Arvind **Murugan**

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Appointments

Associate Professor — *University of Chicago*
Physics + James Franck Institute — *2023 -*

Assistant Professor — *University of Chicago*
Physics + James Franck Institute — *2015 - 2023*

Postdoctoral fellow — *Harvard University*
Applied Math (Michael Brenner group) — *2012 - 2015*

Visiting researcher — *Rockefeller University*
Stanislas Leibler group — *2009 - 2012*

Member — *Institute for Advanced Studies*
Simons Center for Systems Biology — *2009 - 2012*

Education

Princeton University — *Princeton, NJ*
Ph.D in Physics — *09/2004 - 07/2009*

- Thesis: Gauge-gravity duality with renormalization group flow and reduced supersymmetry
- Advisor: Igor R. Klebanov

California Institute of Technology — *Pasadena, CA*
B.S. in Mathematics w/ honors — *09/2000 - 06/2004*

- Advisor: Anton Kapustin

Awards

2025 **International Prize in Biophysics**, Tel Aviv
2023 **National Science Foundation CAREER Award**, NSF
2017 **Simons Investigator**, Simons Foundation
2010 **Addie and Harold Broitman Member in Biology**, Institute for Advanced Study
2004 **Princeton University Graduate Centennial Fellowship**, Princeton University

Service

2023 - 28 **Deputy Director**, U Chicago Center for Living Systems, NSF Physics Frontier Center — *Chicago, IL*
2026 **Organizer**, KITP summer workshop — *Santa Barbara, CA*
2025 - 27 **Chair line**, Gordon Conference Stochastic Physics in Biology — *Ventura, CA*
2024 - 25 **Chair line**, APS Delbruck prize committee
2025 **Planning committee**, National Academies Workshop on Frontiers of Living Materials
2025 **Panelist**, NSF Panel Review — *Alexandria, VA*
2025 **Site Visit Panel**, NSF Panel Review — *Alexandria, VA*
2024 **Organizer**, Aspen Institute for Physics, Winter workshop — *Aspen, CO*
2024 **Panelist**, NSF Panel Review — *Alexandria, VA*
2024 **Selection committee**, New IBD chair, UChicago — *Chicago, IL*
2022 - **Reviewing Editor**, eLife
2018 - 21 **Program committee**, Annual q-Bio meeting
2017 - 23 **Organizer**, APS March meeting sessions

Teaching

Ph 490	**Principles of Biological Physics**	*Fall 2015*
Ph 330	**Mathematical Methods for Physicists**	*Fall 2016*
Ph 490	**Principles of Biological Physics**	*Fall 2017*
Ph 330	**Mathematical Methods for Physicists**	*Fall 2017*
Ph 255	**Biological Physics**	*Spring 2018*
Ph 330	**Mathematical Methods for Physicists**	*Winter 2019*
Ph 121	**General Physics**	*Fall 2019*
Ph 330	**Mathematical Methods for Physicists**	*Winter 2020*
Ph 121	**General Physics**	*Fall 2020*
Ph 121	**General Physics**	*Fall 2021*
Ph 490	**Biological Physics**	*Fall 2022*
Ph 121	**General Physics**	*Fall 2023*
Ph 255	**Biological Physics**	*Winter 2023*
Ph 121	**General Physics**	*Fall 2024*
Ph 490	**Biological Physics**	*Winter 2024*

Support

2023 - 28 **National Institute of Health**, R35 award - PI

2023 - 27 **National Science Foundation**, Physics of Living Systems - PI

2023 - 27 **National Science Foundation**, CAREER award - PI

2023 - 28 **National Science Foundation**, Physics Frontier Center (Center for Living Systems) - Deputy Director

2023 - 24 **Chan Zuckerberg Initiative**, Theory Initiative - PI

2024 - 29 **National Science Foundation + Simons**, National Instit. for Theory and Math in Biology - Sr. Personnel

2023 - 27 **Sloan Foundation**, Matter-to-life - Co-PI

2022 - 27 **Moore Foundation**, Matter-to-life - Co-PI

2020 - 23 **National Science Foundation**, UChicago Materials Research Science and Engineering Center - Sr. Personnel

2017 - 23 **Simons Foundation**, Simons Investigator, MMLS - PI

Trainees

Postdocs

2020 -	**Riccardo Ravasio**	*Yen Fellow*
2019 -	**Martin Falk**	*Schmidt Futures Fellow*
2023 -	**Yoshiya Matsubara**	*Origins Initiative*
2024 -	**Mason Rouches**	*CLS Postdoctoral Fellow*
2023 - 24	**Maryn Carlson**, Currently: NITMB fellow	
2018 - 23	**Kabir Husain**, Currently: Faculty, Physics, University College London (2024)	*James McDonnell Fellow*
2017 - 19	**Zhiyue Lu**, Currently: Faculty, Chemistry, UNC Chapel Hill (2024)	

Graduate students

2025 -	**Ruby Wen**	
2024 -	**Rio Ondo**	*PME*
2024 -	**Kristina Trifonova**	*NSF GRFP*
2023 -	**Darren Liu**	
2022 -	**Milena Chakraverti-Wuerthwein**	*Hertz Fellow*
2022 -	**LaNijah Flagg**	
2020 -	**Christopher Russo**	
2018 - 25	**Eric Rouviere**, Currently: Postdoc, JHU (2025)	
2020 - 24	**Rudy Mendez Reina**	
2017 - 22	**Vedant Sachdeva**, Currently: Evozyne (biotech startup) (2023)	*Harper Dissertation Fellow*
2016 - 21	**Jackson O'Brien**, Currently: Lincoln Park Capital (biotech VC) (2023)	
2016 - 21	**Weerapat Pittayakanchit**, Currently: Krungthai Bank, Thailand (2023)	
2018 - 20	**Chukowunso Arinze**, Currently: Kaoshi (founder) (2022)	

2016 - 19 **Menachem Stern,** Currently: Faculty, AMOLF (2024) *APS GSNP award, Bloomenthal prize*

Undergraduates

HuiYi Mei	*2025 - present*
Aidan Etterer	*2024 - present*
Michele Peruzzo	*2022 - present*
Leon Zhou	*2022 - present*
Sumana Turimella	*2022 - 2024*
Sedona Kessler, Now: Undergrad, Harvard	*2023 - 2024*
Shiv Seshan, Now: Grad Student, Caltech (2025)	*2023 - 2024*
Finn Roach	*2021 - 2022*
Sophia Smith, Now: Grad Student, UT Austin Applied Math (2022)	*2020 - 2021*
Sophia Chiang, Now:	*2020 - 2021*
Viraaj Jayaram, Now: Grad Student, Yale Physics (2022)	*2017 - 2019*
Leron Perez, Now: Grad Student, Stanford (2022)	*2018 - 2019*
Jon Kutasov, Now: Optiver (fintech) (2021)	*2019 - 2019*
Amber Bourdier, Now: ESILV, Paris (2019)	*2017 - 2018*
Ryan Thiermann, Now: Grad Student, UC San Diego Physics (2022)	*2015 - 2017*
Weishun Zhong, Now: Grad Student, MIT Physics (2022)	*2016 - 2017*
Alexandra Carruthers Ferrero, Now: Grad Student, Univ Puerto Rico (2018)	*2016 - 2016*

Publications

Articles

1. Crocker, K., Skwara, A., Kannan, R., Murugan, A. & Kuehn, S. Microbial functional guilds respond cohesively to rapidly fluctuating environments. *bioRxiv,* 2025.01. 30.635766 (2025).
2. Falk, M. J., Strupp, A. T., Scellier, B. & Murugan, A. Temporal Contrastive Learning through implicit non-equilibrium memory. *Nature Communications* **16,** 2163 (2025).
3. Chalk, C., Buse, S., Shrinivas, K., Murugan, A. & Winfree, E. *Learning and Inference in a Lattice Model of Multicomponent Condensates* 5: 1–5: 24 DNA 30 (Schloss Dagstuhl–Leibniz-Zentrum für Informatik, 2024).
4. Evans, C. G., O'Brien, J., Winfree, E. & Murugan, A. Pattern recognition in the nucleation kinetics of non-equilibrium self-assembly. *Nature* **625,** 500–507 (2024).
5. Falk, M. J., Roach, F. D., Gilpin, W. & Murugan, A. Curiosity-driven search for novel nonequilibrium behaviors. *Physical Review Research* **6,** 033052 (2024).
6. Floyd, C., Dinner, A. R., Murugan, A. & Vaikuntanathan, S. Limits on the computational expressivity of non-equilibrium biophysical processes. *arXiv preprint arXiv:2409.05827* (2024).
7. Husain, K., Sachdeva, V., Ravasio, R., Peruzzo, M., Liu, W., Good, B. H. & Murugan, A. Direct and indirect selection in a proofreading polymerase. *bioRxiv* (2024).
8. Jaeger, H. M., Murugan, A. & Nagel, S. R. *Training physical matter to matter* **34,** 6695–6701 (Royal Society of Chemistry, 2024).
9. Mandal, R., Huang, R., Fruchart, M., Moerman, P. G., Vaikuntanathan, S., Murugan, A. & Vitelli, V. Learning dynamical behaviors in physical systems. *arXiv preprint arXiv:2406.07856* (2024).
10. Narla, A., Hwa, T. & Murugan, A. Dynamic coexistence driven by physiological transitions in microbial communities. *bioRxiv,* 2024–01 (2024).
11. Ravasio, R., Husain, K., Evans, C. G., Phillips, R., Ribezzi, M., Szostak, J. W. & Murugan, A. A minimal scenario for the origin of non-equilibrium order. *arXiv preprint arXiv:2405.10911* (2024).
12. Russo, C. J., Husain, K. & Murugan, A. *Soft Modes as a Predictive Framework for Low-Dimensional Biological Systems Across Scales* (Annual Reviews, 2024).
13. Arinze, C., Stern, M., Nagel, S. R. & Murugan, A. Learning to self-fold at a bifurcation. *Physical Review E* **107,** 025001 (2023).
14. Devany, J., Falk, M. J., Holt, L. J., Murugan, A. & Gardel, M. L. Epithelial tissue confinement inhibits cell growth and leads to volume-reducing divisions. *Developmental cell* **58,** 1462–1476. e8 (2023).
15. Falk, M., Strupp, A., Scellier, B. & Murugan, A. Contrastive learning through non-equilibrium memory. *arXiv preprint arXiv:2312.17723* (2023).
16. Falk, M. J., Wu, J., Matthews, A., Sachdeva, V., Pashine, N., Gardel, M. L., Nagel, S. R. & Murugan, A. Learning to learn by using nonequilibrium training protocols for adaptable materials. *Proceedings of the National Academy of Sciences* **120,** e2219558120 (2023).
17. Goyal, A., Flamholz, A. I., Petroff, A. P. & Murugan, A. Closed ecosystems extract energy through self-organized nutrient cycles. *arXiv preprint arXiv:2305.19102* (2023).

18. Stern, M. & Murugan, A. Learning without neurons in physical systems. *Annual Review of Condensed Matter Physics* **14,** 417–441 (2023).
19. Apte, A., Marwaha, K. & Murugan, A. Non-Convex Optimization by Hamiltonian Alternation. *arXiv preprint arXiv:2206.14072* (2022).
20. Falk, M. J., Roach, F., Gilpin, W. & Murugan, A. Curiosity search for non-equilibrium behaviors in a dynamically learned order parameter space. *arXiv preprint arXiv:2211.02589* (2022).
21. Schaffter, S. W., Chen, K.-L., O'Brien, J., Noble, M., Murugan, A. & Schulman, R. Standardized excitable elements for scalable engineering of far-from-equilibrium chemical networks. *Nature Chemistry* **14,** 1224–1232 (2022).
22. Su, C. J., Murugan, A., Linton, J. M., Yeluri, A., Bois, J., Klumpe, H., Langley, M. A., Antebi, Y. E. & Elowitz, M. B. Ligand-receptor promiscuity enables cellular addressing. *Cell systems* **13,** 408–425 (2022).
23. Falk, M. J., Alizadehyazdi, V., Jaeger, H. & Murugan, A. Learning to control active matter. *Physical Review Research* **3,** 033291 (2021).
24. Murugan, A., Husain, K., Rust, M. J., Hepler, C., Bass, J., Pietsch, J. M., Swain, P. S., Jena, S. G., Toettcher, J. E., Chakraborty, A. K., *et al.* Roadmap on biology in time varying environments. *Physical biology* **18,** 041502 (2021).
25. Son, M., Wang, A. G., Tu, H.-L., Metzig, M. O., Patel, P., Husain, K., Lin, J., Murugan, A., Hoffmann, A. & Tay, S. NF-κB responds to absolute differences in cytokine concentrations. *Science signaling* **14,** eaaz4382 (2021).
26. Son, M., Wang, A. G., Tu, H.-L., Metzig, M. O., Patel, P., Husain, K., Lin, J., Murugan, A., Hoffmann, A. & Tay, S. NF-κB responds to absolute differences in cytokine concentrations. *Science Signaling* **14,** eaaz4382 (2021).
27. Galstyan, V., Husain, K., Xiao, F., Murugan, A. & Phillips, R. Proofreading through spatial gradients. *Elife* **9,** e60415 (2020).
28. Husain, K. & Murugan, A. Physical constraints on epistasis. *Molecular Biology and Evolution* **37,** 2865–2874 (2020).
29. Sachdeva, V., Husain, K., Sheng, J., Wang, S. & Murugan, A. Tuning environmental timescales to evolve and maintain generalists. *Proceedings of the National Academy of Sciences* **117,** 12693–12699 (2020).
30. Stern, M., Arinze, C., Perez, L., Palmer, S. E. & Murugan, A. Supervised learning through physical changes in a mechanical system. *Proceedings of the National Academy of Sciences* **117,** 14843–14850 (2020).
31. Stern, M., Pinson, M. B. & Murugan, A. Continual learning of multiple memories in mechanical networks. *Physical Review X* **10,** 031044 (2020).
32. Zhong, W., Lu, Z., Schwab, D. J. & Murugan, A. Nonequilibrium statistical mechanics of continuous attractors. *Neural Computation* **32,** 1033–1068 (2020).
33. Husain, K., Pittayakanchit, W., Pattanayak, G., Rust, M. J. & Murugan, A. Kalman-like Self-Tuned sensitivity in biophysical sensing. *Cell systems* **9,** 459–465 (2019).
34. Murugan, A. & Jaeger, H. M. Bioinspired nonequilibrium search for novel materials. *MRS Bulletin* **44,** 96–105 (2019).
35. O'Brien, J. & Murugan, A. Temporal pattern recognition through analog molecular computation. *ACS Synthetic Biology* **8,** 826–832 (2019).
36. Chew, J., Leypunskiy, E., Lin, J., Murugan, A. & Rust, M. J. High protein copy number is required to suppress stochasticity in the cyanobacterial circadian clock. *Nature communications* **9,** 3004 (2018).
37. Pittayakanchit, W., Lu, Z., Chew, J., Rust, M. J. & Murugan, A. Biophysical clocks face a trade-off between internal and external noise resistance. *Elife* **7,** e37624 (2018).
38. Stern, M., Jayaram, V. & Murugan, A. Shaping the topology of folding pathways in mechanical systems. *Nature communications* **9,** 4303 (2018).
39. Thiermann, R., Sweeney, A. & Murugan, A. Information content of downwelling skylight for non-imaging visual systems. *bioRxiv,* 408989 (2018).
40. Murugan, A. & Vaikuntanathan, S. Topologically protected modes in non-equilibrium stochastic systems. *Nature communications* **8,** 13881 (2017).
41. Pinson, M. B., Stern, M., Carruthers Ferrero, A., Witten, T. A., Chen, E. & Murugan, A. Self-folding origami at any energy scale. *Nature communications* **8,** 15477 (2017).
42. Stern, M., Pinson, M. B. & Murugan, A. The complexity of folding self-folding origami. *Physical Review X* **7,** 041070 (2017).
43. Zhong, W., Schwab, D. J. & Murugan, A. Associative pattern recognition through macro-molecular self-assembly. *Journal of Statistical Physics* **167,** 806–826 (2017).
44. Huntley, M. H., Murugan, A. & Brenner, M. P. Information capacity of specific interactions. *Proceedings of the National Academy of Sciences* **113,** 5841–5846 (2016).
45. Murugan, A. Renormalization group flows in gauge-gravity duality. *arXiv preprint arXiv:1610.03166* (2016).
46. Murugan, A. & Vaikuntanathan, S. Biological implications of dynamical phases in non-equilibrium networks. *Journal of Statistical Physics* **162,** 1183–1202 (2016).
47. Zwicker, D., Murugan, A. & Brenner, M. P. Receptor arrays optimized for natural odor statistics. *Proceedings of the National Academy of Sciences* **113,** 5570–5575 (2016).
48. Murugan, A., Zeravcic, Z., Brenner, M. P. & Leibler, S. Multifarious assembly mixtures: Systems allowing retrieval of diverse stored structures. *Proceedings of the National Academy of Sciences* **112,** 54–59 (2015).
49. Murugan, A., Zou, J. & Brenner, M. P. Undesired usage and the robust self-assembly of heterogeneous structures. *Nature communications* **6,** 6203 (2015).
50. Murugan, A., Huse, D. A. & Leibler, S. Discriminatory proofreading regimes in nonequilibrium systems. *Physical Review X* **4,** 021016 (2014).
51. Murugan, A., Huse, D. A. & Leibler, S. Speed, dissipation, and error in kinetic proofreading. *Proceedings of the National Academy of Sciences* **109,** 12034–12039 (2012).
52. Klebanov, I. R., Klose, T. & Murugan, A. AdS4/CFT3 squashed, stretched and warped. *Journal of High Energy Physics* **2009,** 140 (2009).
53. Klebanov, I. R., Kutasov, D. & Murugan, A. Entanglement as a probe of confinement. *Nuclear physics B* **796,** 274–293 (2008).

54. Klebanov, I., Murugan, A., Rodriguez-Gomez, D. & Ward, J. Goldstone bosons and global strings in a warped resolved conifold. *Journal of High Energy Physics* **2008,** 090 (2008).
55. Klebanov, I. R. & Murugan, A. Gauge/gravity duality and warped resolved conifold. *Journal of High Energy Physics* **2007,** 042 (2007).
56. Baumann, D., Dymarsky, A., Klebanov, I. R., Maldacena, J., McAllister, L. & Murugan, A. On D3-brane potentials in compactifications with fluxes and wrapped D-branes. *Journal of High Energy Physics* **2006,** 031 (2006).
57. Kapustin, A. & Murugan, A. Fatgraph expansion for noncritical superstrings. *arXiv preprint hep-th/0404238* (2004).

Invited talks

Jan 25	**UC Berkeley**, Annual Berkeley Stat Mech Meeting	*Berkeley, CA*
Jan 25	**National Institute for Theory and Math in Biology**, Biological systems that learn	*Chicago, IL*
Nov 24	**Cornell** , Soft Matter Hub	*Zoom*
Aug 24	**Aspen Summer Workshop Data in Biology**, Biological Data Analysis	*Aspen, CO*
Jul 24	**University of Tokyo**, Workshop on Frontiers in Biophysics	*Tokyo, Japan*
Jun 24	**IUPAB congress 2024**, Theory in Biology symposium	*Kyoto, Japan*
Jun 24	**Gordon Research Conference**, Systems Chemistry	*Portland, ME*
Jun 24	**University of Pennsylvania** , Center for Soft and Living Matter kickoff	*Philadelphia, PA*
May 24	**MIT**, Applied Math Seminar	*Cambridge, MA*
Apr 24	**1st Solvay conference in Biology**, The organisation and dynamics of biological computation	*Brussels, Belgium*
Apr 24	**Simons Foundation**, NITMB Annual Meeting	*New York, NY*
Mar 24	**APS March meeting**, Invited talk	*Minneapolis, MN*
Jan 24	**Aspen Institute for Physics**, Computation in Physical systems	*Aspen, CO*
Oct 23	**29th Solvay conference on Physics**, Structure and Dynamics of Disordered Systems	*Brussels, Belgium*
Sep 23	**American Academy of Arts and Sciences**, Life in the Universe II	*Boston, MA*
Sep 23	**University of California, Merced (Remote)**, Physics colloquium	*Merced, CA*
Jul 23	**University of Michigan**, ICAM Complex Mechanical Metamaterials workshop	*Ann Arbor, MI*
Jun 23	**Gordon Conference on Molecular Mechanisms of Evolution**	*Stonehill College, MA*
Jun 23	**Northwestern University**, qBio Symposium	*Chicago, IL*
Mar 23	**APS March meeting**, Statistical physics Tutorial	*Las Vegas, NV*
Mar 23	**NYU**, Physics colloquium	*NYC, NY*
Feb 23	**Harvard Medical School**, Theory lunch	*Boston, MA*
Jan 23	**Gordon Research Conference**, Stochastic Processes in Biology	*Ventura, CA*
Nov 22	**AMOLF**, Physics Colloquium	*Amsterdam, NL*
Nov 22	**AMOLF**, Workshop on Information Processing	*Amsterdam, NL*
Nov 22	**TU Eindhoven**, Physics/Chemistry Colloquium	*Eindhoven, NL*
Oct 22	**Stanford**, Coherent Network Computing	*Palo Alto, CA*
Sep 22	**Cargese Summer School**, Summer school	*Corsica, France*
May 22	**Simons Center for Geometry & Physics**, Geometry, Topology, Symmetry in Soft & Living Matter	*Stony Brook, NY*
May 22	**Johns Hopkins**, Biophysics seminar	*Baltimore, MD*
Apr 22	**Harvard University**, Widely Applied Mathematics	*Cambridge, MA*
Apr 22	**Illinois Institute of Technology**	*Chicago, IL*
Mar 22	**APS March Meeting**, Invited talk	*Chicago, IL*
Sep 21	**University of Michigan**, Physics seminar	*Ann Arbor, MI*
May 21	**Cold Spring Harbor (remote)**	*Cold Spring Harbor, NY*
May 21	**University of Amsterdam (remote)**	*Amsterdam, NL*
Apr 21	**Biological Physics/Physical Biology series (Virtual)**	*Zoom*
Jan 21	**qEvo 2021**	*Zoom*
Dec 20	**Max Planck Institute (remote)**	*Gottingen, Germany*
Nov 20	**Imperial College**, Physics of life series	*London, UK*
Jun 20	**Tel Aviv University**, Workshop on Pathways, Sequence and Memory	*Tel Aviv, Israel*
Feb 20	**Banff International Research Station**, Workshop on gene regulation	*Banff, Canada*
Jan 20	**Massachusetts Institute of Technology**, Physics seminar	*Cambridge, MA*
Jan 20	**EPFL**, CECAM workshop	*Lausanne, Switzerland*
Oct 19	**University of California, Los Angeles**, Physics seminar	*Los Angeles, CA*
Sep 19	**National Science Foundation**, MRSEC Directors meeting	*Alexandria, VA*
Sep 19	**University of Pennsylvania**, Physics seminar	*Philadelphia, PA*
Jul 19	**Aspen Center for Physics**, Information processing in cells	*Aspen, CO*
Jun 19	**Frontiers of Biophysics**	*Paros, Greece*
Mar 19	**Chan-Zuckerberg Biohub**, Theory in Biology day	*San Francisco, CA*

Jan 19	**Gordon Research Conference**, Stochastic Physics and Biology	*Ventura, CA*
Nov 18	**University of Illinois**, Physics seminar	*Urbana-Champaign, IL*
Oct 18	**Peking University**, Center for Quantitative Biology	*Beijing, China*
Oct 18	**DNA 24**, Plenary Talk	*Dajin, China*
Oct 18	**Penn State**, Physics seminar	*College Station, PA*
Apr 18	**Emory University**, Physics Colloquium	*Atlanta, GA*
Apr 18	**Simons Foundation**, Theory in Biology conference	*New York, NY*
Apr 18	**Rice University**, Physics seminar	*Houston, TX*
Mar 18	**APS March Meeting**, Invited talk	*Los Angeles, CA*
Feb 18	**KITP**, Memories workshop	*Santa Barbara, CA*
Nov 17	**Princeton Center for Theoretical Science**, Workshop on frustration	*Princeton, NJ*
Oct 17	**MIT**, Physics seminar	*Cambridge, MA*
Oct 17	**University of Texas Southwestern**, Systems Biology Seminar	*Dallas, TX*
Sep 17	**Washington University in St. Louis**, Physics seminar	*St Louis, MO*
Jul 17	**QBio workshop**	*New Brunswick, NJ*
May 17	**Los Alamos National Lab**, CNLS Annual workshop	*Santa Fe, NM*
Mar 17	**Harvard University**, Widely Applied Math seminar	*Cambridge, MA*
Jan 17	**Northwestern University**, Mechanical Engineering,	*Chicago, IL*
May 16	**Harvard University**, Workshop on Aging and Failure in biology	*Cambridge, MA*
Apr 16	**Foundations of Nanoscience (FNANO)**, Invited speaker	*Snowbird, UT*
Mar 16	**University of Illinois Urbana-Champaign**, Urbana cond-mat Symposium	*Urbana, IL*
Sep 15	**Santa Fe Institute**, Kinetic Networks workshop	*Santa Fe, NM*
Apr 15	**Rockefeller University**, Center for Studies in Physics and Biology	*New York, NY*
Mar 15	**University of Colorado**, Physics Colloquium	*Boulder, CO*
Mar 15	**University of Colorado**, Physics seminar	*Boulder, CO*
Mar 15	**APS March Meeting**, Invited Talk	*San Antonio, TX*
Mar 15	**University of Massachusetts**, Physics seminar	*Amherst, MA*
Feb 15	**University of San Diego**, Physics seminar	*San Diego, CA*
Feb 15	**MIT**, Physics seminar	*Cambridge, MA*
Feb 15	**Aspen Institute for**, Unified Concepts in Glass Physics VI,	*Aspen, CO*
Jan 15	**Cornell**, LASSP Applied Physics seminar	*Ithaca, NY*
Jan 15	**University of Chicago**, James Franck Institute,	*Chicago, IL*
Dec 14	**Princeton University**, Department of Chemistry,	*Princeton, NJ*
Jul 14	**Universite Joseph Fourier**	*Grenoble, France*
Jun 14	**University of Nice**, Laboratory of Condensed Matter Physics seminar	*Nice, France*
Jun 14	**ESPCI**	*Paris, France*
Jun 14	**Brandeis**, Physics Department	*Waltham, MA*
May 14	**University of Chicago**, Computations in Science Seminar	*Chicago, IL*
Apr 14	**University of Maryland**, Institute for Physical Science and Technology,	*College Park, MD*
Jan 14	**Northwestern**, Applied Math Colloquium	*Evanston, IL*
Dec 13	**Boston Physical Biology Hangout**	*Cambridge, MA*
Nov 13	**Harvard**, Bauer Forum	*Cambridge, MA*
Dec 08	**Perimeter Institute for Theoretical Physics**, Young Researchers Conference	*Waterloo, ON*
May 08	**Institute for Nuclear Theory**, String Theory Methods in the Real World,	*Seattle, WA*
Apr 08	**Princeton University**, High-energy theory group seminar	*Princeton, NJ*
Apr 08	**Cornell University**, High-energy theory group seminar	*Ithaca, NY*
Nov 07	**University of Chicago**, High-energy theory group seminar	*Chicago, IL*