CUNY (Feb 2020)

37. 3rd International Workshop on Quantum and Topological Nanophotonics “Topological interplay between photons and electrons” NTU Singapore Dec (2019)
38. Laboratory for Physical Sciences, Maryland “Quantum topology: from photons to electrons”, (Dec 2019)
39. Maryland Quantum Materials Center Colloquium, “Enhancing superconductivity using quantum optics toolbox” (Nov 2019)
40. KITP-UC Santa Barbara conference, Topological Quantum Matter: From Fantasy to Reality, “Synthesized topology: from photons to matter” (Oct 2019)
41. Gordon Conference: Quantum Control of light and matter “Quantum Optics Toolbox Applied to Correlated States of Electrons” Newport, RI (Aug 2019)
42. Conference on Spins in a Quantum 1D Multi-particle Environment: from Exotic Phases and Non-trivial Topology to Protected Transport “Quantum optics of correlated states of matter” LMU, MUNICH (Sep 2019)
43. NANOMETA conference “Quantum topological photonics” St. Petersburg (July 2019)
44. International workshop on Topology “Quantum topological photonics” NIMS - Tsukuba Japan (June 2019)
45. International Workshop Recent Advances in Topological Photonics “Topological Photonics: from classical to quantum” PCS IBS, KOREA (June 2019)
46. QSIT Colloquium ETHZ “Topological Photonics: from classical to quantum” (May 2019)
47. Workshop on Synthetic Topological Matter, “Quantum topological photonics” Max Planck Institute-PKS, Dresden (May 2019)
48. Workshop TopoLyon: TOPOLOGICAL SYNTHETIC PHASES WITH PHOTONS, “From electrons to photons, and back to electrons”, Lyon (May 2019)
49. Max Planck Institute for the Science of Light, “Topological photonics: from classical to quantum”, Erlangen (May 2019)
50. Invited talk, APS March meeting Boston, “Topological photonics in hybrid systems” (March 2019)
51. Tutorial in quantum hybrid systems, APS March meeting Boston, (March 2019)
52. Columbia University, Physics Department condensed matter/AMO seminar, “Topological photonics: classical to quantum” (Mar 2019)
53. Synthetic Topological Matter, University of British Columbia, Vancouver “Quantum Topological Photonics” (Feb 2019)
54. NANOMETA, Seefeld, Austria “Quantum Topological Photonics”(Jan 2019)
55. Quantum Materials and Advanced Nano devices University of Delaware “Topological photonics: from classical to quantum” (Dec 2018)
56. Nature Conference on Topological photonics St Louis “Quantum advances in topological photonics” (Nov 2018)

57. Artificial Gauge Fields and Interacting Topological Phases in Ultracold Atoms, Frankfurt  
“Topological quantum source of light and light-matter interface” (Oct 2018)
58. Quantum Fluids of light and matter, Les Houches “Quantum aspects of topological  
photonics” (July 2018)
59. Topological Matter Beyond the Ten-Fold Way, Nordita “Recent Quantum directions in  
topological photonics” (July 2018)
60. Symposium on Nanophotonics and Metamaterials, St. Petersburg “Quantum directions in  
topological photonics” (June 2018)
61. NSF convergence workshop “Topological quantum optics interface: generation and routing of  
single photons” (Dec 2017)
62. Waterloo University, IQC seminar “Topological photonics: from classical to quantum” (Nov  
2017)
63. ETHZ, Workshop on Synthetic dimensions in quantum engineered systems, “Light-induced  
fractional quantum Hall physics in 2D materials and more” (Nov 2017)
64. Caltech, Physics Colloquium “Topological photonics: from classical to quantum” (Nov 2017)
65. BIRS Banff workshop on Photonic Topological Insulators, “Quantum transport in topological  
photonics” (Sep 2017)
66. University of West Virginia, Colloquium, “Topological photonics: from classical to  
quantum”, (Sept 2017)
67. Workshop on Fundamentals on Quantum Transport, ICTP, Trieste, Italy “Quantum Hall  
Transport: Photons and electrons” (Aug 2017)
68. SPICE workshop Non-equilibrium Quantum Matter, Mainz “Quantum Hall physics in  
photonic systems” (June 2017)
69. Kaiserslautern University, Colloquium “Topological photonics: from classical to quantum”  
(May 2017)
70. Chicago University, Seminar “Topological photonics: classical to quantum” (May 2017)
71. Cargese, Corsica, Workshop Quantum Fluids of Light and Matter “Topological and chiral  
quantum optics in photonic nanostructures” (May 2017)
72. ICFO, Barcelona, Workshop quantum light-matter interactions in low dimensions  
“Topological and chiral quantum optics in photonic nanostructures” (May 2017)
73. University of Illinois, Urbana-Champaign, Seminar, “Topological photonics: from classical  
to quantum” (Apr 2017)
74. Niels Bohr Institute Seminar, Copenhagen, “Topological photonics: from classical to  
quantum” (March 2017)
75. Invited talk, APS March meeting New Orleans, “Quantum transport properties in topological  
photonics” (March 2017)
76. Workshop Princeton, The Quantum Hall Effect: Past, Present & Future, “From silicon

- photonics to driven quantum Hall states in 2D materials” (March 2017)
77. Northwestern University, Colloquium “Topological photonics: from classical to quantum” (Feb 2017)
  78. NanoMeta Conference, “Towards Topological Quantum Transport in Photonic Structures” Seefeld, Austria (Jan 2017) invited.
  79. KITP-UCSB, Designer Quantum Systems out of equilibrium “Measurement Protocols for Many-body Properties in AMO Systems”, (Nov 2016) invited.
  80. Condensed Matter Seminar, Boston University, “Measuring many-body characters in AMO system” (Oct 2016) invited.
  81. CMP-Purdue Quantum Center seminar, Purdue University, “Photonic structures with topological robustness: from classical to quantum”, (Oct 2016) invited
  82. KITP-UCSB, program on Synthetic Quantum Matter, “Driven quantum Hall models in photonic systems” (Sep 2016). invited
  83. PIERS, Shanghai, “Towards Non-classical Topological Physics in Photonic Structures” (Aug 2016). invited
  84. KITPC-PKU conference, Synthetic Topological Quantum Matter, Beijing, “Topological physics in nanophotonics” (Aug 2016), invited
  85. META conference, Malaga, Spain, “Topological photonics: ring resonators and photonic crystals” (Jul 2016), invited
  86. Quantum simulation and many-body physics with light, Crete, Greece “Quantum transport in topological photonic structures” (Jun 2016), invited
  87. Solvay Workshop on 'Quantum simulation with cold matter and photons', Brussels, Belgium “New prospects in topological photonics” (Feb 2016) invited
  88. Physics of Quantum Electronics, Snowbird, Utah, “Topological Physics in Photonic Systems” (Jan 2016) invited
  89. Seminar Applied Physics, Stanford University, “Topological robustness in photonic systems”, (Dec 2015), invited
  90. Colloquium, ESE Department, University of Pennsylvania “Exploring Topological Physics in Photonic Systems,” (Oct 2015) invited
  91. Workshop Physics of bulk-edge correspondence, Tokyo, “Quantum Hall physics in photonics systems and observation of chiral anomaly” (Sep 2015) invited
  92. Gordon Research Conference on Quantum Control of Light & Matter, “Measuring Topological Invariants in Photonic Systems” Mt. Holyoke College (Aug 2015) invited
  93. PIERS, Prague, “Measuring Topological Invariants in Photonic Systems” (Jul 2015), invited
  94. Amsterdam Summer Workshop on Low-D Quantum Condensed Matter, University of Amsterdam, “Topological states in driven photonic systems” (Jul 2015), invited
  95. Light-matter interactions in low dimensions, ITAMP-Harvard workshop, “Topological states

in driven photonic systems” (Jun 2015) invited

96. Ecole de Physique, Quebec, Canada “Propriétés topologiques des systèmes photoniques” (Jun 2015) invited
97. Advanced Photonics Congress, OSA meeting, “Measuring Topological Invariants in Photonic Systems” (Jun 2015), invited
98. Winter workshop, Aspen Center for Physics, “Measuring topological invariants in photonic systems” (Mar 2015) invited
99. Winter school, Fai della Paganella, “Topological features in photonics” (Mar 2015)
100. APS March meeting, invited talk, San Antonio, “Photons in synthetic gauge fields” (Mar 2015) invited
101. APS March meeting, invited session, San Antonio, “Preparation and measurement of strongly interacting states of photons” (Mar 2015) invited
102. SPIE WEST, “Photons in synthetic gauge fields” San Francisco (Feb 2015) invited
103. Physics of Quantum Electronics, Snowbird, Utah, “Topologically Robust Transport of Photons in a Synthetic Gauge Field” (Jan 2015) invited
104. Quantum correlations out of equilibrium workshop, ETH “photons and gauge fields: from edge states to non-equilibrium FQH”, Zurich (Nov 2014) invited
105. Colloquium, USC “Towards quantum simulation in photonic systems” Los Angeles (Oct 2014) invited
106. Laboratory for physical sciences, University of Maryland “ Chiral edge state of photons and its potential applications” College Park (Sept 2014) invited
107. SPIE Optics and Photonics, “Topological features in photonic systems” San Diego (Aug 2014) invited
108. International Conference of Physics of Semiconductors (ICPS), “Topological orders in photonic systems” Austin, Texas (Aug 2014) invited
109. International Conference on Atomic Physics (ICAP), “Photons in synthetic gauge fields” Washington DC (Aug 2014) invited
110. International seminar on “Topology and Entanglement in Correlated Quantum Systems”, From observation of non-interacting edge states towards simulating many-body physics, Dresden, Germany (July 2014) invited
111. The 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics, “Preparing many-body (topological) states in photonic system” Singapore, (May 2014) invited
112. Laboratory for Research on the Structure of Matter, “Topological features in photonic systems” University of Pennsylvania (May 2014) invited
113. ECE department, “Quantum simulation with photons”, University of Maryland (April 2014) invited

114. Institut de Science et d'Ingénierie Supramoléculaires, "Topological features of photonic systems" University of Strasbourg (March 2014) invited
115. Physics Department, "Chiral edge states with topological robustness in photonic systems", City College of New York (Feb 2014) invited
116. Electrical Engineering seminar, "Topological Features of Photonics Systems" Princeton University (Jan 2014) invited
117. Colloquium, Laboratoire de Photonique et de Nanostructures (LPN-CNRS), Marcoussis, France "Topological features of photonic systems" (Dec 2013) invited
118. Seminar, Applied Physics Department, Yale University, "Edge state transport and other topological features in photonic systems" (Nov 2013) invited
119. Quantum Dynamics of Low-Dimensional Systems Workshop dedicated to the memory Adilet Imambekov, Harvard University (Sept 2013) invited
120. Physics Colloquium, University of Maryland Baltimore County, Bosonic topological orders (Sept 2013) invited
121. ICTP Workshop, "Non-Equilibrium Bosons: from Driven Condensates to Non-Linear Optics", Trieste, Italy (Aug 2013) invited
122. Summer Programme for synthetic gauge fields for atoms and photons, Trento, Italy, Bosonic quantum Hall physics: from optical photons to circuit QED systems (Jul 2013) invited
123. Physics Department, Stuttgart University, Observation of topological photonic edge states in Silicon (Jun 2013) invited
124. Seminar, ETH Zurich, Observation of topological photonic edge states in Silicon, (Jun 2013) invited
125. Seminar, RLE, MIT, Observation of topological photonic edge states in Silicon (Jun 2013)
126. DAMOP conference, Quebec city, Canada, Observation of topological photonic edge state in Silicon (June 2013)
127. Physics of light-matter coupling in nanostructures, Crete, Greece, Observation of topological photonic edge state in Silicon, (May 2013) invited
128. Seminar, Laboratory for physical sciences, Exploring many-body physics with photons: From silicon photonics to circuit-QED (May 2013)
129. Physics Department Colloquium, University of New Mexico, Quantum Hall physics with light (Feb 2013), invited
130. LASSP Seminar, Cornell University, Quantum Hall physics with light (Feb 2013), invited
131. Colloquium at the Physics Department, George Mason University, Simulating matter with light: how photons can play the role of electrons (Feb 2013), invited
132. SPIE, Photonic West, San Francisco, Implementing and exploiting synthetic magnetic field in photonic systems: towards robust delay lines and isolators, (Feb 2013) invited
133. Physics Department, University of Pittsburgh, Quantum simulation with light: from robust

- edge states to non-equilibrium fractional quantum Hall physics (Nov 2012), invited
134. Physics Department, Stuttgart Universität, Germany, Theoretical and experimental investigation of quantum Hall physics in photonic systems (Nov 2012), invited
  135. Institut de Physique et de Chimie des Matériaux de Strasbourg (CNRS), France, Quantum simulation with photons: towards the observation of photonic edge state (Nov 2012), invited
  136. Institute for Theoretical Physics, Innsbruck, Austria, Quantum Hall physics with photons: from robust edge states to non-equilibrium fractional quantum Hall (July 2012) invited
  137. Max-Planck Institut, Garching, Germany, Quantum Hall physics with photons: from robust edge states to non-equilibrium fractional quantum Hall (July 2012) invited
  138. APS March Meeting (invited Session: Quantum Simulations), Boston, Quantum Hall physics with photons and its application, (Feb 2012) invited
  139. SPIE, Photonic West, San Francisco, Implementation and application of quantum Hall physics with optical photons, (Jan 2012)
  140. Institut de Ciències Fotòniques (ICFO), Barcelona, Spain, Quantum Hall physics with photons and its applications (Jan 2012) invited
  141. Nanoscale Science and Engineering Center (NSEC), Columbia University, New York, Quantum Hall physics with photons and its applications (Nov 2011) invited
  142. SPIE, San Diego, Robust optical delay lines via topological protection (Aug 2011)
  143. BBN Technologies (Raytheon), Cambridge, MA, Simulating Quantum Hall physics with photons and exploiting topological robustness (Jul 2011)
  144. APS-DAMOP meeting, Atlanta, Georgia, Robust optical delay lines via topological protection (Jun 2011)
  145. University of Trento, Italy, Photonic Quantum Hall physics (Jun 2011), invited
  146. University of Innsbruck, Austria, Quantum Hall Physics and its application (May 2011), invited
  147. University of Vienna, Quantum Hall Physics with photons and its application (May 2011), invited
  148. Condensed Matter Theory Center, University of Maryland, Photonic Quantum Hall physics with photons and its applications (May 2011)
  149. Smith School of Business, University of Maryland, Two-Dimensional Coupled Resonator Delay System (May 2011), invited
  150. QIBEC seminar, National Institute of Standard and Technology, Gaithersburg, Robust optical delay lines via topological protection (Apr 2011), invited
  151. Center for Quantum Technologies, Quantum Hall physics with optical photons, Singapore (Jan 2011), invited
  152. Joint Quantum Institute Seminar, Quantum Hall Physics with Photons (Nov 2010)
  153. l'Institut d'Optique, Quantum transport in a nonlinear optical fiber, (Aug 2010)

154. Ecole Normale Supérieure - Paris, Quantum Spin Hall systems with photons (Aug 2010)
155. Institute for Quantum Information, CALTECH, Photonic non-equilibrium quantum transport in a nonlinear medium (Dec 2009), invited
156. Condensed Matter Theory Center, University of Maryland, Photonic Quantum Transport, from single-photon switch to out of equilibrium dynamics (Oct 2009)
157. Fan Group, Stanford University: Single-photon gate and out-of-equilibrium dynamics in a nonlinear optical fiber (July 2009), invited
158. Chair of Quantum Optics, University of Arizona: Quantum transport in a nonlinear optical fiber (June 2009), invited
159. Optical Nanostructure Laboratory, Columbia University: single-photon switching, photonic bound states / Quantum Transport in nonlinear fiber (May 2009), invited
160. Joint Quantum Institute, Maryland: Single-photon switching, photonic bound states and more (March 2009), invited
161. Silicon Photonics Lab, Intel, Santa Clara: Single-photon switching/Quantum transport in a nonlinear optical fiber (Feb 2009)
162. HP labs, Palo Alto: Quantum transport in a nonlinear optical fiber (Feb 2009)
163. Optics and Quantum Electronics Seminar, MIT: Nonlinear Schrodinger Equation in nonlinear optical fiber (Feb 2009), invited
164. Institute for Solid State Physics, University of Tokyo, Japan: Topological states in atomic systems (Jun 2008) (invited but cancelled due to travel complication)
165. Condensed Matter Group, University of Utah: Chern number characterization of Fractional Quantum Hall states on lattice (Sept 2007), invited

### **Patents**

- 2020, Topological Frequency Combs and nested Temporal Solitons, U.S. Provisional: 63/107784
- 2015, Systems, methods, and devices for optomechanically induced non-reciprocity, US9128246 B2
- 2015, Two-dimensional coupled resonator optical waveguide arrangements and systems, devices, and methods thereof, US20120308181A1
- 2015, Optical Voltage article, process for making and using same, 62143984
- 2014, Optical Temperature Sensor and use of same, US Patent No. 9,726,553

## **TEACHING, MENTORING AND ADVISING**

### **Courses Taught**

- ENEE789M/ PHY 720, Quantum Technology, Spring 2021
- ENEE 690, Quantum Mechanics, Fall 2020



- PHYS 728, Seminar in Atomic and Molecular Physics, Spring 2020
- ENEE789M/ PHY 720, Quantum Technology, Spring 2019
- ENEE789M/ PHY 720, Quantum Technology, Spring 2018
- ENEE680, Graduate Electromagnetic Theory I, Fall 2017
- ENEE 380, Electromagnetic Theory, Spring 2017
- ENEE 380, Electromagnetic Theory, Fall 2016
- ENEE789M/PHY 720, Quantum Technology, Spring 2016
- ENEE381, Electromagnetic Wave Propagation, Spring 2015
- ENEE 380, Electromagnetic Theory, Fall 2014

## **SERVICE AND OUTREACH**

### **Editorships, Editorial Boards and Reviewing Activities**

#### **Campus Service**

- 2021-, QLCI-NSF Robust Quantum Simulation, Associate Director
- 2018-2022, Physics Frontier Center, Co-director, NSF
- 2022, Search committee, CMNS Quantum Search
- 2020, Search committee, ECE department, Quantum Technology Center
- 2018-2022, APT committee, ECE Department
- 2019, Search committee, ECE department, Quantum Technology Center
- 2017-2018, College APT committee, Engineering School
- 2017-2019, Department Council, ECE department
- 2018, Search committee, ECE department, Quantum Technology Center
- 2018, Search committee, Physics department, Quantum Technology Center
- 2017, Selection committee, Engineering School, Junior Faculty Research Award
- 2015 Fellowship Admission Committee member, Joint Quantum Institute
- 2015-2019 Executive Board Member, Joint Quantum Institute
- 2016- 2017, General Academic Affairs Committee, ECE Department
- 2015, Lecturer, The Schrödinger Sessions: Science for Science Fiction writers

#### **Other Services**

- 2019 Feb, AAAS Family Science Days
- 2017, NSF unsolicited Quantum Panel, panel member
- 2016, NSF SBIR Panel, panel member
- 2016 June, Feb 2017 Science Fair Judge, Prince George's County Public Schools/Buck Lodge Middle School
- 2016 April, USA Science and Engineering Festival, DC, Volunteer
- 2014 April, USA Science and Engineering Festival, DC, Volunteer
- 2022, co-Organizer, “Simulating Quantum Many-Body Systems on Noisy Intermediate-Scale Quantum Computers” Dresden Max-Planck Institute, Germany.

- 2019, Technical Programme Committee, “Quantum Nanophotonics Materials, Devices and System” of SPIE, San Diego
- 2018, Technical Programme Committee of NANOMETA2019 , Seefeld, Austria
- 2018, Technical Program Committee, IEEE Photonics Conference, Reston VA.
- 2017, Scientific Advisory Board Member, Quantum Fluid of Light and Matter, Institut d’Etudes Scientifique de Cargèse (IESC), France
- 2016, Organizing session chair, Frontier in Optics, Rutgers
- 2016, Organizing chair, Physics of Quantum Electronics, Snowbird, Utah
- 2016, Member, CLEO Quantum Optics of Atoms, Molecules and Solids Committee
- 2015, Organizing chair, PIERS, Prague
- 2015, Organizer, "Non-equilibrium dynamics of strongly interacting photons" Conference at Kavli Institute for Theoretical Physics
- 2015, Organizer, 8th Optoelectronics and Photonics Winter School, Fai della Paganella, Italy
- 2014, Session chair, APS March meeting, Denver
- 2014, Co-Chair, OSA Incubator workshop on "topological order with photons"
- 2014-2015, Organizer, "Many-body physics with light" Program at Kavli Institute for Theoretical Physics
- 2013, Session chair and invited session organizer, APS March Meeting, Baltimore
- 2012, Session chair, APS March meeting, Boston