

## Ali Yazdani

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### Professional Preparation

IBM Almaden Research Center	Postdoctoral Fellow	1994–1997
Stanford University	Ph.D. Applied Physics	1995
Stanford University	M. S. Applied Physics	1991
University of California, Berkeley	B. A. Physics ( <i>summa cum laude</i> )	1989

*Graduate Thesis Adviser:* Aharon Kapitulnik, Stanford University

*Postdoctoral Adviser:* Donald M. Eigler, IBM Almaden Research Center

### Appointments

James S. McDonnell Distinguished University Professor, Princeton	2024-Present
Co-Director, Princeton Quantum Initiative	2023-Present
Director, Princeton Center for Complex Materials, Princeton University	2015-2024
Class of 1909 Professor of Physics, Princeton University	2015-2024
Professor of Physics, Princeton University	2005-Present
Professor of Physics, University of Illinois, Urbana	2004-2005
Visiting Professor of Applied Physics, Stanford University	2003-2004
Associate Professor of Physics, University of Illinois, Urbana	2003-2004
Assistant Professor of Physics, University of Illinois, Urbana	1997-2003

### Honors

- Oliver E. Buckley Prize, American Physical Society, 2023.
- Member of National Academy of Sciences (USA), elected 2019.
- Visiting Fellow Commoner, Trinity College, Cambridge (UK) 2019-20.
- Fellow of American Academy of Arts and Sciences, since 2015.
- Humboldt Research Award, Alexander von Humboldt Foundation, 2014.
- Gordon and Betty Moore Foundation Experimental Investigator, 2020 and 2014.
- Fellow of American Association for Advancement of Science, since 2012.
- Defense Science Study Group, 2010-2011.
- Member-at-large, American Physical Society (DCMP), 2011-2013.
- Fellow of American Physical Society, since 2009.
- Brilliant Ten, *Popular Science*, October 2008.
- A. P. Sloan Fellow, 2000-2002.
- Willet Faculty Scholar, Engineering College, University of Illinois, 2002-2004.
- Xerox Award for Faculty Research, University of Illinois, 2002.
- National Science Foundation Early Faculty Career Development Award, 1999.
- Research Innovation Award, Research Corporation, 1998.
- IBM Research Division Technical Award, 1996.
- IBM Pre-Doctoral Fellow, 1992-1993.
- University of California President's Undergraduate Fellow, 1988-1989.
- Phi Beta Kappa since 1988.

## Lectureships & Professorship

- Pagels Lecturer, Aspen Center for Physics, 2024
- Distinguished Visiting Professor, SPIN, Swiss National Centers of Competence in Research, University of Basel, Switzerland, 2023-2024
- Mueller Lecturer, Pennsylvania State University, 2023
- Distinguished Lecturer, Institute for Advanced Studies (IAS) at Hong Kong University of Science and Technology (HKUST), Hong Kong, 2019.
- Lamb Lecturer, Max Planck Institute for Solid State Research, Stuttgart, 2017.
- Morris Loeb Lectureship, Harvard University, 2016.
- Joliot Chair, École Supérieure de Physique et de Chimie Industrielles de la ville de Paris, 2016.
- Maggie and Nick DeWolf Public Lecturer, Aspen Center for Physics, 2016.
- Einstein Lecturer, Weizmann Institute of Science, Israel, 2015.
- Pagels Lecturer, Aspen Center for Physics, 2011.
- Kavli Lecturer, Delft University of Technology, The Netherlands, 2011.

## Publications

\*Notable Publications (Orcid ID: 0000-0003-4996-8904)

1. C.-L. Chiu, T. Wang, R. Fan, K. Watanabe, T. Taniguchi, X. Liu, M. P. Zaletel, and A. Yazdani, "High spatial resolution charge sensing of quantum Hall states," *Proc. Natl. Acad. Sci. U.S.A.* **122** (8) e2424781122 (2025). <https://doi.org/10.1073/pnas.2424781122>  
[arXiv:2410.10961v1](https://arxiv.org/abs/2410.10961v1)
2. K. P. Nuckolls, M. G. Scheer, D. Wong, M. Oh, R. L. Lee, J. Herzog-Arbeitman, K. Watanabe, T. Taniguchi, B. Lian, and A. Yazdani, "Spectroscopy of the Fractal Hofstadter Energy Spectrum," *Nature* (2025). <https://doi.org/10.1038/s41586-024-08550-2>  
[arXiv:2501.04777](https://arxiv.org/abs/2501.04777)
3. C. Chen, K. P. Nuckolls, S. Ding, W. Miao, D. Wong, M. Oh, R. L. Lee, S. He, C. Peng, D. Pei, Y. Li, C. Hao, H. Yan, H. Xiao, H. Gao, Q. Li, S. Zhang, J. Liu, L. He, K. Watanabe, T. Taniguchi, C. Jozwiak, A. Bostwick, E. Rotenberg, C. Li, X. Han, D. Pan, Z. Liu, X. Dai, C. Liu, B. A. Bernevig, Y. Wang, A. Yazdani, and Y. Chen, "Strong electron-phonon coupling in magic-angle twisted bilayer graphene," *Nature* **636**, 342-347 (2024).  
<https://doi.org/10.1038/s41586-024-08227-w>
4. S. Pu, A. C. Balram, Y. Hu, Y.-C. Tsui, M. He, N. Regnault, M. Zaletel, A. Yazdani, and Z. Papić, "Fingerprints of composite fermion Lambda levels in scanning tunneling microscopy," *Phys. Rev. B* **110**, L081107 (2024) <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.110.L081107>
5. C.-X. Liu, Y. Chen, A. Yazdani, and B. A. Bernevig, "Electron- $K$ -phonon interaction in twisted bilayer graphene," *Phys. Rev. B* **110**, 045133 (2024) <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.110.045133>
6. K. P. Nuckolls and Ali Yazdani, "A microscopic perspective on moiré materials," *Nature Reviews Materials* **9**, 460-480 (2024); <https://doi.org/10.1038/s41578-024-00682-1>
7. Y.-C. Tsui, M. He, Y. Hu, E. Lake, T. Wang, K. Watanabe, T. Taniguchi, M. P. Zaletel, and A. Yazdani, "Direct observation of a magnetic field-induced Wigner crystal," *Nature* **628**, 287-292 (2024). DOI: <https://doi.org/10.1038/s41586-024-07212-7>

8. \* A. Yazdani, F. Von Oppen, B. I Halperin, and A. Yacoby, "Hunting for Majoranas," *Science* **380**, no. 6651 (2023). DOI: <https://doi.org/10.1126/science.ade0850>
9. Y. Hu, Y.-C.n Tsui, M. He, U. Kamber, T. Wang, A. S. Mohammadi, K Watanabe, T. Taniguchi, Z. Papic, M. P. Zaletel, and A. Yazdani, "High-Resolution Tunneling Spectroscopy of Fractional Quantum Hall States," arXiv:2308.05789 (2023).
10. D. Wong, K. P. Nuckolls, M. Oh, R. L. Lee, K. Watanabe, T. Taniguchi, and A. Yazdani, "Insulators at Fractional Fillings in Twisted Bilayer Graphene Partially Aligned to Hexagonal Boron Nitride," *Low Temperature Physics* **49**, 655-661 (2023). DOI: <https://doi.org/10.1063/10.0019422>
11. \* G. Farahi, C.-L. Chiu, X. Liu, Z. Papic, K. Watanabe, T. Taniguchi, M. P. Zaletel, and A. Yazdani, "Broken symmetries and excitation spectra of interacting electrons in partially filled Landau levels," *Nature Physics* **19**, 1482-1488 (2023). DOI: <https://doi.org/10.1038/s41567-023-02126-z>
12. C. Chen, K. P. Nuckolls, S. Ding, W. Miao, D. Wong, M. Oh, R. L. Lee, S. He, C. Peng, D. Pei, Y. Li, S. Zhang, J. Liu, Z. Liu, C. Jozwiak, A. Bostwick, E. Rotenberg, C. Li, X. Han, D. Pan, X. Dai, C. Liu, B. A. Bernevig, Y. Wang, A. Yazdani, and Y. Chen, "Strong Intervalley Electron-Phonon Coupling in Magic-Angle Twisted Bilayer Graphene," arXiv preprint arXiv:2303.14903 (2023).
13. \* K. P. Nuckolls, R. L. Lee, M. Oh, D. Wong, T. Soejima, J. Pyo Hong, D. Călugăru, J. Herzog-Arbeitman, B. A. Bernevig, K. Watanabe, T. Taniguchi, N. Regnault, M. P. Zaletel, and A. Yazdani, "Quantum textures of the many-body wavefunctions in magic-angle graphene," *Nature* **620**, 525-532 (2023). DOI: <https://doi.org/10.1038/s41586-023-06226-x>
14. \* Y. Jia, P. Wang, C.-L. Chiu, Z. Song, G. Yu, B. Jäck, S. Lei, S. Klemenz, F. A. Cevallos, M. Onyszczak, N. Fishchenko, X. Liu, G. Farahi, F. Xie, Y. Xu, K. Watanabe, T. Taniguchi, B. A. Bernevig, R. J. Cava, L. M. Schoop, A. Yazdani and S. Wu, "Evidence for a monolayer excitonic insulator," *Nat. Phys.* **18**, 87-93 (2022). DOI: <https://doi.org/10.1038/s41567-021-01422-w>
15. \* N. Regnault, Y. Xu, M.-R. Li, D.-S. Ma, M. Jovanovic, A. Yazdani, S. S. P. Parkin, C. Felser, L. M. Schoop, N. P. Ong, R. J. Cava, L. Elcoro, Z.-D. Song, B. A. Bernevig, "Catalogue of flat band stoichiometric materials," *Nature* **603**, 824-828 (2022). <https://doi.org/10.1038/s41586-022-04519-1>
16. \* X. Liu, G. Farahi, C.-L. Chiu, Z. Papic, K. Watanabe, T. Taniguchi, M. P. Zaletel and A. Yazdani, "Visualizing broken symmetry and topological defects in a quantum Hall ferromagnet," *Science* **375**, 6578, pp. 321-326 (2022). DOI: <https://doi.org/10.1126/science.abm3770>
17. \* M. Oh, K. P. Nuckolls, D. Wong, R. L. Lee, X. Liu, K. Watanabe, T. Taniguchi and A. \* Yazdani, "Evidence for unconventional superconductivity in twisted bilayer graphene," *Nature* **600**, 240-245 (2021). <https://doi.org/10.1038/s41586-021-04121-x>
18. D. Călugăru, N. Regnault, M. Oh, K. P. Nuckolls, D. Wong, R. L. Lee, A. Yazdani, O. Vafek, and B. A. Bernevig, "Spectroscopy of twisted bilayer graphene correlated insulators," *Phys. Rev. Lett.* **129**, 117602 (2022). <https://doi.org/10.1103/PhysRevLett.129.117602>

19. B. Jäck, Y. Xie and A. Yazdani, "Detecting and distinguishing Majorana zero modes with the scanning tunnelling microscope," *Nature Reviews Physics* **3**, issue 8 (2021). DOI: <https://doi.org/10.1038/s42254-021-00328-z>
20. \* H. Ding, Y. Hu, M. T. Randeria, S. Hoffman, O. Deb, J. Klinovaja, D. Loss and A. Yazdani "Tuning interactions between spins in a superconductor," *PNAS* **118** (14) e2024837118 (2021). DOI: [10.1073/pnas.2024837118](https://doi.org/10.1073/pnas.2024837118)
21. A. Yazdani, "Magic, symmetry, and twisted matter," *Science* **371**, no. 6534, 1098-1099 (2021). DOI: [10.1126/science.abg5641](https://doi.org/10.1126/science.abg5641)
22. E. Y. Andrei, D. K. Efetov, P. Jarillo-Herrero, A. H. MacDonald, K. F. Mak, T. Senthil, E. Tutuc, A. Yazdani and A. F. Young, "The marvels of moiré materials," *Nat Rev Mater* **6**, 201-206 (Viewpoint) (2021). DOI: [10.1038/s41578-021-00284-1](https://doi.org/10.1038/s41578-021-00284-1)
23. B. Lian, Z.-D. Song, N. Regnault, D. K. Efetov, A. Yazdani, and B. A. Bernevig, "Twisted bilayer graphene. IV. Exact insulator ground states and phase diagram," *Phys. Rev. B* **103**, 205414 (2021). DOI: <https://doi.org/10.1103/PhysRevB.103.205414>
24. X. Liu, C.-L. Chiu, J. Y. Lee, G. Farahi, K. Watanabe, T. Taniguchi, A. Vishwanath, and A. Yazdani, "Spectroscopy of a tunable moiré system with a correlated and topological flat band," *Nature Communications* **12**, 2732 (2021) DOI: [10.1038/s41467-021-23031-0](https://doi.org/10.1038/s41467-021-23031-0)
25. \* K. P. Nuckolls, M. Oh, D. Wong, B. Lian, K. Watanabe, T. Taniguchi, B. A. Bernevig and A. Yazdani, "Strongly correlated Chern insulators in magic-angle twisted bi-layer graphene," *Nature*, **588**, 610-615 (2020). DOI: [10.1038/s41586-020-3028-8](https://doi.org/10.1038/s41586-020-3028-8)
26. \* D. Wong, K. P. Nuckolls, M. Oh, B. Lian, Y. Xie, S. Jeon, K. Watanabe, T. Taniguchi, B. A. Bernevig and A. Yazdani, "Cascade of electronic transitions in magic-angle twisted bi-layer graphene," *Nature* **582**, 198-202 (2020). DOI: [10.1038/s41586-020-2339-0](https://doi.org/10.1038/s41586-020-2339-0)
27. \* B. Jäck, Y. Xie, B. A. Bernevig, and A. Yazdani, "Observation of backscattering induced by magnetism in a topological edge state," *Proceedings of the National Academy of Sciences* **117**, 16214 (2020) DOI: [10.1073/pnas.2005071117](https://doi.org/10.1073/pnas.2005071117)
28. D. Wong, S. Jeon, K. P. Nuckolls, M. Oh, S. C. J. Kingsley and A. Yazdani, "A modular ultra-high vacuum millikelvin scanning tunneling microscope," *Review of Scientific Instruments* **91**, 023703 (2020). DOI: [10.1063/1.5132872](https://doi.org/10.1063/1.5132872)
29. S. Lei, J. Lin, Y. Jia, M. Gray, A. Topp, G. Farahi, S. Klemenz, T. Gao, F. Rodolakis, J. L. McChesney, C. R. Ast, A. Yazdani, K. S. Burch, S. Wu, N. P. Ong and L. M. Schoop, "High mobility in a van der Waals layered antiferromagnetic metal," *Science Advances* **07**, 6, (2020). DOI: [10.1126/sciadv.aay6407](https://doi.org/10.1126/sciadv.aay6407)
30. K. Agarwal, M. T. Randeria, A. Yazdani, S. L. Sondhi and S. A. Parameswaran, "Topology- and symmetry-protected domain wall conduction in quantum Hall nematics," *Phys. Rev. B* **100**, 16, 165103 (2019) DOI: [10.1103/physrevb.100.165103](https://doi.org/10.1103/physrevb.100.165103)
31. A. Yazdani, "Conjuring Majorana with synthetic magnetism," *Nature Materials* **18**, 1036-1037 (2019). DOI: [10.1038/s41563-019-0477-2](https://doi.org/10.1038/s41563-019-0477-2)
32. B. A. Bernevig and A. Yazdani, "New research reveals how electrons interact in twisted graphene," *Scientific American* (July 2019). ([Link to blog](#))

33. \* Y. Xie, B. Lian, B. Jäck, X. Liu, C.-L. Chiu, K. Watanabe, T. Taniguchi, B. A. Bernevig, and A. Yazdani, "Spectroscopic signatures of many-body correlations in magic-angle twisted bilayer graphene," *Nature* **572**, 101-105 (2019). DOI: 10.1038/s41586-019-1422-x
34. \* B. Jäck, Y. Xie, J. Li, S. Jeon, B. A. Bernevig, and A. Yazdani, "Observation of a Majorana zero mode in a topologically protected edge channel," *Science* **364**, 1255-1259 (2019). DOI: 10.1126/science.aax1444
35. \* M. T. Randeria, K. Agarwal, B. E. Feldman, H. Ding, H. Ji, R. J. Cava, S. L. Sondhi, S. A. Parameswaran, and A. Yazdani, "Interacting multi-channel topological boundary modes in a quantum Hall valley system," *Nature* **566**, 363-367 (2019). DOI: 10.1038/s41586-019-0913-0
36. R. V. Mishmash, A. Yazdani, and M. P. Zaletel, "Majorana lattices from the quantized Hall limit of a proximitized spin-orbit coupled electron gas," *Physical Review B* **99**, 11, 115427 (2019). DOI: 10.1103/physrevb.99.115427
37. \* F. Schindler, Z. Wang, M. G. Vergniory, A. M. Cook, A. Murani, S. Sengupta, A. Y. Kasumov, R. Deblock, S. Jeon, I. Drozdov, H. Bouchiat, S. Guéron, A. Yazdani, B. A. Bernevig, and T. Neupert, "Higher-order topology in bismuth," *Nature Physics* **14**, 918-924 (2018) (*cover story*). DOI: 10.1038/s41567-018-0224-7
38. \* M. T. Randeria, B. E. Feldman, F. Wu, H. Ding, A. Gyenis, H. Ji, R. J. Cava, A. H. MacDonald, and A. Yazdani, "Ferroelectric quantum Hall phase revealed by visualizing Landau level wavefunction interference," *Nature Physics* **14**, 796-800 (2018). DOI: 10.1038/s41567-018-0148-2
39. J. Li, S. Jeon, Y. Xie, A. Yazdani, and B. A. Bernevig, "Majorana spin in magnetic atomic chain systems," *Physical Review B* **97**, 125119 (2018). DOI: 10.1103/physrevb.97.125119
40. A. Gyenis, B. E. Feldman, M. T. Randeria, G. A. Peterson, E. D. Bauer, P. Aynajian, and A. Yazdani, "Visualizing heavy fermion confinement and Pauli-limited superconductivity in layered CeCoIn<sub>5</sub>," *Nature Communications* **9**, 549 (2018). DOI: 10.1038/s41467-018-02841-9
41. Z. Papić, R. S. K. Mong, A. Yazdani, and M. P. Zaletel, "Imaging anyons with scanning tunneling microscopy," *Physical Review X* **8**, 011037 (2018) DOI: 10.1103/physrevx.8.011037
42. \* S. Jeon, Y. Xie, J. Li, Z. Wang, B. A. Bernevig, and A. Yazdani, "Distinguishing a Majorana zero mode using spin resolved measurements," *Science* **358**, 772 (2017). DOI: 10.1126/science.aan3670
43. \* B. E. Feldman, M. T. Randeria, J. Li, S. Jeon, Y. Xie, Z. Wang, I. K. Drozdov, B. A. Bernevig, and A. Yazdani, "High-resolution studies of the Majorana atomic chain platform," *Nature Physics* **13**, 286 (2016). DOI: 10.1038/nphys3947
44. \* B. E. Feldman, M. T. Randeria, A. Gyenis, F. Wu, H. Ji, R. J. Cava, A. H. MacDonald, and A. Yazdani, "Observation of a nematic quantum Hall liquid on the surface of bismuth," *Science* **354**, 6310 (2016). DOI: 10.1126/science.aag1715
45. M. Liu, W. Wang, A. R. Richardella, A. Kandala, J. Li, A. Yazdani, N. Samarth, and N. P. Ong, "Large discrete jumps observed in the transition between Chern states in a ferromagnetic topological insulator," *Science Advances* **29**, No. 7, e1600167 (2016). DOI: 10.1126/sciadv.1600167

46. A. Gyenis, E. H. da Silva Neto, R. Sutarto, E. Schierle, F. He, E. Weschke, M. Kawai, R. E. Baumbach, J. D. Thompson, E. D. Bauer, Z. Fisk, A. Damascelli, A. Yazdani, and Pegor Aynajian, "Quasiparticle interference of heavy fermions in resonant x-ray scattering," *Science Advances* **2**, 10 (2016). DOI: DOI: 10.1126/sciadv.1601086
47. A. Gyenis, H. Inoue, S. Jeon, B. B. Zhou, B. E. Feldman, Z. Wang, J. Li, S. Jiang, Q. D. Gibson, S. K. Kushwaha, J. W. Krizan, N. Ni, R. J. Cava, B. A. Andrei Bernevig, and A. Yazdani, "Imaging electronic states on topological semimetals using scanning tunneling microscopy," *New Journal of Physics* **18**, 105003 (2016). DOI: 10.1088/1367-2630/18/10/105003
48. \* H. Inoue, A. Gyenis, Z. Wang, J. Li, S. W. Oh, S. Jiang, N. Ni, B. A. Bernevig and A. Yazdani, "Quasiparticle interference of the Fermi arcs and surface-bulk connectivity of Weyl semimetals," *Science* **351**, 1184 (2016). DOI: 10.1126/science.aad8766
49. J. Li, T. Neupert, Z. Wang, A. H. MacDonald, A. Yazdani, and B. A. Bernevig, "Two-dimensional chiral topological superconductivity in Shiba lattices," *Nature Communication* **7**, 12297 (2016). DOI: 10.1038/ncomms12297
50. S. K. Kushwaha, I. Pletikosić, T. Liang, A. Gyenis, S. H. Lapidus, Y. Tian, H. Zhao, K. S. Burch, J. Lin, W. Wang, H. Ji, A. V. Fedorov, A. Yazdani, N. P. Ong, T. Valla, and R. J. Cava, "Sn-doped  $\text{Bi}_{1.1}\text{Sb}_{0.9}\text{Te}_2\text{S}$  bulk crystal topological insulator with excellent properties," *Nature Communication* **7**, 11456 (2016). DOI: 10.1038/ncomms11456
51. M. T. Randeria, B. E. Feldman, I. K. Drozdov, and A. Yazdani, "Scanning Josephson spectroscopy on the atomic scale," *Physical Review B Rapid Communication* **93**, 161115R (2016). Selected as an Editor's choice. DOI: 10.1103/physrevb.93.161115
52. A. Yazdani, E. H. da Silva Neto, and P. Aynajian, "Spectroscopic imaging of strongly correlated electronic states," *Annual Review of Condensed Matter Physics* **7**, 11 (2016). DOI: 10.1146/annurev-conmatphys-031214-014529
53. T. Neupert, A. Yazdani, and B. A. Bernevig, "Shiba chains of scalar impurities on unconventional superconductors," *Physical Review B* **93**, 094508, (2016). DOI: 10.1103/PhysRevB.93.094508
54. P. K. Das, D. Di Sante, I. Vobornik, J. Fujii, T. Okuda, E. Bruyer, A. Gyenis, B. E. Feldman, J. Tao, R. Ciancio, G. Rossi, M. N. Ali, S. Picozzi, A. Yazdani, G. Panaccione, and R. J. Cava, "Layer-dependent quantum cooperation of electron and hole states in the anomalous semimetal  $\text{WTe}_2$ ," *Nature Communication* **7**, 10847 (2016). DOI: 10.1038/ncomms10847
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57. A. Yazdani, "Visualizing Majorana fermions in a chain of magnetic atoms on a superconductor," *Proceeding of Nobel symposium on Topological Phases of Matter, Physica Scripta* **T164**, 014012 (2015). DOI: 10.1088/0031-8949/2015/T164/014012
58. S. K. Kushwaha, J. W. Krizan, B. E. Feldman, A. Gyenis, M. T. Randeria, J. Xiong, S.-Y. Xu, N. Alidoust, I. Belopolski, T. Liang, M. Z. Hasan, N. P. Ong, A. Yazdani, and R. J.



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  61. \* S. Nadj-Perge, I. K. Drozdov, J. Li, H. Chen, S. Jeon, J. Seo, A. H. MacDonald, B. A. Bernevig, and A. Yazdani, "Observation of Majorana fermions in ferromagnetic atomic chains on a superconductor," *Science* **346**, 6209 (2014). DOI: 10.1126/science.1259327
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  63. \* I. K. Drozdov, A. Alexandradinata, S. Jeon, S. Nadj-Perge, H. Ji, R. J. Cava, B. A. Bernevig, and A. Yazdani, "One-dimensional topological edge states of bismuth bilayers," *Nature Physics* **10**, 663-669 (2014). DOI: 10.1038/nphys3048
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## Patents

- A. Yazdani and B. A. Bernevig, “Magnetic Topological Nanowires,” U.S. patent 10,020,438; July 10, 2018.
- A. Yazdani, N. P. Ong, R. J. Cava, “Electronic interconnects and devices with topological surface states and methods for fabricating same,” U.S. patent 9,331,020; May 3, 2016.

## Invited Talks

1. Invited speaker, Institute for Complex Adaptive Matter's ICAM Week of Science 2025," New Zealand, January 13 – 17, 2025
2. Invited speaker, NYU with Samsung and Moore Foundation EPIQS workshop "Progress on Realization of Topological States of Matter," Hawaii, December 13-20, 2024
3. Invited speaker, Quantum Flatlands & Allan Fest workshop "New Materials, Innovative Devices, and Emergence Principles," University of Texas, December 9 – 10, 2024
4. Invited colloquium speaker, "Visualizing strongly interacting quantum phases of matter," Purdue University, Indiana, USA, November 7, 2024
5. Invited colloquium speaker, "Visualizing strongly interacting quantum phases of matter," University of Cambridge UK, October 16, 2024
6. Co-Organizer, Donostia International Physics Center (DIPC) conference, "Quantum Phenomena in Multilayers and Heterostructures, San Sebastián, Spain, September 2-6, 2024
7. Invited Pagels Public Lecturer, Aspen Center for Physics summer session, Aspen, CO, July 14 – 25, 2024
8. Invited speaker, 2DSPM: International conference on Novel 2D materials explored via scanning probe microscopy & Spectroscopy," San Sebastián, Spain, June 26 – 29, 2024
9. Invited speaker, Gordon Research Conference, "Unconventional Phenomena in Quantum Matter," South Hadley, MA, June 23 – 25, 2024
10. Invited Public Lecturer, Hubbard Theory Consortium workshop "Condensed Matter in the City," London, UK June 3 – 7, 2024
11. Invited speaker, Max Planck Institute (PKS) workshop "Flat Bands and high-order Van Hove singularities," Dresden, GR, May 27 – 31, 2024
12. SFB 1277 conference, "Emergent Relativistic Effects in Condensed Matter," University of Regensburg, Germany, April 9-12, 2024
13. Invited speaker, International Winterschool on Electronic Properties of Novel Materials (IWEPM), Austria, March 8 – 13, 2024
14. CEMS Tokyo, "Symposium on Emergent Quantum Materials," February 14 – 23, 2024
15. Aspen Center for Physics Wintersession "Quantum Materials in the Quantum Information Era: From Theory to Experiment," February 3 – 8, 2024
16. TIQM Thouless Institute Winter Workshop "New Developments in Fractionalization," University of Washington, Seattle, January 13-15, 2024
17. Samsung and Moore Foundation Workshop on "Recent Progress in Quantum Materials 2023," Honolulu, Hawaii, October 9-12, 2023
18. AlbaNova Colloquium, Stockholm University, Sweden, September 21, 2023
19. Nobel Symposium, Stockholm, Sweden, June 24 – July 1, 2023
20. Workshop, CCQ Moire Materials Workshop, Flatiron Institute, New York City, May 29-June 1, 2023.
21. Gordon Research Conference "Interactions, Topology and Applications," Les Diablerets, Switzerland, April 29-May 1, 2023

22. Symposium: US-Switzerland Quantum Symposium, Basel, Switzerland, March 27-28, 2023
23. Erwin Mueller Lecturer, Penn State University, PA, March 23, 2023.
24. Invited speaker: APS March Meeting, Las Vegas, Nevada, March 5-10, 2023.
25. Conference, "Emergent phenomena in van der Waals heterostructures," Mumbai, India, January 9-12, 2023
26. Zurich Physics Colloquium, Zurich, Switzerland, December 13-14, 2022.
27. Pan-Pacific Workshop on Topology and Correlation in Exotic Materials, Moorea, French Polynesia, October 22-28, 2022.
28. Institute of Physics (IoP) conference: Advances in Quantum Transport in Low Dimensional Systems, London, September 26-27, 2022.
29. Conference, "Strongly Correlated Matter: From Quantum Criticality to Flat Bands," ICTP, Trieste, Italy, Aug. 27-Sept. 2, 2022.
30. Workshop, Aspen Center for Physics: Novel States of Matter and Topological Particles in Bulk Quantum Materials, Colorado, August 2022.
31. Conference, Materials and Mechanisms of Superconductivity (M2S 13<sup>th</sup> international convention), Vancouver, Canada, July 19-21, 2022.
32. Conference, ICFO "New Horizons in Quantum Materials," Barcelona, Spain, June 28, 2022.
33. Conference, "Frontiers of Quantum Materials and Devices (FQMD)," Valencia, Spain, June 21, 2022.
34. Gordon Research Conference "2D Electronics Beyond Graphene," New Hampshire, June 15-16, 2022.
35. Colloquium (virtual), Center for Quantum Nanoscience, Seoul, Korea, May 2022
36. Symposium on moiré materials at the Spring Meeting of the Materials Research Society (MRS), Hawaii, May 7-11, 2022
37. Workshop on "New Era of Two-Dimensional Quantum Matter," Princeton Center for Theoretical Science (PCTS), Princeton University, March 9, 2022
38. Condensed Matter Seminar, University of Illinois at Urbana-Champaign, February 12, 2022
39. Workshop on "Open Challenges in the Theory of Strongly Correlated Electron Systems," University of Minnesota, December 16, 2021
40. Condensed Matter Seminar, Stanford University, November 2021
41. Speaker (virtual), 24<sup>th</sup> Intl. Conference on Electronic Properties of 2D Systems & 20<sup>th</sup> Intl. Conference on Modulated Semiconductor Structures (EP2DS-24/MSS-20), Japan, November 2, 2021
42. Speaker (virtual), "Topological Quantum Science" workshop, Erice "Majorana Centre", November 2, 2021
43. Aspen Center for Physics (ACP) workshop: Topology and Correlation, July 2021
44. Discussion leader (virtual), "Majorana zero modes: new developments in experiment and theory, and the road ahead," KITP, UC Santa Barbara, May 25-26, 2021



45. Colloquium (virtual), MIT, May 20, 2021
46. Colloquium (virtual), UCLA, April 15, 2021, May 2021
47. Seminar (virtual) APS March Meeting 2021 (March 15: "Correlations and Topology in Twisted Moiré Systems")
48. Colloquium (virtual), University of Toronto, Canada, December 2020
49. Seminar (virtual), The Center for Computational Quantum Physics (CCQ), Flatiron Institute, New York, NY, December 2020
50. Colloquium (virtual), Aalto University, Finland, November 2020
51. LASSP & AEP Seminar (virtual), Cornell University, September 2020
52. Les Houches, France (virtual) summer school on "Emergent electronic states confined at interfaces," July 6 – 24, 2020.
53. ICFO-MIT Schools on the Frontier of Light; (virtual) Symposium on "Emergent Phenomena in Moiré Materials," Barcelona, Spain, July 6-17, 2020.
54. Virtual Science Forum; condensed matter seminar, June 30, 2020.
55. Condensed Matter Seminar (virtual), Princeton University, June 2020
56. Seminar, Rutgers University, May 2020
57. 21st International Winterschool on New Developments in Solid State Physics Winter-school, Mauterndorf, Austria, February 2020.
58. Plenary speaker, APCTP-KIAS Quantum Materials Symposium, YongPyong, Korea, 2020, February 2020.
59. Seminar, Center for Quantum Nanoscience, Institute for Basic Science, Seoul, Korea, February 2020.
60. Seminar, University of Oxford, United Kingdom, January 2020
61. Seminar, National High Magnetic Laboratory, Tallahassee, FL, January 2020
62. Seminar, Cavendish Laboratory, Cambridge University, United Kingdom, November and December 2019
63. Ringberg International Symposium on Unconventional Superconductors and Spin Liquids, Germany, October 2019
64. Joint PCTS-JST (Princeton Center for Theoretical Science and Japan Science Technology Agency) Conference: The Future of Topological Materials, Princeton University, NJ, October 2019
65. International conference "Paris Edge": Cutting-Edge Topics in Quantum Materials, Ecole Supérieure de Physique et Chimie Industrielles de la Ville de Paris (ESPCI), France, September 2019
66. International conference: Spins in a Quantum 1D Multi-particle Environment: from Exotic Phases and Non-trivial Topology to Protected Transport, Munich, GR, September 2019
67. International workshop: Moiré in Paris, École Normale Supérieure, France, June 2019
68. Joint Princeton University-Kavli Institute "Quantum Summit" meeting, Princeton University, NJ, May 2019

69. Material Research Society, Symposium on Topological Material for Quantum Information, Pheonix, AZ, April 2019
70. Seminar, École Normale Supérieure, Paris, FR, April 2019
71. American Physics Society March Meeting, Boston, MA, March 2019
72. International workshop on Anyons in Quantum Many-Body Systems, Max Planck Institute, Dresden, GR, January 2019
73. 4<sup>th</sup> annual International Conference on 2D Materials and Technologies (ICON2DMat 2018), Australia, December 2018
74. Future Low-Energy Electronics Technologies (FLEET) annual workshop, Australia, December 2018
75. Physics colloquium: University of Basel, Switzerland, November 2018
76. Physics colloquium: Caltech, Pasadena, CA, October 2018
77. Quantum colloquium: Cavendish Laboratory, University of Cambridge, United Kingdom, October 2018
78. Physics colloquium: University of Minnesota, September 2018
79. International conference: Materials and Mechanisms of Superconductivity and High Temperature Superconductors (M2S2018), Beijing, August 2018
80. International conference: SPSTM-7 & LTSPM-1: Advances in high-precision and low-temperature scanning probe microscopy," Netherlands, July 2018
81. International conference: Topological Matter Beyond the Ten-Fold Way, NORDITA (Nordic Institute for Theoretical Physics), Stockholm, Sweden, July 2018
82. Plenary speaker, International Conference on Nanoscience + Technology (ICN+T), Brno, Czech Republic, July 2018
83. International conference: Quantum Designer Physics, San Sebastian, Spain, July 2018
84. Aspen Center for Physics summer session invited talk, Aspen, CO, July 2018
85. International conference: Condensed Matter in the City – "Towards a new Spectroscopic Perspective of Quantum Materials," London, June 2018
86. International conference: Quantum Dynamics of Disordered Interacting Systems, Trieste, Italy, June 2018
87. International workshop: New Platforms for Topological Superconductivity with Magnetic Atoms, Dresden, GR, April 2018
88. Physics colloquium: APS Editorial Office, Ridge, NY, January 2018
89. International workshop: TMS-EPiQS 2<sup>nd</sup> Alliance Workshop – Topological Magnets and Topological Superconductors, Kyoto University, Japan, January 2018
90. Seminar, London Center for Nanotechnology (LCN), London, December 2018
91. Majorana Fermions and Beyond, Yale Quantum Institute, Connecticut, October 2017
92. Quantum Matter Symposium, Max Planck Society, Berlin, Germany, October 2017
93. Physics colloquium, University of Illinois, Urbana-Champaign, September 2017
94. Aspen Center for Physics summer session invited talk, Aspen, CO, August 2017

95. Gordon Research Conference: Spin Dynamics in Nanostructures, Les Diablerets, Switzerland, July 2017
96. Simons Program: Frontiers in Quantum Hall Physics, Niels Bohr Institute, University of Copenhagen, July 2017
97. Public lecturer, Inaugural Symposium: Frontiers in Emergent Quantum Phenomena, New York University (NYU), June 2017
98. International workshop: Topological Matter Meets Quantum Information, Shanghai Jiao Tong University (SJTU), China, June 2017
99. Spin Dynamics in the Dirac Systems, Johannes Gutenberg-Universität, Mainz, Germany, June 2017
100. Keynote speaker, Majorana States in Condensed Matter: Toward Topological Quantum Computation, Mallorca, Spain, May 2017
101. Symposium on Quantum Materials 2017, University of Oxford, United Kingdom, April 2017
102. APS March Meeting 2017, New Orleans, LA, March 2017.
103. International Winterschool on Electronic Properties of Novel Materials (IWEPM), Kirchberg, Austria, March 2017.
104. Lamb Lecture, Max Planck Institute for Solid State Research, Stuttgart, Germany, February, 2017.
105. Physics seminar, École Normale Supérieure, Paris, France, Feb. 2017.
106. 44<sup>th</sup> Conference on the Physics and Chemistry of Surfaces and Interfaces (PCSI-44), Santa Fe, New Mexico, January 2017.
107. EPIQS-TMS Trans-Pacific Conference on Topological Quantum Materials, Moorea, French Polynesia, December 2016.
108. Physics colloquium, Stanford University, California, November 2016.
109. Morris Loeb Lecturer, Harvard University, MA, November 2016.
110. TRR80 International Workshop: From Electronic Correlations to Functionality, Irsee, Germany, September 2016.
111. Topological States of Matter conference, San Sebastian, Spain, September 2016.
112. 20<sup>th</sup> International Vacuum Congress (IVC-20), Busan, Korea, August 2016.
113. Plenary speaker, International Conference on the Physics of Semiconductors (ICPS), Beijing, China, August 2016.
114. Lecturer, Boulder Summer School, Colorado, July 2016.
115. Physics seminar, Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI), Paris, France, July 2016.
116. Spectroscopies in Novel Superconductors (SNS 2016) conference, Ludwigsburg, Germany, June 2016
117. Grande conférence sur les matériaux de pointe quantum materials and quantum information, RQMP, Université de Sherbrooke, Montreal, Canada, June 2016.
118. Physics seminar, Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI), Paris, France, June 2016.

119. Physics seminar, Paris-Sud University, Orsay, France, June 2016.
120. NSF Frontiers of Condensed Matter Physics: PIs workshop on topological phases of matter, Arlington, VA, May 2016.
121. Deutsche Physikalische Gesellschaft (DPG) meeting, Regensburg, GR, March 2016.
122. Condensed Matter Seminar, Rutgers University, NJ, February 2016.
123. Aspen Center for Physics Winter Workshop of Topological Quantum Matter: Progress and Applications, February 2016.
124. Physics Colloquium, City College of New York, New York, February 2016.
125. Physics Colloquium, University of Pennsylvania, Philadelphia, December 2015.
126. ISANN 2015: International Symposium on Advanced Nanodevices and Nanotechnology, Hawaii, December 2015.
127. Quantum Transport in One Dimension, Dresden, Germany, September 2015.
128. Plenary speaker at the International Conference on Material and Mechanism of Superconductivity (M<sup>2</sup>S), Geneva, Switzerland, August 2015.
129. KITP Conference on Spin-Orbit Systems, UC-Santa Barbara, August 2015.
130. SpinTech VIII, Basel, Switzerland, August 2015.
131. New Trends in Topological Insulators 2015 (NTTI2015), San Sebastian, Spain, July 2015
132. Gordon Conference on Topological States, Hong Kong University of Science and Technology, June 2015.
133. Gordon Conference on Superconductivity, Chinese University of Hong Kong, May 2015
134. Einstein Colloquium at the Weismann Institute, Israel, May 2015.
135. Franklin Medal Symposium in Honor of C. Kane, G. Mele and S-C. Zhang, Temple University, April 2015.
136. Physics Colloquium, Princeton, March 2015.
137. APS March Meeting 2015, San Antonio, TX, March 2015.
138. Annual Meeting of American Association for Advancement of Science, Symposium on From Novel Imaging to Novel Physics, San Jose, CA, February 2015.
139. Physics Colloquium, New York University, December 2014.
140. SCES@60 workshop on strongly correlated electron systems at 60 years old, University of Illinois at Urbana-Champaign, October 2014.
141. Aspen Center for Physics Colloquium, August 2014.
142. Conference on New Trends in Topological Insulators, Berlin-Brandenburg Academy of Sciences, Berlin, July 2014.
143. Nobel Symposium on New Forms of Matter: Topological Insulators and Superconductors, Högberga Gård, Lidingö, Sweden, June 2014.
144. James Franck Institute Colloquium, University of Chicago, May 2014.
145. Physics Colloquium, University of California at Berkeley, April 2014.
146. DPG German Physical Society Spring meeting, Dresden, Germany, March 2014.

147. International Conference on Nanoscience and Nanotechnology, Adelaide, Australia, February 2014.
148. Physics Colloquium, University of California at Santa Barbara, January 2014.
149. Aspen Winter Conference on "Beyond Quasi-particles," Center for Physics, Aspen, January 2014.
150. "Superconductivity at 300mK and Beyond" workshop, University of Maryland, College Park, MD, November 2013.
151. AVS 60<sup>th</sup> International Symposium & Exhibition, Long Beach, California, October 2013
152. International Workshop on Topology and Nonequilibrium in Low-Dimensional Electronic Systems, Dresden, Germany, September 2013.
153. 22<sup>nd</sup> International Conference on Strongly Correlated Electron Systems, Tokyo, Japan, August 2013.
154. Conference on Majorana Physics in Condensed Matter, Erice, Italy, July 2013.
155. Aspen Center for Physics summer program, July 2013.
156. Microsoft-Station Q Meeting, University of California-Santa Barbara, June 2013.
157. Majoranas in Solid State Workshop, Peking University, Beijing, China, June 2013.
158. Gordon Research Conference on Superconductivity, Les Diablerets, Switzerland, May 2013.
159. Microsoft-Station Q Seminar, University of California-Santa Barbara, May 2013.
160. Physics Colloquium, Department of Physics, MIT, Cambridge, Massachusetts, April 2013.
161. Symposium on Novel Topological Quantum Matter, University of Texas at Dallas, February 2013.
162. International Symposium at Advance Institute for Material Research, Sendai, Japan, February 2013.
163. Physics Colloquium, Department of Physics, University of Florida, January 2013.
164. Aspen Winter Conference on Topological States of Matter, Aspen, CO, January 2013.
165. Institute Colloquium, Max Planck Institute for Solid State Physics, Stuttgart, Germany, December 2012.
166. Physics Colloquium, Harvard University, Boston, MA, December 2012.
167. Aalto Physics Colloquium, Helsinki University of Technology, Otsvängen, Espoo, Finland, November 2012.
168. DARPA Workshop on Correlated Quantum Materials, Arlington, VA, November 2012.
169. Condensed Matter Seminar, Rutgers University, NJ, October 2012.
170. Keck Symposium on Imaging and Detection on the Molecular Scale: Challenges and Opportunities, Irvine, CA, August 2012.
171. Summer School and Workshop on Innovation in Strongly Correlated Electronic Systems, International Center for Theoretical Physics, Trieste, Italy, August 2012.
172. International Conference on Material and Mechanism of Superconductivity, Washington, D.C., August 2012.

173. Workshop on Interacting Electron in Strong Spin-Orbit Systems, Aspen, CO. July 2012.
174. Gordon Conference on Correlated Systems, New Hampshire, MA June 2012.
175. Workshop on Quantum Matter from Nano to the Macroscale, Max-Planck Institute for the Physics of Complex Matter, June 2012.
176. Workshop on Quantum Disorder Systems, Poincare Institute, Paris, France, June 2012.
177. Condensed Matter Seminar, Los Alamos National Laboratory, May 2012.
178. Physics Colloquium, University of Roma La Spaienza, April 2012.
179. Condensed Matter Seminar, Harvard University, Cambridge, MA, March 15, 2012.
180. March APS Meeting, Boston, MA, February 27-March 2, 2012.
181. Workshop on Physics of topological insulators, graphene, spin chains and Nanowires, Dresden, Germany, February 16-17, 2012.
182. 39<sup>th</sup> Conference on the Physics and Chemistry of Surfaces and Interfaces (PCSI), Santa Fe, New Mexico, January 22-26, 2012.
183. Conference on Topological Insulators and Superconductors at Kavli Institute for Theoretical Physics, Santa Barbara, CA, November 2011.
184. Conference on Topological aspects of quantum-coherent states in new materials, Chicago, IL, October 2011.
185. Half-Plenary Speaker 26<sup>th</sup> Annual International Conference on Low Temperature Physics, LT26, Beijing, China, August 2011.
186. Pagels Public Lecture, Aspen, August 2011.
187. Colloquium, Aspen Center For Physics, Aspen, CO, August 2011.
188. Fifth Stig Lundqvist Conference on Advancing the Frontiers of Condensed Matter Physics, Trieste, Italy, July 10-15, 2011.
189. Kavli Colloquium, Kavli Institute of Nanoscience, Delft University of Technology, Delft, Netherlands, April 13-15, 2011.
190. Physics Colloquium, Yale University, New Haven, CT, April 11, 2011.
191. Physics Colloquium, University of Texas, Austin, TX, April 7, 2011.
192. Institute Colloquium, Max-Planck Institute for Complex Matter, Dresden, Germany, March 1, 2011.
193. Physics Colloquium, Oxford University, Oxford, England, February 2011.
194. Aspen Winter Conference on Contrasting Superconductivity in Pnictides and Cuprates- , Aspen, CO, January 2011.
195. 2010 Winter School of theoretical physics on "Topological states and condensed matter systems" at the Institute of Advanced Study of the Hebrew University, Jerusalem, Israel, December 2010.
196. Conference on Topological Insulators & Superconductors Workshop, Princeton, NJ, November 2010.
197. 55<sup>th</sup> Annual Conference on Magnetism & Magnetic Materials, Atlanta, GA, November 2010.



198. Physics Colloquium, Pennsylvania State University, College Park, PA, October 2010.
199. Zurich Physics Colloquium, ETH Zurich, Switzerland, September 2010.
200. CM Seminar, ETH Zurich, Switzerland, September 2010.
201. Keynote Lecturer, 18<sup>th</sup> International Vacuum Congress (IVC-18), Beijing, China, August 2010.
202. Strongly Correlated Electron Conference Santa Fe, NM, July 2010.
203. Conference on The Physics of Complex Oxides, Santorini, June 2010.
204. 6th annual workshop of the NSF Center for Probing the Nanoscale, Stanford University, May 14, 2010.
205. Invited talk at American Physical Society March Meeting, Portland, March 2010.
206. Conference on Exotic Insulating States of Matter, Johns Hopkins Workshop, Baltimore, MD, January 14-16, 2010.
207. ICAM Annual Conference, University of California, Davis, January 10-13, 2010.
208. Physics Colloquium, University of Chicago, Chicago, Illinois, October 15, 2009.
209. Nanostructures at Surfaces International Conference, Ascona, Switzerland, September 20-25, 2009.
210. 9<sup>th</sup> International Conference on Materials and Mechanisms of Superconductivity M<sup>2</sup>S-IX, Tokyo, Japan, September 2009.
211. Glassy '09, Emergence of Inhomogeneous Phases in Strongly Correlated Electron Systems, Paris, France, July 2009.
212. Critical Issues Related to Higher Temperature Superconductors Conference, Kavli Institute for Theoretical Physics, Santa Barbara, CA, June 2009.
213. Gordon Research Conference on Superconductivity, Hong Kong, June 2009.
214. Conference on Superconductor-Insulator Transitions, International Center for Theoretical Physics, Trieste, Italy, May 2009.
215. CMAP Colloquium, Harvard, April 2009.
216. Chez Pierre Seminar, MIT, April 2009.
217. Spin Currents 2009 Retreat, IBM, Stanford Sierra Conference Center, Fallen Leaf Lake, South Lake Tahoe, April 2009.
218. Condensed Matter Physics Seminar, Yale, New Haven, MA, March 2009.
219. Condensed matter Physics Seminar, Ohio State University, Columbus, Ohio, January 2009.
220. Ringberg Superconductivity Symposium, Schloss Ringberg, Rottach-Egern, Germany, November 2008.
221. Workshop on Strong Correlation in Materials and Atom Traps, International Center for Theoretical Physics, Trieste, Italy, August 2008.
222. Half-Plenary Talk at the 25<sup>th</sup> Low Temperature Conference, Amsterdam, August 2008.
223. Plenary Talks at the 2008 International Conference on Nanoscience and Technology (ICN+T 2008), Keystone, CO, July 2008.

224. School Lecturer at the 2008 Boulder Condensed Matter Physics Summer School focusing on "Strongly Correlated Electrons, Boulder, CO, July 2008.
225. International Conference on Low-Energy Electrodynamics in Solids 2008 (LEESO8), Vancouver-Whistler, British Columbia, July 2008.
226. Unconventional Phases and Phase Transitions in Strongly Correlated Electron Systems (UPPT08), Dresden, Germany, June 2008.
227. Oakridge National Laboratory Discovery Lecture, May 2008.
228. Canadian Institute for Advanced Research Quantum Materials Meeting, Toronto, Canada, May 2008.
229. IBM T. J. Watson Research Center, Physical Sciences Seminar, May 2008.
230. Frontiers in Nanoscience: Spectroscopy at the Nanometer Scale, Schloss Ringberg, Rottach-Egern, Germany, April 2008.
231. American Physical Society March 2008 Meeting, New Orleans, March 2008.
232. University of Wisconsin, Physics Colloquium, February 2008.
233. The 35<sup>th</sup> Conference on the Physics and Chemistry of Surfaces and Interfaces (PCSI), Santa Fe, New Mexico, January 2008.
234. Workshop on Conductor-Insulator Quantum Phase Transitions at the Ohio State University, Columbus, Ohio, January 2008.
235. Condensed Matter Seminar, Rutgers University, October 2007.
236. Gordon Conference on Superconductivity, Les Diablerets, Switzerland, September 2007.
237. International Conference on Spectroscopies in Novel Superconductors (SNS2007), Sendai, Japan, August 2007.
238. Workshop on Superfluid Universe, Aspen, Colorado August 2007.
239. A. I. Larkin Memorial Conference, Landau Institute for Theoretical Physics, Chernogolovka, Russia, June 2007.
240. Fourth International School and Conference on Spintronics and Quantum Information Technology, Spintech IV, Maui, Hawaii, June 2007.
241. International Symposium on Nanoscience and Nanotechnology, Hamburg, Germany, May 30 to June 2007.
242. Dynamics in Complex Systems, DELFS III, Port Jefferson, NY, May 2007.
243. Condensed Matter Seminar, Harvard University, May 2007.
244. Physics Colloquium, Ohio University, May 2007.
245. Condensed Matter Seminar, Simon Fraser University, Vancouver, British Columbia, April 2007.
246. Condensed Matter Seminar, University of British Columbia, April 2007.
247. Condensed Matter Seminar, University of Illinois Urbana Champaign, Condensed Matter Seminar, March 2007
248. Norman Hascoe Distinguished Lecture, University of Connecticut, February 2007.

249. Winter 2007 Aspen Condensed Matter Conference on Spins in Nanostructures: Dynamics, Spectroscopy, Manipulation and Control, Aspen, Colorado, January 2007.
250. Physics Colloquium, Johns Hopkins University, January 2007.
251. MMM/Intermag Conference, Baltimore, MD, January 2007.
252. 5<sup>th</sup> International Conference Stripes 06, University of Roma, La Sapienza, Italy, December 2006.
253. The 10<sup>th</sup> Anniversary Workshop of APCTP (Asia Pacific Center for Theoretical Physics), Pohang, Korea, November 2006.
254. Condensed Matter Seminar, University of Pennsylvania, September 2006.
255. 4th International Conference on Scanning Probe Spectroscopy SPS'06, Hamburg, Germany, July 2006.
256. 8<sup>th</sup> International Conference on Materials and Mechanisms of Superconductivity and High Temperature Superconductors (M2S-HTSC-VIII), Dresden, Germany, July 2006.
257. Weizmann Institute of Science, Rehovot, Israel, Physics Colloquium, June 2006.
258. University of Minnesota, Physics Colloquium, April 2006.
259. Rice University, Physics Colloquium, April 2006.
260. Workshop on Electron Phonon Coupling in Oxides, Santa Fe, NM, April 2006.
261. Rutgers University, Physics Colloquium, December 2005.
262. Michigan State University, Physics Colloquium, November 2005.
263. Max Planck Institute and DFG Workshop on Properties of Cuprate Superconductors, Schloss Ringberg, Rottach-Egern, Germany, November 2005.
264. Swiss Workshop on Materials with Novel Electronic Properties, Les Diablerets, Switzerland, September 2005.
265. Frontiers of Science within Nanotechnology conference, Boston University, August 2005.
266. Institute for Complex Adaptive Matter Summer School: Strongly correlated electrons: diverse examples and unifying themes, Cargèse, France, August 2005.
267. Fourth Asia-Pacific Workshop on Strongly Correlated Systems, Beijing, China, May 2005.
268. Max-Planck-Institute Dresden workshop on Nanoscale Fluctuations in Magnetic and Superconducting Systems (NANO05), Dresden, Germany, May 2005.
269. University of Kentucky in Lexington, Novel Electronic Materials Workshop, April 2005.
270. AAAS Annual Meeting, Frontiers in Physical Sciences, Washington DC, February 2005.
271. Princeton Center for Complex Materials, Symposium Novel Electronic Materials, February 2005.
272. Fourth International Conference of the STRIPES series on Nanoscale Heterogeneity and Quantum Phenomena in Complex Matter, Roma, Italy, September 2004.
273. Seventh International Conference on Spectroscopies in Novel Superconductors (SNS2004), Sitges, Spain, July 2004.
274. Gordon Research Conference on Correlated Electron Systems, South Hadley Massachusetts, July 2004.

275. Kavli Institute for Theoretical Physics Conference on Exotic Order and Criticality in Quantum Matter, Santa Barbara, CA, June 2004.
276. Canadian Institute for Advanced Research, Quantum Materials Meeting, May 2004.
277. Canadian Institute for Advanced Research, Summer School, May 2004.
278. Institute for Adaptive Matter Conference on Evolution of Quantum Effects from the Nano to the Macro Scale, Corsica, France, May 2004.
279. Yale University, Condensed Matter Seminar, April 2004.
280. University of Chicago, James Franck Institute and MRSEC Seminar, April 2004.
281. American Physical Society March Meeting, Montreal, Canada, March 2004.
282. Stanford University, Condensed Matter Seminar, March 2004.
283. University of California at Santa Cruz, CM-EE Seminar, March 2004
284. Northwestern University, Physical Chemistry Seminar, February 2004.
285. Aspen Center for Physics: Winter Conference on Condensed Matter, Aspen, CO, January 2004.
286. Northwestern University, Physical Chemistry Colloquium, January 2004.
287. University of California at Los Angeles, Physics Department Colloquium, January 2004.
288. 3rd International Workshop on Novel Quantum Phenomena in Transition Metal Oxides and The 1st Asia-Pacific Workshop on Strongly Correlated Electron Systems, Sendai, Japan, November 2003.
289. 3<sup>rd</sup> International Symposium on Scanning Probe Spectroscopy and Related Methods SPS'03, Poznan-Malta, Poland, July 2003.
290. Los Alamos National Laboratory, Condensed Matter Seminar, June 2003.
291. Workshop on Phase Competition in Transition-Metal Oxides and Other Compounds, University of California at Berkeley, May 2003.
292. 7<sup>th</sup> International Conference on Materials and Mechanisms of Superconductivity and High Temperature Superconductors, Rio de Janeiro, Brazil, May 2003.
293. Material Research Society, Symposium on Nanotubes-Based Devices, San Francisco, CA, April 2003.
294. University of Pennsylvania, Frontiers of Materials Seminar, February 2003.
295. University of California at Berkeley, Condensed Matter seminar, November 2002.
296. University of Illinois at Chicago, Condensed Matter seminar, October 2002.
297. California Institute of Technology, Physics Department Colloquium, October 2002.
298. IBM T.J Watson Research Center, Yorktown Heights, IBM-Illinois Symposium, October 2002.
299. University of Chicago, Physics Department Colloquium, October 2002.
300. University of Illinois at Urbana-Champaign, Physics Department Colloquium, September 2002.
301. International Conference on the Science and Application of Nanotubes NT'02, Boston College, July 2002.

302. Workshop on Intrinsic Multiscale Structure and Dynamics in Complex Electronic Oxides, Trieste, Italy, June 2002.
303. The Centennial Meeting of the Electrochemical Society, Philadelphia, PA, May 2002.
304. University of Pennsylvania, Physics Department Colloquium, April 2002.
305. American Physical Society March Meeting, Indianapolis, IN, March 2002.
306. XVI<sup>th</sup> International Winter School on Electronic Properties of Novel Materials, Kirchberg, Austria, March 2002.
307. Princeton University, Physics Department Colloquium and Condensed Matter seminar, February 2002.
308. Institute for Complex Adaptive Matter Workshop on Local probes of Nanoscale Phenomena in Matter, Santa Fe, NM, December 2001.
309. Stanford University, Condensed Matter Seminar, December 2001.
310. University of Wisconsin, Physics Department Colloquium, October 2001.
311. Gordon Conference on Superconductivity, Oxford, England, September 2001.
312. Symposium on Physics of Correlated Electron Systems, Los Alamos National Laboratory, August 2001.
313. Los Alamos National Laboratory, Symposium on Correlated Electron Physics, August 2001.
314. Workshop on Defects in Correlated Electron Systems, Dresden, Germany, July 2001.
315. 6<sup>th</sup> International Conference on Spectroscopy of Novel Superconductors, Chicago, IL, May 2001.
316. Ohio State University, Condensed Matter Seminar, April 2001.
317. National High Magnetic Field Laboratory, Florida State University, Seminar, December 2000
318. Second International Conference on Scanning Probe Spectroscopy, Hamburg, Germany, July 2000.
319. American Physical Society March Meeting, Minneapolis, MN, March 2000.
320. Indiana University, Condensed Matter Seminar, November 1999.
321. University of Tennessee at Knoxville, Condensed Matter Seminar, June 1999.
322. Purdue University, Condensed Matter Seminar, January 1999.
323. National Academy of Sciences 10<sup>th</sup> Annual Symposium on Frontiers in Science, Irvin, CA, November 1998.
324. American Chemical Society: Symposium on Structure and Electronic Properties of Materials by Scanning Probe Microscopy, Boston, MA, August 1998.
325. Gordon Conference on Correlated Electron Systems, Tilton College, New Hampshire, July 1998.
326. Cornell University, Condensed Matter Seminar, March 1998.
327. Northwestern University, Condensed Matter Seminar, March 1998.

328. The 5<sup>th</sup> International Colloquium on Scanning Tunneling Microscopy, Kanazawa, Japan, December 1997.
329. University of Illinois at Urbana-Champaign, Condensed Matter Seminar, October 1997.
330. International Scanning Microscopy Meeting: Symposium on Formation and Properties of Nanoscale Structures, Chicago, IL, August 1997.
331. IBM Almaden Research Center, Physical Sciences Colloquium, May 1997.
332. NEC Research, Princeton, Seminar, April 1997.
333. American Physical Society March Meeting, Kansas City, March 1997.
334. University of Southern California, Condensed Matter Seminar, February 1997.
335. California Institute of Technology, Condensed Matter Seminar, February 1997.
336. Aspen Center for Physics: Winter Conference on Condensed Matter, Aspen, CO, January, 1997.
337. Stanford University, Condensed Matter Seminar, November 1996.
338. Princeton University, Condensed Matter Seminar, November 1996.
339. Symposium on the Physics of Nanostructures, Hamburg University, Hamburg, Germany, June 1996.
340. NATO Workshop on Atomic and Molecular Wires, Les Houches, France, May 1996.
341. University of California at Santa Barbara, Condensed Matter Seminar, May 1996.
342. University of Geneva, Switzerland, May 1996.
343. CNRS-Low Temperature Laboratory, Grenoble, France, May 1996.
344. University of Paris at Orsay, France, May 1996.
345. University of California at Berkeley, Condensed Matter Seminar, September 1996.
346. Brown University, Condensed Matter Seminar, April 1996.
347. University of California at San Diego, Condensed Matter Seminar, April 1996.
348. University of Illinois at Urbana-Champaign, Condensed Matter Seminar, April 1996.
349. Purdue University, Condensed Matter Seminar, March 1996.
350. Rice University, Condensed Matter Seminar, February 1996.
351. University of Pennsylvania, Condensed Matter Seminar, February 1996.
352. University of California at Santa Cruz, Condensed Matter Seminar, May 1995.
353. American Physical Society March Meeting, San Jose, CA, March 1995.
354. University of California at Berkeley, Condensed Matter Seminar, October 1994.
355. IBM Almaden Research Center, Seminar, April 1994.
356. Harvard University, Condensed Matter Seminar, December 1993.
357. IBM Yorktown Heights Research Center, Seminar, September 1993.

## **Academic Activities**

### ***Panels & Committees:***



1. Aspen Center for Physics, Elected Board of General Members, 2020-2025
2. Scientific Advisory Board, Max Planck Institute of Microstructure Physics, 2024-2029
3. Scientific Advisory Committee, Energy Frontier Research Center (EFRC) Quantum Sensing and Quantum Materials (QSQM), University of Illinois, 2021-present
4. Advisory Committee, Australian Research Council Center of Excellence in Future Low-Energy Electronics Technologies (FLEET), 2017-present
5. Science and Technology Steering Committee, Brookhaven National Laboratory, 2005-2022.
6. Alan T. Waterman Award Committee, National Science Foundation, 2013-2015.
7. Chair, American Physical Society (DCMP) Fellowship Committee, 2015.
8. Member-at-large, American Physical Society (DCMP), 2011-2013.
9. McMillian Award Prize Committee, University of Illinois, External Member, 2009-2012.
10. Defense Science Study Group, 2010-2011.
11. Member AAAS Electorate Nominating Committee of the Section on Physics, 2009-2012.
12. Panel member, National Science Foundation's site visit of Harvard University's Nanoscience and Engineering Center, May 2003, 2007.
13. Panel member, National Science Foundation's review panel for evaluation of Nanoscale Science and Engineering (NIRT) program proposals, Washington D.C., January 2001.

**Organizing Activities:**

1. Co-Director, Princeton Quantum Initiative, 2023-present
2. Co-Organizer, Donostia International Physics Center (DIPC) conference, "Quantum Phenomena in Multilayers and Heterostructures, September 2-6, 2024
3. Director, Princeton Center for Complex Materials, an NSF-supported Materials Science and Research Center (MRSEC) at Princeton (annual budget of \$3M), 2015-2024
4. Program Committee for the PWA@100 Workshop: A Centenary Celebration for Philip W. Anderson, Princeton, NJ, December 2023
5. Co-Organizer, Aspen Center for Physics Winter Conference on Moiré Quantum Matter, Aspen, March 2023
6. Co-Chair, Gordon Research Conference, "New Materials and Structures in Topological and Correlated Systems," Hong Kong, CN, June 16-21, 2019
7. Co-Organizer, Princeton Center for Theoretical Science workshop, "Strongly Correlated Systems and Interactions in Quantum Matter," Princeton, NJ, April 25-28, 2019
8. Organizer, National Science Foundation Frontiers of Condensed Matter Physics Meeting, Arlington, Virginia, May 2016.
9. Co-Organizer, Princeton Center for Theoretical Science and ONR Workshop on Majorana Fermions and Beyond, Princeton, NJ, October 2014.
10. Program Committee for the PWA90 Workshop Marking the Frontier Scientific Accomplishments of Philip W. Anderson, Princeton, NJ, December 2013.

11. Co-Organizer, Aspen Center for Physics summer program on Disorder, Dynamics, Frustration and Topology in Quantum Condensed Matter, Aspen, CO, June-July, 2013.
12. Chair, Gordon Research Conference on Superconductivity, Waterville Valley, NH, June 5-10, 2011.
13. PCCM Executive Committee. (Princeton Center for Complex Materials, a National Science Foundation Funded Materials Research Science and Engineering Center (MRSEC) at Princeton University), 2008-present
14. Co-Chair Joint PCCM-PCTS (Princeton Center for Complex Materials-Princeton Center for Theoretical Science) Conference on Topological Insulators and Superconductors, Princeton, NJ, November 13-14, 2010.
15. Program Committee for the International Conference on Nanoscale Science and Technology (ICN+T), Beijing, China, August 2010.
16. Chair, Princeton Physics Department Graduate Admission Committee, 2009-11.
17. Task Force on the Status of Women and Minority Faculty at Princeton, 2006-2007.
18. Co-Chair Joint PCCM-PCTS (Princeton Center for Complex Materials-Princeton Center for Theoretical Science) Iron-based High Temperature Superconductors Short Program, Princeton, NJ, November 13-14, 2008.
19. Program Committee for the International Conference on Nanoscale Science and Technology, Keystone Resort, Colorado, July 2008.
20. Vice-Chair, Gordon Conference on Superconductivity, Hong-Kong, 2009.
21. Scientific Advisory Committee, International Conference on Scanning Probe Spectroscopy and Related Methods, 2003-present.
22. Co-Organizer, Institute for Complex Adaptive Matter Workshop on Local probes of Nanoscale Phenomena in Matter, Santa Fe, New Mexico, December 2001.

**Previous Graduate Students (21) and Postdoctoral Research Associates (14)**

1. Daniel J. Hornbaker (Ph.D. U. Illinois, 2002), Research Scientist, Army Research Laboratory
2. Se-Jong. Kahng (Postdoc 1999-2000), Professor of Physics, Korea University, Seoul, Korea
3. Michael Vershinin (Ph.D. U. Illinois, 2004), Assistant Professor of Physics, University of Utah
4. Shashank Misra (Ph.D, U. Illinois, 2005), Staff Scientist, Sandia National Laboratory
5. Dale Kitchen (Ph.D. U. Illinois, 2006), Research Scientist, Milliken Research Corporation
6. Kenjiro Gomes (Ph. D. U Illinois, 2008), Assistant Professor of Physics, Notre Dame University.
7. Abhay Pasupathy (Postdoc 2004-2008) Associate Professor of Physics, Columbia University
8. Anthony Richardella (Ph.D. U. Illinois, 2009), Postdoctoral Scientist, Penn State University
9. Aakash Pushp (Ph.D. U Illinois, 2009), Research Staff Member, IBM Almaden Research Center
10. Lukas Urban (Ph.D. U Illinois, 2010), Princeton Consulting Co.
11. Pedram Roushan (Ph.D. Princeton, 2011), Research Scientist at Google Inc., Santa Barbara

12. Colin Parker (Ph.D. Princeton, 2011), Assistant Professor of Physics, Georgia Institute of Technology, starting in 2016
13. Haim Beidenkopf (Postdoc 2009-2012) Associate Professor of Physics, Weizmann Institute, Israel
14. Jungpil Seo (Postdoc 2009-2013) Assistant Professor of Physics, Daegu Gyeongbuk Institute of Science & Technology (DGIST), Republic of Korea
15. Pegor Aynajian (Postdoc 2010-2013) Associate Professor at Binghamton University, New York
16. Eduardo Higino da Silva Neto (Ph.D. Princeton, 2012) Assistant Professor of Physics, Yale University
17. Brian B. Zhou (Ph.D. Princeton, 2014) Assistant Professor of Physics, Boston College
18. Stevan Nadj-Perge (Postdoc 2012-2014), Associate Professor of Applied Physics, California Institute of Technology
19. Ilya K. Drozdov (Ph.D. Princeton, 2015), Postdoctoral Fellow, Brookhaven National Laboratory; start as Research Scientist at Google Inc., Santa Barbara
20. András Gyenis (Ph.D. Princeton, 2016), Assistant Professor of Physics, University of Colorado, Boulder (starting August 2021)
21. Hiroyuki Inoue (Postdoc 2014-2017), Postdoctoral Researcher, Weizmann Institute, Israel
22. Ben Feldman (Postdoc 2013-2017), Assistant Professor of Physics, Stanford University
23. Sangjun Jeon (Postdoc and Lab Manager, 2013-2018), Assistant Professor of Physics, Chung-Ang University, Republic of Korea
24. Xintong Li (Visiting Student Research Collaborator, 2015-2016), Associate Professor, Chinese Academy of Sciences
25. Mallika Randeria (Ph.D. Princeton, 2019), Research scientist MIT Lincoln Lab
26. Yonglong Xie (Ph.D. Princeton, 2019), Assistant Professor of Physics, Rice University.
27. Berthold Jäck (Postdoc 2016-2020), Assistant Professor of Physics, Hong Kong Univ. of Science & Tech (HKUST)
28. Hao Ding (Postdoc 2016-2021), Assistant Professor, Chongqing University
29. Dillon Wong (Postdoc 2017-2023), Data Scientist, McKesson Corporation
30. Myungchul Oh (Postdoc 2018-2023), Assistant Professor, Department of Semiconductor Engineering, POSTECH, Korea
31. Gelareh Farahi (Ph.D. Princeton, 2023), Display Module Engineer, Apple, Inc.
32. Kevin Nuckolls (Ph.D. Princeton, 2023) Pappalardo Postdoctoral Fellow, MIT
33. Yuwen Hu (Ph.D. Princeton, 2023) Postdoctoral researcher, Stanford
34. Xiaomeng Liu (Postdoc 2019-2023) Assistant Professor, Cornell
35. Cheng-Li Chiu (Ph.D. Princeton, 2024) Trading Analyst, Five Dimensions Energy

Updated February 27, 2025.