Cohen Itai — Curriculum Vitae

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Education:

University of Chicago, PhD Physics, Singularity formation in fluid interfaces. 2001
University of California at Los Angeles, **BS** Physics, Summa Cum Laude 1995

Appointments:

2017–**Present** Professor in the Department of Physics and Laboratory of Atomic and Solid State Physics (LASSP) at Cornell.
2011–**2017** Associate Professor in the Department of Physics and Laboratory of Atomic and Solid State Physics (LASSP) at Cornell.
2005–**2011** Assistant Professor in the Department of Physics and Laboratory of Atomic and Solid State Physics (LASSP) at Cornell.
2002–**2005** Postdoctoral Researcher in **Dr. David Weitz's lab** – Studying complex fluids including colloids and liquid crystals. Developing rheometry and imaging techniques for these studies.
1996–**2001** Graduate Research Assistant in **Dr. Sidney Nagel's lab** – Studied fluid dynamics and interface motion in two fluid systems.
1992–**1995** Undergraduate Research Assistant in **Dr. Daniel Kivelson's lab** – Discovered a new phase transition in triphenyl phosphite, a super cooled liquid.

Awards:

2022 Physics & Astronomy van der Waals Visiting Professor – Univ. of Amsterdam
2022 Kappa Delta Ann Doner Vaughn Award – highest research award bestowed by Orthopedic Research Society
2021 Rosi and Max Varon Visiting Professorship – Weizmann Institute
2020 Fellow of the American Physical Society
2013 Braginsky Grant – Weizmann Institute
2012 Feinberg Fellowship – Weizmann Institute
2011 NSF Career award
2010 Marilyn Emmons Williams Award – For promoting undergraduate research
2001 Graduating Students Lecture Prize – U. Chicago lecture competition
2000 MRSEC Poster Prize – Poster competition
1996 Gregor Wentzel – U. Chicago Physics graduate student teaching prize
1995 E. Lee Kinsey Outstanding Graduating Senior Award – Awarded to the top student graduating from the UCLA Physics Department
1995 Phi Beta Kappa – Scholarship given to five academically outstanding seniors
1994 UCLA Alumni Distinguished Scholar Award
1994–**1995 Barry M. Goldwater Scholar** – National scholarship selecting 200 students out of 1,200 students nominated by the faculties of universities nationwide
1994–**1995 Ella Okern** – Academic achievement scholarship
1993–**1994 Ballard** – Scholarship

Honor Societies:

1994 Phi Beta Kappa, Golden Key
1992 Alpha Lambda Delta, Phi Eta Sigma

Research Funding:

1. Cohen I. (PI), Using Confocal Rheometry to Investigate the Effect of Shear and Confinement on Colloidal Glasses. NSF-DMR 05/06 – 04/09 **$300,000**.
2. Cohen I. (PI), Using sheared colloidal suspensions to model atomic scale lubrication phenomena. PRF-AC 01/07 – 12/09 **$90,000**.
3. Cohen I. (PI), and Bonassar L, Mapping Shear Properties of Articular Cartilage Using Fast Confocal Microscopy. NIH-NIAMS 04/07 – 03/09 **$405,912** (Cohen support for one student **$203,000**).
4. Cohen I. (PI), Modeling Atomic and Nano Scale Lubrication Phenomena Using Sheared Colloidal Suspensions. NSF-CMMI 09/07-08/10 **$225,000**.
5. Cohen I. (PI), Investigating Droplet Breakup in Surfactant Systems P&G gift 09/09 **$200,000.**
6. Netravali A. N., Coats G. W., and Cohen I. (Co-PI), Development of Sustainable Routes to High Performance Organic Materials. NSF-MRSEC 05/07 – 04/08 Cohen support for one postdoc **$86,977**.
7. Archer L. A., Giannelis E., Sogah D., and Cohen I. (Co-PI), Nanoparticle-based Colloidal Fluids and Gels NSF-MRSEC. 05/07 – 04/08 Cohen support for one postdoc **$86,977**.
8. Archer L. A., Giannelis E., KAUST – Cornell Center for Research and Education. 06/08 – 05/10 Cohen support for student and postdoc **$356,748.**
9. Archer L. A., Giannelis E., KAUST – Cornell Center for Research and Education. 06/10 – 05/13 Cohen support for one postdoc **$267,561.**
10. Liddell C. (PI), Escobedo F., and Cohen I. (Co-PI), Self-Assembly of Non-Spherical Colloids. DOE 02/08 – 01/11 **$522,000** (Cohen support for one student **$174,000**).
11. Wang Z. J., Guckenheimer J., and Cohen I. (Co-PI), Insects in Free Flight: Experiments, Computations, and Mathemaical Analysis. NSF-SGER 09/08 – 08/10 **$200,000** (Cohen support for one student **$100,000**).
12. Wang Z. J. and Cohen I. (Co-PI), Flight Efficiency and Control in 12 Species of Drosophila and their Mutants. NSF-CBET 09/09 – 08/11 **$200,000** (Cohen support for one student **$100,000**).
13. Shuler M. (PI), Center on the Microenvironment and Metastasis NIH 09/09 – 07/10 (Cohen support for part of a student **$32,313**).
14. Van der Meulen M. (PI), Baker S., Williams R., Bonassar L., Cohen I. (Co-PI on extension) Role of Microstructure in Nano Mechanical Behavior of Bone. NIH 01/10 – 07/10 (Cohen support for part of a student **$36,500**).
15. Cohen I. (PI), Career: Using colloidal suspensions to investigate the role of particle dynamics in heteroepitaxy and melting. DMR 01/11 – 12/15 **$575,000**.
16. Liddell C. (PI), Escobedo F., and Cohen I. (Co-PI), Self-Assembly of Non-Spherical Colloids. DOE Renewal 02/08 – 01/12 **$722,000** (Cohen support for one student **$215,315**).
17. Shuler M. (PI), Center on the Microenvironment and Metastasis NIH 08/11 – 07/12 (Cohen support for part of a student **$28,528**).

18. Cohen I. (PI), Using confocal rheometry to investigate shear thickening suspensions. NSF-CBET 09/12-08/15 **$336,284**.
19. Santangelo C. (PI), Mechanical Meta-Materials form Self-Folding Polymer Sheets. NSF EFRI-ODISSEI 09/12-08/17 $**2,000,000** (Cohen support for one student **$500,000**)
20. Cohen I. (PI), and Bonassar L, Mapping Local Strains in Cartilage During Injurious Impact Loading. NIH-NIAMS 06/13 – 05/15 **$440,000** (Cohen support for one student **$220,000**).
21. Cohen I. (PI), and Guckenheimer J., Investigating Maneuverability, Stability and Control in Flapping Flight. DOD ARMY – ARO 08/01/13 – 07/31/14 **$75,000** Cohen support for one postdoc **$75,000**)
22. Cohen I. (PI), Investigating breakup of surfactant systems P&G gift 09/14 **$5,000.**
23. Liddell C. (PI), Escobedo F., and Cohen I. (Co-PI), Self-Assembly of Non-Spherical Colloids. DOE Renewal 09/14 – 08/15 **$300,000** (Cohen support for one student **$100,000**).
24. McEuen P., Cohen I. (Co-PI) Bowick M. and Nelson D., Origami and Kirigami Inspired Graphene Metamaterials. NSF DMREF 09/14-08/18 $**2,000,000 plus $200,000 supplement** (Cohen support for one student **$600,000**)
25. Cohen I. (PI), Brain EAGER: Using optogenetic techniques to elucidate flight control. NSF IOS 09/15-08/17 **$300,000**.
26. Cohen I. (PI) and Shepherd R., Engineering dynamic skin. DOD ARO 11/15-10/16 **$150,000** (Shared postdoc).
27. Cohen I. (PI) and Lavrentovich O., Simultaneous 3D director imaging and biaxial rheology of lyotropic chromonic liquid crystals. ACS PRF 09/16-08/18 **$110,000** (Cohen support for one year of a postdoc **$60,000**)
28. Cohen I. (PI), Protective coating design based on gradient mechanical properties. Corning 04/15-03/16 **$126,922**.
29. Cohen I. (PI) and Bonassar L., New paradigms for understanding shear behavior in articular cartilage. NSF CMMI 08/15-07/18 **$348,134** (Cohen support for half a postdoc **$174,067**).
30. Cohen I. (PI), Imaging inhomogeneous stress networks in colloidal glasses and gels. NSF CBET 07/15-06/18 **$351,819**.
31. Cohen I (PI), Imaging local stress anisotropy and determining its role in driving defect mobility in colloidal crystals. NSF DMR 05/15-04/18 **$500,000**.
32. Hines, M., Cornell Center for Materials Research (MRSEC) NSF DMR 09/11-08/17 **$18,359,999** (Cohen support 09/15-08/17 for one student **$200K)**
33. Fortier L., Bonassar L., Cohen I. NIH RO1 Mitoprotective Therapy for Treatment of Ankle PTOA 9/17-8/21 **$1,295,134** (Cohen support for one student per year)
34. Cohen I. (PI) Emergent Matter from Assembly of Micron-scale Atomic Origami Robots. ARO 07/18-08/22 $**2.2M**
35. Cohen I. (PI) Magnetic Handshake Materials. ARO 10/18 - 10-19 **$150,000**.
36. Das M., Bonassar L., Cohen I. NSF 09/19 – 09/22 **$200,000.**
37. Cohen I. (PI), McEuen P., Brenner M., NSF DMREF Digital Magnetic Handshake Materials, Structures, and Machines 09/19 – 08/23 $**1.75M.**
38. Wise F., Cornell Center for Materials Research (MRSEC) NSF DMR 09/17-08/23 **$23,234,000** (Cohen support for one student per year **$500K).**

39. Cohen I. (PI), Apsel A., Kres-Gazit H., Abbott N., NSF EFRI C3 SoRo Micron-scale Morphing Soft-Robots for Interfacing with Biological Systems. 11/19 – 10/23 $**2M.**
40. Cohen I., Bonassar L (PI) NSF, Microscale mechanics of TMJ Articular Cartilage 09/19 – 09/22 **$442,000.**
41. Cohen I. (PI), Sethna J., NSF CBET Using Bidirectional Shear Protocols to Determine Microstructural Changes Responsible for Thickening and De-thickening in Colloidal Suspensions 07/20-06/23 (**$479,513**).
42. Cohen I. (PI) NIH R01 Determining the Computational Principles Governing Neural Circuits Responsible for Feedback and Movement Control of D. Melanogaster Flight 02/20 -01/25 (**$1,676,938**).
43. McEuen P., Brenner M., and Cohen I. SLOAN Foundation: Self-Replicating and Auto-Catalytic Digital Magnetic Polymers 06/21 – 06/24 (**$1,500,000**)
44. Cohen I. (PI), McEuen P., Brenner M., NSF DMREF Digital Magnetic Handshake Materials, Structures, and Machines 09/21 – 08/23 (supplement **$60,000**)

Total: Cohen support~ **$16M + 8M Pending**

Courses Taught:

1. F05 Physics 112 Introductory Mechanics (Faculty TA)
2. S06 Physics 410/510 Advanced Lab
3. F06 Physics 341 Statistical Mechanics
4. S07 Physics 410/510 Advanced Lab
5. F07 Physics 341 Statistical Mechanics
6. S08 Physics 410/510 Advanced Lab
7. F08 Physics 341 Statistical Mechanics
8. S09 Physics 310 Intermediate Lab
9. F09 Physics 3327 Honors Advanced E&M
10. F10 Physics 3327 Honors Advanced E&M
11. S11 Physics 112 Introductory Mechanics (Faculty TA)
12. F11 Physics 3327 Honors Advanced E&M
13. S12 Physics 1112 Introductory Mechanics (Faculty TA)
14. S13 Physics 1112 Introductory Mechanics (Faculty TA)
15. F13 Physics 3341 Statistical Mechanics
16. S14 Physics 6510 Advanced Lab
17. F14 Physics 3341 Statistical Mechanics
18. S15 Physics 6510 Advanced Lab
19. F15 Physics 6510 Advanced Lab
20. F15 co-taught Chemistry 6030 Communication Bootcamp
21. S16 Physics 6510 Advanced Lab
22. F16 Physics 3327 Honors E&M
23. S17 Physics 7685 Special Topics: Finding your scientific voice
24. F17 Physics 1201 Why is the sky blue?
25. F18 Physics 1201 Why is the sky blue?
26. S19 Physics 7679 Finding Your Scientific Voice
27. F19 Physics 1201 Why is the sky blue?
28. F21 Physics 1201 Why is the sky blue?

29. S21 Physics 4510 Advanced Physics Lab
30. F22 Physics 1201 Why is the sky blue?

Departmental and College Service:

1. Faculty Search Committee
2. LASSP Colloquium Committee
3. Graduate Admissions Committee (Chair)
4. Graduate Admissions Committee
5. LASSP representative to the Library Committee
6. "Wise man" for incoming graduate students
7. Q, A, and B exam committees (~7 per year)
8. Undergraduate faculty advisor to undergraduate students (~7 per year)
9. Biophysics fellowship selection committee (2014)
10. Goldwater scholar selection committee (2015)
11. Faculty search committee (2015)
12. LASSP director search committee (2015)
13. Physics chair search committee (2015)
14. Physics colloquium committee (2015)
15. Physics colloquium committee (2016)
16. RAC committee (2016)
17. Faculty search committee (2016)
18. Departmental review committee
19. Library committee (2016 - Present)
20. RAC committee (2017 - 2019)
21. Red Team Review of Engineering Research Center grants (2018/19)
22. Promotion Committee (2021)
23. Committee for Equity Diversity Inclusion (2021 – Present)
24. Admissions Committee (2022, 2023)
25. Ad-Hoc Promotion Committee Arts College (2022)
26. Tenure committee Eric Dufresne (2022)

Outside Professional Activities:

1. Organize semiannual **New York Complex Matter Workshop** with Abe Stroock at Cornell, Mark Bowick, Jennifer Schwarz, Christina Marchetti at Syracuse University, and George Thurston at RIT. These workshops bring together researchers from universities and industry in the upstate NY area. The participating industrial and academic institutions include Corning, GE, Kodak, Syracuse University, University of Rochester, Rochester Institute of Technology, Clarkson, Colgate, and Cornell University, (2005 –2012)
2. 60^{th} birthday **celebration in honor of Sidney Nagel**, Chicago (2008)
3. Set up **collaboration with Harlem Children's Zone**. We are collaborating with middle school teachers at the HCZ to improve the science and math curriculum. This work is being done through the Cornell Center for Materials Research.
4. **Sciencenter Egg Drop**. Itai Cohen MCed the 2007, 2008, and 2009 events which brought together Eggcellent Scientists and Eggineers to center city Ithaca.
5. For their numerous other outreach activities my group has been recognized with the **CCMR 2008 and 2009 outreach star award**.

6. Co-organizer for CCMR Symposium on The Future of Biologically-inspired Materials: Fundamentals to Applications (2011)
7. **Finding your scientific voice:** In collaboration with professor of performing and media arts Melanie Dreyer-Lude, we developed a workshop to train students and postdocs to develop better science communication skills. Our workshop is broad in scope and aimed at developing skills necessary for communication with audiences with a variety of scientific backgrounds. We successfully ran a series of ~10 workshops that were very well received by the students. A video summary of the course can be found at: http://cohengroup.lassp.cornell.edu/media.php?show=34. We have run workshops at Cornell, SUNY Upstate, and one at the HHMI (2013 – Present)
8. **Chair of APS Forum on Outreach and Engaging the Public (FOEP)** Organized professional development workshops on science communication, brought the physics bus to the March meeting (2016-2018).
9. Co-organizer for CCMR Symposium on graphene origami technologies (2017)
10. Organizer ICTP-SAIFR/IFT-UNESP School on Disordered Elastic Systems Sao Paulo Brazil (2022)

Manuscript Referee:

1. Physical Review Letters (1997 – Present)
2. Physics of Fluids (1998 – Present)
3. Physical Review E (2000 – Present)
4. Journal of Fluid Mechanics (2006 – Present)
5. PNAS (2008 – Present)
6. Nature Physics (2010 – Present)
7. Journal of Experimental Biology (2010 – Present)
8. Langmuir (2010 – Present)
9. Journal of the Royal Society Interface (2012 – Present)
10. SoftMatter (2012 – Present)
11. Nature (2014 – Present)
12. Nature Materials (2014 – Present)
13. Nature Communications (2018 – Present)
14. Science (2018 – Present)
15. Science Advances (2019 – Present)
16. ACS Nano (2020 – Present)
17. Guest Editor PNAS (2021)
18. Advanced Materials (2022 – Present)

Grant Proposal Reviewer:

1. Petroleum Research Fund ACS (2005 – Present)
2. NSF Division of Materials Research (DMR,MPS,CBET) (2006 – Present)
3. U.S. Civilian Research and Development Foundation (2006 – Present)
4. Leaders Opportunity Fund, Canada (2008 – Present)
5. Israel Binational Foundation (2012 – Present)
6. Israel Science Foundation (2011 – Present)
7. DOE Energy and Basic Sciences (2013 – Present)
8. The Netherlands Organisation for Scientific Research (NWO)

9. NSF MRSEC site visit team (2018 – Present)
10. NIH Brain Initiative (2021 – Present)

Consultant:

1. Hydron Technologies (2004 – 2005)
2. Harrick Scientific (2007 – Present)
3. Procter and Gamble (2008 – Preshent)
4. PALL Corporation (2014 – Present)
5. Corning (2015 – Present)
6. Marvel TV (2015 – Present)
7. Applied Materials (2017 – Present)

Patents:

Itai Cohen, Sidney R. Nagel, Horacio Rilo, Milan Mrksich, "Encapsulating particles with coatings that conform to size and shape of the particles," U.S. Patent Number 6558665 (May 6, 2003).

James Pikul, Itai Cohen, Robert Shepherd, "Stretchable surfaces with programmable texture," U.S. Patent number 11077587 (August 3, 2021)

Theater and Dance Performances:

1. **Dance of Scales:** an interactive performance expressing concepts studied in the Cohen Lab. This dance piece was inspired by our research on the movement of particles at different length scales. The one hour performance took the audience through a series of vignettes that focused on topics ranging from the ways Brownian particles move (movement of the very, very small) to movement at the human scale. Lively demonstrations were woven into the dance, and the dancers became expressions and examples of the concepts. The show culminates with the Dance of Scales wherein the dance movements in each section are woven together into a cohesive performance.

   http://cohengroup.ccmr.cornell.edu/media.php?show=14Emergence

2. **Emergence:** Emergence is a result of the collaboration of physicist Dr. Itai Cohen, director and performing and media arts Melanie Dreyer-Lude, playwright and PhD student Aoise Stratford, PhD candidate in Science Communication Megan K. Halpern, and Artistic and Executive Director Max Evjen of Redshift Productions. The interactive performance centers on the concept of emergent phenomena and the research performed in the Cohen lab. Emergent phenomena is a term that describes the way complex systems and patterns arise out of a multiplicity of relatively simple interactions. The play was recently performed to sold-out audiences at the Schwartz theater in Ithaca.

Publications Books:

1. Itai Cohen and Melanie Dreyer-Lude, "Finding Your Research Voice: Story Telling and Theater Skills for Bringing Your Presentation to Life." Springer (2020)

Publications Journals:

1. Ha, Alice, Itai Cohen, Xiaolin Zhao, Michelle Lee, and Daniel Kivelson. "Supercooled liquids and polyamorphism." *The Journal of Physical Chemistry* 100, no. 1 (1996): 1-4.
2. Cohen, Itai, Alice Ha, Xiaolin Zhao, Michelle Lee, Thomas Fischer, M. Jane Strouse, and Daniel Kivelson. "A low-temperature amorphous phase in a fragile glass-forming substance." *The Journal of Physical Chemistry* 100, no. 20 (1996): 8518-8526.
3. Kivelson, Daniel, J. C. Pereda, K. Luu, M. Lee, H. Sakai, A. Ha, I. Cohen, and Gilles Tarjus. "Facts and speculation concerning low-temperature polymorphism in glass formers." In *ACS Symposium Series*, vol. 676, pp. 224-232. AMERICAN CHEMICAL SOCIETY, 1997.
4. Cohen, Itai, Michael P. Brenner, Jens Eggers, and Sidney R. Nagel. "Two fluid drop snap-off problem: Experiments and theory." *Physical Review Letters* 83, no. 6 (1999): 1147.
5. Cohen, Itai, and Sidney R. Nagel. "Testing for scaling behavior dependence on geometrical and fluid parameters in the two fluid drop snap-off problem." *Physics of Fluids (1994-present)* 13, no. 12 (2001): 3533-3541.
6. Cohen, Itai, Hui Li, James L. Hougland, Milan Mrksich, and Sidney R. Nagel. "Using selective withdrawal to coat microparticles." *Science* 292, no. 5515 (2001): 265-267.
7. Cohen, Itai, and Sidney R. Nagel. "Scaling at the selective withdrawal transition through a tube suspended above the fluid surface." *Physical review letters* 88, no. 7 (2002): 074501.
8. Doshi, Pankaj, Itai Cohen, Wendy W. Zhang, Michael Siegel, Peter Howell, Osman A. Basaran, and Sidney R. Nagel. "Persistence of memory in drop breakup: The breakdown of universality." *Science* 302, no. 5648 (2003): 1185-1188.
9. Cohen, Itai. "Scaling and transition structure dependence on the fluid viscosity ratio in the selective withdrawal transition." *Physical Review E* 70, no. 2 (2004): 026302.
10. Cohen, Itai, Thomas G. Mason, and David A. Weitz. "Shear-induced configurations of confined colloidal suspensions." *Physical review letters* 93, no. 4 (2004): 046001.
11. Schall, Peter, Itai Cohen, David A. Weitz, and Frans Spaepen. "Visualization of dislocation dynamics in colloidal crystals." *Science* 305, no. 5692 (2004): 1944-1948.
12. Schall, Peter, Itai Cohen, David A. Weitz, and Frans Spaepen. "Visualizing dislocation nucleation by indenting colloidal crystals." *Nature* 440, no. 7082 (2006): 319-323.
13. Schall, Peter, Itai Cohen, David A. Weitz, and Frans Spaepen. "Dynamics of dislocations in thin colloidal crystals." In *Nanomechanics of Materials and Structures*, pp. 255-261. Springer Netherlands, 2006.
14. Cohen, Itai, Benny Davidovitch, Andrew B. Schofield, Michael P. Brenner, and David A. Weitz. "Slip, yield, and bands in colloidal crystals under oscillatory shear." *Physical review letters* 97, no. 21 (2006): 215502.
15. Buckley, Mark R., Jason P. Gleghorn, Lawrence J. Bonassar, and Itai Cohen. "Mapping the depth dependence of shear properties in articular cartilage." *Journal of biomechanics* 41, no. 11 (2008): 2430-2437.

16. Gerbode, Sharon J., Stephanie H. Lee, Chekesha M. Liddell, and Itai Cohen. "Restricted dislocation motion in crystals of colloidal dimer particles." *Physical review letters* 101, no. 5 (2008): 058302.
17. Lee, Stephanie H., Sharon J. Gerbode, Bettina S. John, Angie K. Wolfgang, Fernando A. Escobedo, Itai Cohen, and Chekesha M. Liddell. "Synthesis and assembly of nonspherical hollow silica colloids under confinement."*Journal of Materials Chemistry* 18, no. 41 (2008): 4912-4916.
18. Berkenbusch, Marko Kleine, Itai Cohen, and Wendy W. Zhang. "Liquid interfaces in viscous straining flows: numerical studies of the selective withdrawal transition." *Journal of Fluid Mechanics* 613 (2008): 171-203.
19. Hayes, Keesha A., Mark R. Buckley, Itai Cohen, and Lynden A. Archer. "High resolution shear profile measurements in entangled polymers."*Physical review letters* 101, no. 21 (2008): 218301.
20. Ristroph, Leif, Gordon J. Berman, Attila J. Bergou, Z. Jane Wang, and Itai Cohen. "Automated hull reconstruction motion tracking (HRMT) applied to sideways maneuvers of free-flying insects." *Journal of Experimental Biology*212, no. 9 (2009): 1324-1335.
21. Michalek, Arthur J., Mark R. Buckley, Lawrence J. Bonassar, Itai Cohen, and James C. Iatridis. "Measurement of local strains in intervertebral disc anulus fibrosus tissue under dynamic shear: contributions of matrix fiber orientation and elastin content." *Journal of biomechanics* 42, no. 14 (2009): 2279-2285.
22. Savage, John R., Marco Caggioni, Patrick T. Spicer, and Itai Cohen. "Partial universality: pinch-off dynamics in fluids with smectic liquid crystalline order." *Soft Matter* 6, no. 5 (2010): 892-895.
23. Ganapathy, Rajesh, Mark R. Buckley, Sharon J. Gerbode, and Itai Cohen. "Direct measurements of island growth and step-edge barriers in colloidal epitaxy." *Science* 327, no. 5964 (2010): 445-448.
24. Ristroph, Leif, Attila J. Bergou, Gunnar Ristroph, Katherine Coumes, Gordon J. Berman, John Guckenheimer, Z. Jane Wang, and Itai Cohen. "Discovering the flight autostabilizer of fruit flies by inducing aerial stumbles."*Proceedings of the National Academy of Sciences* 107, no. 11 (2010): 4820-4824.
25. Buckley, Mark R., Attila J. Bergou, Jonathan Fouchard, Lawrence J. Bonassar, and Itai Cohen. "High-resolution spatial mapping of shear properties in cartilage." *Journal of biomechanics* 43, no. 4 (2010): 796-800.
26. Bergou, Attila J., Leif Ristroph, John Guckenheimer, Itai Cohen, and Z. Jane Wang. "Fruit flies modulate passive wing pitching to generate in-flight turns."*Physical review letters* 104, no. 14 (2010): 148101.
27. Hayes, Keesha A., Mark R. Buckley, Haibo Qi, Itai Cohen, and Lynden A. Archer. "Constitutive curve and velocity profile in entangled polymers during start-up of steady shear flow." *Macromolecules* 43, no. 9 (2010): 4412-4417.
28. Gerbode, Sharon J., Umang Agarwal, Desmond C. Ong, Chekesha M. Liddell, Fernando Escobedo, and Itai Cohen. "Glassy dislocation dynamics in 2D colloidal dimer crystals." *Physical review letters* 105, no. 7 (2010): 078301.
29. Gerbode, Sharon J., Desmond C. Ong, Chekesha M. Liddell, and Itai Cohen. "Dislocations and vacancies in two-dimensional mixed crystals of spheres and dimers." *Physical Review E* 82, no. 4 (2010): 041404.

30. Ristroph, Leif, Attila J. Bergou, John Guckenheimer, Z. Jane Wang, and Itai Cohen. "Paddling mode of forward flight in insects." *Physical review letters*106, no. 17 (2011): 178103.
31. Cheng, Xiang, Jonathan H. McCoy, Jacob N. Israelachvili, and Itai Cohen. "Imaging the microscopic structure of shear thinning and thickening colloidal suspensions." *Science* 333, no. 6047 (2011): 1276-1279.
32. Estroff, Lara A., and Itai Cohen. "Biomineralization: Micelles in a crystal."*Nature materials* 10 (2011): 810-811.
33. Porter, Daniel, John R. Savage, Itai Cohen, Patrick Spicer, and Marco Caggioni. "Temperature dependence of droplet breakup in 8CB and 5CB liquid crystals." *Physical Review E* 85, no. 4 (2012): 041701.
34. Cheng, Xiang, Xinliang Xu, Stuart A. Rice, Aaron R. Dinner, and Itai Cohen. "Assembly of vorticity-aligned hard-sphere colloidal strings in a simple shear flow." *Proceedings of the National Academy of Sciences* 109, no. 1 (2012): 63-67.
35. Chen, Tony, Mark Buckley, Itai Cohen, Lawrence Bonassar, and Hani A. Awad. "Insights into interstitial flow, shear stress, and mass transport effects on ECM heterogeneity in bioreactor-cultivated engineered cartilage hydrogels." *Biomechanics and modeling in mechanobiology* 11, no. 5 (2012): 689-702.
36. Chandler, Emily M., Bo Ri Seo, Joseph P. Califano, Roberto C. Andresen Eguiluz, Jason S. Lee, Christine J. Yoon, David T. Tims et al. "Implanted adipose progenitor cells as physicochemical regulators of breast cancer."*Proceedings of the National Academy of Sciences* 109, no. 25 (2012): 9786-9791.
37. Ristroph, Leif, Attila J. Bergou, Gordon J. Berman, John Guckenheimer, Z. Jane Wang, and Itai Cohen. "Dynamics, control, and stabilization of turning flight in fruit flies." In *Natural locomotion in fluids and on surfaces*, pp. 83-99. Springer New York, 2012.
38. Silverberg, Jesse L., Roslyn D. Noar, Michael S. Packer, Maria J. Harrison, Christopher L. Henley, Itai Cohen, and Sharon J. Gerbode. "3D imaging and mechanical modeling of helical buckling in Medicago truncatula plant roots." *Proceedings of the National Academy of Sciences* 109, no. 42 (2012): 16794-16799.
39. Silverberg, Jesse L., Sam Dillavou, Lawrence Bonassar, and Itai Cohen. "Anatomic variation of depth-dependent mechanical properties in neonatal bovine articular cartilage." *Journal of Orthopaedic Research* 31, no. 5 (2013): 686-691.
40. Buckley, Mark R., Lawrence J. Bonassar, and Itai Cohen. "Localization of viscous behavior and shear energy dissipation in articular cartilage under dynamic shear loading." *Journal of biomechanical engineering* 135, no. 3 (2013): 031002.
41. Savage, John R., Stefan F. Hopp, Rajesh Ganapathy, Sharon J. Gerbode, Andreas Heuer, and Itai Cohen. "Entropy-driven crystal formation on highly strained substrates." *Proceedings of the National Academy of Sciences* 110, no. 23 (2013): 9301-9304.
42. Silverberg, Jesse L., Matthew Bierbaum, James P. Sethna, and Itai Cohen. "Collective motion of humans in mosh and circle pits at heavy metal concerts." *Physical review letters* 110, no. 22 (2013): 228701.
43. Sevenler, Derin, Mark R. Buckley, Grace Kim, Marjolein CH van der Meulen, Itai Cohen, and Lawrence J. Bonassar. "Spatial periodicity in growth plate shear

mechanical properties is disrupted by vitamin D deficiency." *Journal of biomechanics* 46, no. 10 (2013): 1597-1603.
44. Ristroph, Leif, Gunnar Ristroph, Svetlana Morozova, Attila J. Bergou, Song Chang, John Guckenheimer, Z. Jane Wang, and Itai Cohen. "Active and passive stabilization of body pitch in insect flight." *Journal of The Royal Society Interface* 10, no. 85 (2013): 20130237.
45. Leahy, Brian D., Xiang Cheng, Desmond C. Ong, Chekesha Liddell-Watson, and Itai Cohen. "Enhancing rotational diffusion using oscillatory shear."*Physical review letters* 110, no. 22 (2013): 228301.
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114. Lwin, Pancy, Andrew Sindermann, Leo Sutter, Thomas Wyse Jackson, Lawrence Bonassar, Itai Cohen, and Moumita Das. "Rigidity and fracture of biopolymer double networks." *Soft Matter* 18, no. 2 (2022): 322-327.
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127. Yang, Teaya, David Hathcock, Yuchao Chen, Paul L. McEuen, James P. Sethna, Itai Cohen, and Itay Griniasty. "Bifurcation instructed design of multistate machines." *Proceedings of the National Academy of Sciences* 120, no. 34 (2023): e2300081120.
128. Ramaswamy, Meera, Itay Griniasty, Danilo B. Liarte, Abhishek Shetty, Eleni Katifori, Emanuela Del Gado, James P. Sethna, Bulbul Chakraborty, and Itai Cohen. "Universal scaling of shear thickening transitions." *J. of Rheology* 67, (2023): 1189-1197.

Selected Press Coverage:

1. "Drop break-up" Exhibit display Kersten Physics Teaching Center (1996)
2. "A droplet falling from a nozzle" *Kochi Newspaper*, Japan (Sept. 20, 1999)
3. "Watching the Faucet Drip" *Physical Review Focus*, **4,** story 9 (1999)
4. Sarah Tomlin, "Lights, camera, drip," *Nature* news and views, **400**, 715 (1999)
5. Barbara Grant, "Camera Zips While Drops Drip," *Photonics Spectra*, **34**, 162 (2000)
6. Photograph of drop breakup described in "The Two Fluid Drop Snap Off Problem: Experiments and Theory," appeared on APS calendar 2000, abstract index for March meeting (2000), and *Phys. Rev. Focus* advertisement 2005
7. "Shrink-wrapped cells dodge the immune system" *The Economist*, June 21, (2001)
8. "Discovery could lead to new ways to create nano-fibers and wires" *Purdue news, Newswise, Spacedaily* (2003)
9. "Nanofibers evolving from drop break-up" *Roland Piquepaille's Technology Trends* (2003)
9. "Dislocation dynamics" This week in Science, *Science*, **305**, 1869 (2005)
10. "Squishiness in everyday things" Cornell Chronicle, April 18 (2008)
11. "Flight of the fruit fly" interview for "All in a day" CBC broadcast (2008)
12. "Jostling balls reveal secrets of ultrathin films" Physics World interview (2010)
13. "Watching Crystals Grow May Lead to Faster Electronic Devices" NSF press release (2010)
14. "Watching crystals grow provides clues to making smoother, defect-free thin films" Cornell Chronicle (2010)
15. Interview with Semiconductor International Magazine (2010)
16. Interview with Chemistry & Industry section of Ten Alps Creative (2010)
17. "Shearing triggers odd behavior in microscopic particles" Eureka Alert(2011)
18. "Shearing triggers odd behavior in microscopic particles" Futurity (2011)
19. "Shearing triggers odd behavior in microscopic particles" Newswise (2011)
20. "Shearing triggers odd behavior in microscopic particles" PhysOrg.com (2011)
21. "3-D videos show how plant roots navigate environment" NBC news.com (2012)
22. "3-D Plant Roots" DiscoveryNews (2012)

23. "Time-Lapse Imaging Captures Twisted Root Mechanics" ScienceDaily (2012)
24. "Time-Lapse Imaging Captures Twisted Root Mechanics" Phys.org (2012)
25. Physics of Moshpits (went viral after posting of article on the Arxiv) National Geographic, Popular Science, New Scientist, The Atlantic, The Chicago Reader, The Huffington Post (written by co-author J.L.S.), The Telegraph, ABC Science, MIT Technology Review - arXiv Blog, Spin, The Verge, Gizmodo, Examiner, Yahoo! News, Line Out @ The Stranger, Nerdcore @ Crackajack, News.com, AUX.tv, Metafilter, Slashdot, Motherboard, The Creators Project, The Kevin Houston Blog, Synchronized Minds (Tommi Himberg Blog), Alan Cross Blog, CBC Music, NME, Metalsucks, Metal Injection, Metal Hammer, Animal, GSA, Thrash MTL, Tone Deaf, Ultimate Guitar, No Clean Singing, Blabbermouth, Jam Spreader, At Most Fear Entertainment, ToDaMax, Top News, Konbini, Sounds, Tert, NWT online, Lenta, Nerd D3, XFM, Topix News, Brooklyn Vegan, Dangerous Minds, KROQ, Neatorama, TEOTI, Videosift, Geekapolis, Syracuse, Rock NYC, Reddit (Various threads in Physics, Science, Science (again), Metal, Ska), and Cornell Physics.
26. New York Times Science Take "Flies That Do Calculus With Their Wings"
27. Physics of Origami: LA Times, New York Times, NBC, NBC (again), Washington Post, Boston Globe, Phys.org, Physics World, Inside Science, LA Times (again), Sydney Morning Herald, Value Walk, Science Codex, Science Dailiy, Eureka Alert, Spiegel Online, Christian Science Monitor, Factor Tech, Next, The Age, Red Orbit, Nanowerk, TechiDec, Cornell Chronicle."
28. Vancouver fashion week (2015): Our origami designs were incorporated into dresses and purses that were shown at the Vancouver fashion week show.
29. Secret of Oobleck revealed at last (2015): Cornell Chronicle; Popular Science
30. Tame your oobleck Researchers able to control thickening (2016): Cornell Chronicle; Phys.org
31. Microscope becomes gauge to measure forces within crystals (2016): Cornell Chronicle; physics.org;noodles;technology.org; News and Views by Bowick & Chaikin; SALSA code tutorial
32. Physicists take first step toward cell-sized robots (2018) numerous outlets.
33. Physicists have found a way to foil a classic oobleck science trick, ScienceNews (2020)
34. Microscopic Robots: over 63 news outlets including: Nature Video (viewed over 1.3 million times), BBC, and the Telegraph (2020)
35. Origins of cartilage shear mechanics: 27 news outlets, including The Print, syndicated by ANI, with a reach of 33 million (2022)
36. Artificial Cilia: over 35 news outlets including articles in AZoRobotics and Scientific American (2022)
37. Robots with Brains on board: over 37 news outlets

Invited Seminars & Colloquia:

1. University of Chicago, Depts. of Physics and Computer Science (2000)
2. MIT, Department of Applied Mathematics (2000)
3. University of Chicago, Depts. of Physics and Computer Science (2001)
4. UC Irvine, Department of Physics (2001)
5. ExxonMobile Research and Engineering Company (2001)
6. Princeton University, Department of Physics (2001)

7. Jawaharlal Nehru Center, Department of Engineering Mechanics (2001)
8. India Institute of Science, Department of Physics (2001)
9. Clark University, Department of Physics (2002)
10. Harvard University, Division of Engineering and Applied Science (2002)
11. University of Maryland, Department of Physics (2003)
12. MIT, Department of Mechanical Engineering (2003)
13. Georgia Institute of Technology, Department of Physics (2003)
14. Georgia Institute of Technology, Department of Mathematics (2003)
15. Johns Hopkins University, Department of Physics (2003)
16. New York University, Courant Institute (2003)
17. UCSB, Department of Chemical Engineering (2003)
18. California Institute of Technology, Department of Chemical Engineering (2003)
19. UCLA, Depts. of Physics and Chemistry (2003)
20. ExxonMobile Research and Engineering Company (2003)
21. University of Chicago, Depts. of Physics and Computer Science (2003)
22. Georgia Institute of Technology, Department of Physics (2003)
23. Universite Montpellier II, Department of Physics (2003)
24. Universite Paris-Sud XI, The Laboratoire de Physique des Solides (2003)
25. Stanford, Department of Chemical Engineering (2004)
26. University of Oregon, Department of Physics (2004)
27. Emory, Department of Physics (2004)
28. MIT, Department of Physics (2004)
29. CCNY, The Levich Institute (2004)
30. Cornell, Department of Physics (2004)
31. Brandeis, Department of Physics (2004)
32. Cornell, Department of Physics (2004)
33. Cornell, Department of Chemical Engineering (2004)
34. University of New Mexico, Department of Mechanical Engineering (2004)
35. Sandia National Labs (2004)
36. Universitat Mainz, Department of Physics (2004)
37. Universitat Konstanz, Department of Physics (2004)
38. Universitat Dusseldorf, Department of Physics (2004)
39. Utrecht University, Depts. of Physical Chemistry and Physics (2004)
40. India Institute of Science, Department of Physics (2005)
41. Jawaharlal Nehru Center, Department of Engineering Mechanics (2005)
42. University of Massachusetts at Amherst, Department of Physics (2005)
42. Procter and Gamble Corporation, Industrial Research Headquarters (2005)
43. Arizona State University Department Physics and Astronomy (2005)
44. Rochester Institute of Technology, Department Physics (2005)
45. Cornell University, Department of Theoretical and Applied Math (2006)
46. University of Pennsylvania, Department of Physics and Astronomy (2006)
47. Syracuse University, Department of Physics (2006)
48. Yale University, Department of Mechanical Engineering (2006)
49. Florida State University, Department of Chemistry (2006)
50. University of Chicago, Department of Physics (2007)
51. UIUC, Department of Mechanical Engineering (2007)
52. Mount Holyoke, Department of Physics (2007)
53. New York University, Department of Math (2007)

54. New York University, Department of Physics (2007)
55. Georgetown University, Department of Physics (2008)
56. University of Chicago, Department of Physics (2008)
57. Rush Medical University, Dept of Orthopedics (2008)
58. Tulane, Department of Mechanical Engineering (2008)
59. University of Ottowa, Department of Physics (2008)
60. Academia Sinica (Taiwan), Department of Physics (2008)
61. National Taiwan University (Taiwan), Department of Physics (2008)
62. National Central University (Taiwan), Department of Physics (2008)
63. National Tsing Hua University (Taiwan), Department of Physics (2008)
64. University of Maryland, Dept of Physics (2009)
65. University of Massachusetts, Department of Physics (2009)
66. Weizmann Institute of Science (Israel), Department of Physical Chemistry (2009)
67. Hebrew University, (Israel), Department of Physics (2009)
68. Technion (Israel), Department of Physics (2009)
69. Tel Aviv University (Israel), Department of Chemistry (2009)
70. Rafael (Israel), (2009)
71. Rensselaer Polytechnic Institute, Department of Chem. and Bio. Eng. (2009)
72. University of Buffalo, Department of Physics (2009)
73. New Jersey Institute of Technology, Department of Math. Sci. (2009)
75. UC Berkeley, Center for Integrative Biomechanics (2009)
76. Stanford, Mechanical Engineering (2009)
77. University of Amsterdam, Physics (2009)
78. Utrecht University, Physics (2009)
79. Technische Universiteit Eindhoven, Physics (2009)
80. Princeton, Mechanical Engineering (2010)
81. MIT, Mechanical Engineering (2010)
82. Harvard, School of Engineering and Applied Sciences (2010)
83. Cornell, Entomology (2010)
84. Cornell, Mechanical Engineering (2010)
85. Los Alamos, (2010)
86. University of Chicago, Department of Physics (2010)
87. Caltech, Department of Applied Physics (2010)
88. University of Illinois at Urbana Champaign, Department of Physics (2010)
89. NYU, Department of Physics (2010)
90. UPenn, Department of Physics (2010)
91. UPenn, Department of Chemical Engineering (2010)
92. UCLA, Department of Physics (2010)
93. RIT, Department of Physics (2010)
94. SUNY Geneseo, Department of Physics (2010)
95. University of Michigan, Department of Physics (2010)
96. Procter and Gamble Corporation, Industrial Research Headquarters (2010)
97. UCSD, Department of Orthopaedic Surgery (2011)
98. UCSD, Department of Mechanical and Aerospace Engineering (2011)
99. University of Oregon, Department of Physics (2011)
100. Rockefeller University, Center for Studies in Physics and Biology (2011)
101. City University of New York, The Levich Institute (2011)
102. University of Chicago, Department of Physics (2011)

103. University of Colorado at Boulder, Deptartment of Physics (2011)
104. University of Colorado at Boulder, Department of Math (2011)
105. Emory University, Department of Physics (2011)
106. Ithaca College, Department of Chemistry (2011)
107. University of Rochester, Department of Physics (2011)
108. Fermilab, (2011)
109. Hebrew University, (Israel) Department of Physics (2012)
110. Ben Gurion University, (Israel) Department of Physics (2012)
111. University of Washington, Department of Radiology (2012)
112. Aspen Center for Physics, center wide colloquium, (2012)
113. Weizmann Institute of Science, Department of Chemistry (2012)
114. Weizmann Institute of Science, Department of Phyics (2012)
115. Tel Aviv University, School of Chemistry (2012)
116. Daniel Kivelson Memorial lecture, UCLA, Department of Chemistry (2013)
117. Harvey Mudd, Department of Physics (2013)
118. Liquid Crystal Institute, Kent State (2013)
119. Boston University, Department of Physics (2013)
120. University of Maryland, Department of Physics (2013)
121. University of Colorado at Boulder, Department of Physics (2013)
122. UCSB, Department of Materials Science (2013)
123. Weizmann Institute, Department of Physics (2013)
124. Yale, Department of Physics (2014)
125. Cornell University, Department of Mechanical Engineering (2014)
126. University of Chicago, Department of Physics (2014)
127. MIT, Department of Physics (2014)
128. AMOLF (Netherlands) Department of Physics (2014)
129. Oxford, Department of Physics (2014)
130. Cambridge, Department of Physics (2014)
131. Weizmann Institute, Department of Physics (2014)
132. Weizmann Institute, Department of Chemistry (2014)
133. University of Tokyo, Department of Chemistry (2014)
134. Harvard University, School of Engineering and Applied Sciences (2014)
135. Syracuse University, Department of Physics (2014)
136. Cornell University, Department of Physics (2014)
137. Howard Hughes Medical Institute, Janelia Farm (2014)
138. Georgetown, Department of Physics (2014)
139. Northwestern University, Materials Science and Engineering (2015)
140. University of North Carolina, Department of Physics (2015)
141. Harvard University, Department of Physics (2015)
142. University of Edinburgh, Department of Physics (2015)
143. Ecole Nationale Superieure, Center of Microelectronics (2015)
144. Universite Paris EST, Labratoire NAVIER (2015)
145. Ecole Polytechnique, LadHyX (2015)
146. Institute Curie, Physical Chemistry (2015)
147. Lehigh, Department of Physics (2015)
148. NYU, Department of Physics (2015)
149. Weizmann Institute, Department of Physics (2016)
150. Weizmann Institute, Department of Chemistry (2016)

151. Technion, Department of Mechanical Engineering (2016)
152. University of California Riverside, Department of Physics (2016)
153. Duke University, Department of Physics (2016)
154. Max Planck Institute for Intelligent Systems Stuttgart (2016)
155. Max Planck Institute for Dynamics and self-organization Goettingen (2016)
156. MIT, Department of Mechanical Engineering (2016)
157. USC, Department of Mechanical Engineering (2016)
158. Princeton Plasma Physics Lab (2016)
159. Forth, Department of Materials Science and Technology (2016)
160. Cornell, Biophysics Colloquium (2016)
161. Cornell, Department of Physics (2016)
162. Cornell, JGATAE Entomology Department (2016)
163. University of Texas at Austin, Department of Physics (2017)
164. Academia Sinica Taiwan (2017)
165. NTHU Taiwan (2017)
166. NTU Taiwan (2017)
167. Argon National Lab (2018)
168. Purdue, Department of Physics (2018)
169. Purdue, Department of Mechanical Engineering (2018)
170. Johns Hopkins, Departments of Physics and Mechanical engineering (2018)
171. Simon Frasier, Department of Physics (2019)
172. University of Victoria, Department of Physics (2019)
173. University of Illinois at Urbana-Champaign, Department of Physics (2019)
174. Georgia Tech, Department of Biological and Chemical Engineering (2019)
175. Georgia Tech, Department of Physics (2019)
176. Cornell, Mechanical Engineering, Sibley Graduate Research Symposium (2019)
177. Northwestern University, Complex Systems Physics Seminar (2019)
178. University of Pennsylvania, Physics colloquium (2019)
179. Duke University Physics (2020)
180. Duke University Biology (2020)
181. AMOLF Netherlands Department of Physics (2020)
182. Journal of Non-Newtonian Fluid Mechanics On-Line talk (2020)
183. BioPhysics and Precision Biology (BPPB) Virtual Seminars 2020
184. Northwestern University, Theoretical and Applied Mechanics Colloquium (2021)
185. Cal State Long Beach, Physics colloquium (2021)
186. Benjamin Levich Institute CCNY, colloquium (2022)
187. Virginia Tech, Hassan Aref Memorial lecture (2022)
188. North Carolina Agriculture and Technical State University (2022)
189. University of Amsterdam (2022)
190. University of Amsterdam IOP colloquium (2022)
191. University of Amsterdam Soft Matter section (2022)
192. AMOLF (2022)
193. Utrecht University (2022)
194. Vrie University (2022)
195. Rochester Institute of Technology (2022)
196. Duke University MEMS seminar (2023)
197. NCSU Chemical Engineering (2023)
198. UCLA Mechanical Engineering (2023)

199. Cedars Sinai (2023)
200. University of Chicago Dept. Molecular Engineering (2023)
201. University of Chicago Computational Sciences Seminar (2023)
202. ETH Distinguished Seminar in Robotics (2023)

Invited Conference Talks:

1. Nonlinear Analysis 2000 & beyond, Courant Institute, NYU (2000)
2. IMA "Hot Topics" workshop: Analysis and Modeling of Industrial Jetting Processes, Cosponsored by MIT, U. Minn., UC Davis (2001)
3. Singularities in Eulerian Dynamics. Inst. Phys. Sci. & Tech., University of Maryland (2003)
4. APS Division of Condensed Matter Physics, March Meeting (2004)
5. Gordon Research Conference (GRC) on Complex Fluids (2004)
6. Statistical Physics of Complex Systems, Los Alamos summer workshop (2004)
7. 2nd International Shear Symposium, Universitat Mainz (2004)
8. New England Complex Fluids Workshops, quarterly meetings (2005)
9. Workshop on Driven States in Soft and Biological Matter, Abdus Salam International Centre for Theoretical Physics (ICTP) (2006)
10. SFAC 2006 International Workshop: Bridging Nanoscale Forces and Interfacial Phenomena to the Macroscopic World (Mexico) (2006)
11. Optical Society of America, LS XXII Annual Meeting, (2006)
12. Polymer Outreach Program, Cornell (2007)
13. IURMS – ICAM Bangalore India (2007)
14. IMA Summer Program on Singularities, University of Minnesota (2008)
15. New York Complex Matter Workshop, Cornell University (2008)
16. APS Division of Condensed Matter Physics, March Meeting (2009)
17. AIP CHAOS/XAOC National Academy of Sciences in Woods Hole (2009)
18. DSRC Novel ways of computing workshop, Stanford University (2009)
19. Ecole de Physique: Physics of Amorphous Solids, Les Houches, (2010)
20. IMA Summer Program on Natural Locomotion, University of Minnesota (2010)
21. STANYS conference, Rochester NY (2010)
22. Gordon Research Conference (GRC) on Fluids (2011)
23. Optical Trapping & Optical Micromanipulation Conference, San Diego (2011)
24. Weitzfest Harvard University (2011)
25. Complex Dynamics of Dislocations Defects and Interfaces, Los Alamos (2011)
26. NATO Advanced Research Workshop, Dead Sea, Israel (2012)
27. Statistical Physics of Granular and Molecular Systems, Technion, Israel (2012)
28. Physics of Behavior workshop, Aspen Center for Physics, (2012)
29. Israel Physics Society, Jerusalem (2012)
30. Dynamic Days US, Denver (2013)
31. SPIE Defense, Security, and Sensing (2013)
32. Canadian Physics Society (2013)
33. CECAM Workshop on Supercooled Liquids and Amorphous Solids (2013)
34. Gordon Research Conference (GRC) on Thin Films and Crystal Growth Mechanisms (2013)
35. Gordon Research Conference (GRC) on Soft Matter (2013)
36. IAS Frontiers of Soft Matter Physics, Hong Kong (2014)

37. Gordon Research Conference (GRC) on Colloidal, Macromolecular & Polyelectrolyte Solutions (2014)
38. Materials Research Society Meeting, San Freancisco (2014)
39. KNAW Biophysics Meeting, Netherlands (2014)
40. Experimental Chaos and Complexity, Scotland (2014)
41. National Accademies Keck Futures Initiative: Collective Behavior from Cells to Societies, Irvine (2014)
42. APS Division of Condensed Matter Physics, March Meeting (2015)
43. SPIE Defense and Security, Baltimore (2015)
44. Rheology of Concentrated Suspensions, University of Edinburgh (2015)
45. Designer Matter Meeting, AMOLF (2015)
46. ARO workshop on the future of condensed matter physics (2015)
47. Soft Matter Symposium, University of Florida at Gainsville (2015)
48. National Accademies Keck Futures Initiative: ART & SEM, Irvine (2015)
49. NSF workshop on the future of soft condensed matter physics (2016)
50. Workshop on shear thickening, Georgetown (2016)
51. Workshop on Active Matter, Syracuse (2016)
52. Metamaterials 2016: Metamorphos VI (2016)
53. Max Planck Institute for Intelligent Systems Stuttgart: Special Symposium on Intelligent Systems (2016)
54. Applied Materials Keynote Address (2016)
55. Engineering Life (2017)
56. Atlanta Soft Matter Workshop Keynote speaker (2017)
57. Conference in honor of Heinrich Jaeger (2017)
58. KITP conference on dense suspensions (2018)
59. KITP conference on memory (2018)
60. Gordon Research Conference Granular Materials (2018)
61. Solvay conference: Mechanics of Slender Structures in Physics, Biology and Engineering: From Failure to Functionality (2018)
62. HHMI: Neural Circuits of the Insect Ventral Nerve Cord (2018)
63. APS DFD Plenary lecture (2018)
64. MRS Meeting Invited Speaker (2018)
65. LYNX Keynote speaker (2018)
66. Gordon Research Conference on complex active and adaptive materials (2019)
67. APS March Meeting invited talk (2019)
68. Teluride Workshop on Emergent Simplicity in Biophysical Dynamics (2019)
69. Israel Physics Society, Plenary lecture on Microscopic Robots (2021)
70. Self-Organization under Confinement, Lorentz center Workshop (2021)
71. APS March Meeting invited talk (2021)
72. Self-Organization under Confinement (part 2), Lorentz center Workshop (2022)
73. MicroTAS 2022 Key note lecture, (2022)
74. CNF 45th Anniversary (2022)
75. Robosoft Workshop (2023)
76. Center for Nanoscale Materials (Argonne National Labs) (2023)
77. Isaac Newton Institute Active mechanics (Cambridge UK) (2023)
78. Banff Mechanics of Cells and Polymer Networks (Banff CA) (2023)
79. IROS Enabling Robot Swarms Across Scales (2023)
80. Renaissance weekend (2023)

81. Gordon Research Conference in Robotics (2024)

Invited Public Lectures:

1. Grade school science outreach lecture (2003)
2. GK-12 nanotech program for teachers (2004)
3. Boston Museum of Science – Series of nine lectures (2004)
4. Mount Carmel College (India), Department of Science (2005)
5. Keynote address, "Squishy Matter," at the Region 3 High School Science Conference "Hands-on and Minds-on Science: Educating the Scientists of Tomorrow" Queens NY (2005)
6. Keynote address, "Squishy Matter," GK-12 continuing teacher education Cornell (2006)
7. CCMR Industrial Outreach Plenary speaker (2006)
8. 4-H Club "Fun Talk" (2006)
9. REU "Fun Talk" (2006)
10. Keynote address, "Squishy Matter," GK-12 outreach New York City (2007)
11. Lecture, "Squishy Matter," Sciencenter, Ithaca (2007)
12. Lecture, "Motion on different scales," Sciencenter, Ithaca (2009)
13. Performance, "Dance of Scales," Nanoscale Informal Science Eduction Network(NISEnet), San Francisco, (2009)
14. Lecture, "Flight of the fruit fly," Cornell entomology club (2010)
15. Performance, "Dance of Scales," Light in Winter, Ithaca NY (2010)
16. Lecture, "How insects fly," Sciencenter, Ithaca (2010)
17. Science Cabaret: "From Fruit Flies to Flying Robots: The Present and Future of Nanotechnology" Sciencenter and Nanoscale Informal Science Education Network(NISEnet), Ithaca (2011)
18. Cornell Cast: Flight of the fruit fly (2014)
19. REU "Fun Talk" (2015)
20. DC Art Science Evening Rendezvous (DASER), Cultural programs of the National Academy of Sciences (2016)
21. REU "Fun Talk" (2016)
22. Cornell Society of Physics Students "Flight of the fruit fly" (2016)
23. REU "Fun Talk" (2017)
24. CHIMEI Museum in Taiwan public lecture (2017)
25. TEDx Cornell (2018)
26. Cornell Alumni Dinner (2018)
27. Dean's Advisory Committee (2019)
28. Arts Unplugged: Science of the Very Very Small (2022)

Contributed Conference Talks:

1. American Physical Society March Meeting (1998)
2. American Physical Society March Meeting (1999)
3. American Physical Society March Meeting (2000)
4. Special Meeting on Complex Fluids, Monterey, CA (2000)
5. International Congress of Theoretical and Applied Mechanics, (2000)
6. Material Research Society, Fall meeting (2002)
7. New England Statistical Mechanics Meeting (2002)

8. New England Complex Fluids Workshops, quarterly meetings (2002-2004)
9. American Physical Society March Meeting (2003)
10. American Physical Society Division of Fluid Dynamics Meeting (2003)
11. American Physical Society March Meeting (2004)
12. American Physical Society March Meeting (2005)
13. American Physical Society March Meeting (2007)
14. American Physical Society Division of Fluid Dynamics Meeting (2007)
15. American Physical Society March Meeting (2008)
16. Society of Rheology Meeting (2008)
17. American Physical Society Division of Fluid Dynamics Meeting (2008)
18. Society for Comparative and Integrative Biology Meeting (2009)
19. American Physical Society March Meeting (2009)
20. Society for Integrative and Comparative Biology Meeting (2010)
21. American Physical Society Division of Fluid Dynamics Meeting (2010)
22. American Physical Society March Meeting (2011)
23. 6th International Meeting on Origami in Science (2014)
24. Society of Rheology (2014)
25. American Physical Society Division of Fluid Dynamics Meeting (2014)
26. American Physical Society March Meeting (2015)
27. American Physical Society Division of Fluid Dynamics Meeting (2015)
28. American Physical Society March Meeting (2016)
29. American Physical Society Division of Fluid Dynamics (2016)
30. Society of Rheology (2017)
31. American Physical Society March Meeting (2017)
32. American Physical Society March Meeting (2018)
33. American Physical Society March Meeting (2019)
34. American Physical Society March Meeting (2021)
35. American Physical Society March Meeting (2022)
36. American Physical Society March Meeting (2024)

Postdoctoral Fellows Supervised:

2006–**2009** Rajesh Ganapathy (Faculty JNC Bangalore India)
2006–**2009** Jonathan McCoy (Faculty Colby, Maine)
2007–**2011** John Savage (Liquidia Technologies)
2009–**2013** Xiang Cheng (Faculty Univ. of Minnesota Mat. Sci. and Chem. Eng.)
2010–**2016** Tsevi Beatus (Faculty Hebrew University, Jerusalem Israel)
2013–**2015** Corinne Reid Henak (Faculty University of Wisconsin at Madison)
2013–**2014** Bin Liu (Faculty UC Merced)
2014–**2018** Marc Miskin (Faculty University of Pennsylvania)
2015–**2017** James Pikul (Faculty University of Pennsylvania)
2016–**2017** Brian Leahy (Postdoc Harvard)
2018–**2020** Ran Niu (Faculty Huazhong University of Science and Technology)
2018–**2022** Qingkun Liu (Faculty Shanghai Jiao Tong University)
2019–**Present** Itay Griniasty
2020–**2021** Danilo Liarte (ICTP – SAIFR Sao Paulo, Brazil)
2020–**Present** Zexi Liang
2022–**Present** Jason Kim
2022–**Present** Melody Lim

2023–**Present** Navneet Singh

Graduate Students Supervised:

2005–**2010** Sharon Gerbode (Faculty Harvey Mudd)
2005–**2010** Mark Buckley (Faculty University of Rochester)
2006–**2011** Leif Ristroph (Faculty Courant Center for Mathematics NYU)
2009–**2014** John Mergo (Self Employed)
2010–**2014** Jesse Silverberg (Startup Research Company)
2011–**2016** Neil Lin (Faculty UCLA)
2011–**2016** Brian Leahy (Postdoc Harvard)
2012–**2018** Lena Bartell (Private Sector)
2013–**2022** Sam Whitehead (Postdoc Caltech)
2014–**2022** Meera Ramaswamy (Postdoc Princeton)
2015–**2022** Eric Schwen
2015–**2021** Baris Bircan (Private Sector)
2015–**2019** Edward Lee (Postdoc Santa Fe Institute)
2015–**2021**Yunus Kinkhabwala (Private Sector)
2016–**2022** Thomas Wyse Jackson (Private Sector)
2018–**2023** Jingyang Zheng
2018–**2023** Edward Ong
2018–**Present** Wei Wang
2019–**Present** Kemper Ludlow
2019–**Present** Han Keng Teoh
2020–**Present** Jacob Pelster
2020–**Present** Abby Leung
2022–**Present** Anna Barth
2022–**Present** Japheth Omonira

Undergraduate Students Supervised:

2006–**2007** Angie Wolfgang
2006–**2007** Jonathan Sobota
2006–**Summer** Erica Pratt
2006–**Summer** Jalina Keeling
2007–**2009** Brad Lyon
2007–**2009** Kirk Jensen
2007–**2008** Witat Fakcharoenphol
2007–**Summer** Andrew Potter
2008–**Summer** Jillian Kiser
2008–**Summer** Catherine Coumes
2008–**2011** Desmond Ong
2009–**2011** Sventlana Morozova
2009–**2011** Dan Porter
2011–**2012** Sam Dillavou
2011–**2012** Ben Nachman
2012–**2015** Muxin Zhang
2013–**2014** Tzer Han Tan

2014–2014 Jiaxin Liu
2014–2014 Peter Town
2015–2016 Julian May-Mann
2015–2016 Winston Lee
2015–2016 Bryan Zhang
2015–2015 Jacob Hunter
2015–2017 Monica Xu
2015–2016 Xiaoning Wang
2015–2016 Raymond Li
2017–2018 Edward Esposito
2017–2019 Darshna Anigol
2017–2019 Charlotte Slaughter
2018–2019 Kevin Zhang
2019–2020 Yuchao Chen
2018–2021 Jakin Ng (Highschool Student)
2019–2021 Deepika Gupta
2019–2021 Zhicheng Wang
2019–2022 Teaya Yang
2020–2022 Dora Kassabova
2020–2022 Alex Shapiro
2020–2022 Justin Tan

References:

Paul L. McEuen, Cornell University, Department of physics plm23@cornell.edu
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Nicholas Abbott, Cornell University, Biochemical engineering
Heinrich Jaeger, U. Chicago, Department Phys. h-jaeger@uchicago.edu
Kate Stebe, University of Pennsylvania, Dept of Chem Eng kstebe@seas.upenn.edu
Michael P. Brenner, Harvard U., Div. Eng. & App. Sci. brenner@seas.harvard.edu
John C. Crocker, U. Pennsylvania, Dept. of Chem Eng jcrocker@seas.upenn.edu
Michael Shelley, NYU, Courant Institute shelley@cims.nyu.edu
Gareth Mckinley, MIT, Dept. of Chemical Engineering gareth@mit.edu
David A. Weitz, Harvard U., Div. Eng. & App. Sci. & Phys. weitz@deas.harvard.edu
Sidney R. Nagel, U. Chicago, Department Phys. s-nagel@uchicago.edu
Andrea Liu, UPenn, Dept. of Physics ajliu@physics.upenn.edu