

# Curriculum vitae

José Alvarado

## Education & research

- 2019–present** Assistant Professor in Physics, University of Texas at Austin, USA.
- 2013–2018** Postdoc in Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, USA. Advisor: Anette (Peko) Hosoi
- 2009–2013** Ph.D. in Physics, AMOLF & VU Amsterdam, Netherlands. Thesis: *Biological Polymers: Confined, Bent & Driven*. Advisor: Gijsje Koenderink
- 2003–2008** M.Sc. in Physics, minor in Classical Sanskrit, Universität Leipzig, Germany. Thesis: *Biomechanics on Actin Bundles*. Advisor: Josef Käs
- 2002** Mechanical Engineering student, University of Miami, USA.
- 1997–2001** German Studies Diploma, Coral Reef Senior High School, Miami, USA.

## Research interests

“Biological Systems Mechanics”: biomimetics, cell biology, soft condensed matter physics, mechanical engineering, geometric nonlinearity, emergent response, fluid-structure interaction, biological fluid flows, symmetry-breaking, hydraulic components, fluid mixing, actuator design, nonlinear force generation, optimization, energetic versatility, active gels, nonequilibrium physics, percolation theory, protein hydrogel actuators, nematic order, stimulus-responsive biomaterials, biohybrid robotics

## Technical experience

**Experimental:** imaging, fluorescence microscopy, polarization microscopy, polymers, liquid crystals, rheology, microfluidics, light scattering, x-ray scattering, protein purification, biochemical preparation, genetic engineering, optical tweezers, machine shop, laser cutter, 3D printers, microfabrication, microcontroller-based prototyping.

**Computational:** image analysis, feedback control, data analysis, statistical analysis, Monte-Carlo simulation, ODE solvers, Mathematica, MATLAB, Python, HTML, CSS, JavaScript, SQL, functional programming, object-oriented programming, graphic design.

**Theoretical:** analysis (real, complex, functional), group theory, variational calculus, quantum mechanics, statistical mechanics, percolation theory, polymer physics, soft condensed matter physics, continuum mechanics, thermodynamics, dynamics, controls (state-space).

## Publications

Links to profiles on Google Scholar, ResearchGate, ORCID

Citations across research articles: 766 (Google Scholar)

h-index: 11 (Google Scholar)

## Research articles

- S Weng, R Huebner, C Devitt, B Nyaoga, J Alvarado, J Wallingford. Planar polarized force propagation integrates cell behavior and tissue morphogenesis during convergent extension. **Under review** (2022).
- CC Devitt, S Weng, VD Bejar-Padilla, J Alvarado, JB Wallingford. PCP and Septins govern the polarized organization and mechanics of the actin cytoskeleton during convergent extension. **Under review** (2022).
- J Clarke, F Cavanna, AD Crowell, JR Houser, K Graham, A Green, JC Stachowiak, TM Truskett, DJ Milliron, AM Rosales, J Alvarado. Depletion-Driven Morphological Control of Bundled Actin Networks. **Under review** (arXiv preprint) (2022).
- J McGrath, J Alvarado. Hill-type, bioinspired actuation delivers energy economy in DC motors. **Bioinspiration & Biomimetics**, 17, 066021 (2022) (doi.org/10.1088/1748-3190/ac9a1a) (Featured in UT Austin's College of Natural Science's News).
- JP Smucker, ZM Vural, J Alvarado, PJ Morrison. Integrability technique for fluid flow induced deformation of a boundary hair. **Physical Review Fluids**, 7, 084001 (2022) (doi.org/10.1103/PhysRevFluids.7.084001) (Preprint on arXiv).
- C Devitt, C Lee, R Cox, O Papoulas, J Alvarado, S Shekhar, E Marcotte, J Wallingford. Twinfilin1 controls lamellipodial protrusive activity and actin turnover during vertebrate gastrulation. **Journal of Cell Science**, 134(14): jcs254011 (2021) (doi.org/10.1242/jcs.254011).
- F Cavanna, J Alvarado. Quantification of the mesh structure of bundled actin filaments. **Soft Matter**, 17: 5034–5043 (2021). (doi.org/10.1039/D1SM00428J)
- IC Gârlea, O Dammone, J Alvarado, V Notenboom, Y Jia, GH Koenderink, DGAL Aarts, MP Lettinga, BM Mulder. Colloidal Liquid Crystals Confined to Synthetic Tactoids. **Scientific Reports**, 9: 20391 (2019) (doi.org/10.1038/s41598-019-56729-9)
- J Alvarado, L Cipelletti, G Koenderink. Uncovering the dynamic precursors to motor-driven contraction of active gels. **Soft Matter**, 15: 8552–8565 (2019) (doi:10.1039/C9SM01172B) (Preprint on arXiv)
- Y Liang, J Alvarado, K Iagnemma, AE Hosoi. Dynamic sealing using magneto-rheological fluids. **Physical Review Applied**, 10: 064049 (2018) (doi:10.1103/PhysRevApplied.10.064049) (Preprint on arXiv).
- J Alvarado, J Comtet, E de Langre, AE Hosoi. Nonlinear flow response of soft hair beds. **Nature Physics**, 13: 1014–1019 (2017) (doi:10.1038/nphys4225) *Featured on Nature Physics News & Views, MIT*

*News, FYFD and the Naked Scientists.*

- I Garlea, P Mulder, J Alvarado, O Dammone, G Koenderink, P Lettinga, D Aarts, B Mulder. Topology meets finite particle size: defect-mediated domain structures in strongly confined colloidal liquid crystals. **Nature Communications**, 7: 12112 (2016) (doi:10.1038/ncomms12112).
- A Nasto, M Regli, PT Brun, J Alvarado, C Clanet, AE Hosoi. Air entrainment in hairy surfaces. **Physical Review Fluids**, 1: 033905 (2016) (doi:10.1103/PhysRevFluids.+033905).
- M Sheinman, A Sharma, J Alvarado, G Koenderink, FC MacKintosh. Inherently unstable networks collapse to a critical point. **Physical Review E**, 92: 012710 (2015) (doi:10.1103/PhysRevE.92.012710).
- M Sheinman, A Sharma, J Alvarado, G Koenderink, FC MacKintosh. Anomalous discontinuity at the percolation critical point of active gels. **Physical Review Letters**, 114: 098104 (2015) (doi:10.1103/PhysRevLett.114.098104). *Featured on the issue cover.*
- A Lewis, I Garlea, J Alvarado, O Dammone, P Howell, A Majumdar, B Mulder, MP Lettinga, G Koenderink, D Aarts. Colloidal liquid crystals in rectangular confinement: theory and experiment. **Soft Matter**, 10: 7865–7873 (2014) (doi:10.1039/C4SM01123F).
- M Mavrikis, Y Azou-Gros, FC Tsai, J Alvarado, A Bertin, F Iv, A Kress, S Brasselet, G Koenderink, T Lecuit. Septins promote F-actin ring formation by cross-linking actin filaments into curved bundles. **Nature Cell Biology**, 16: 322–34 (2014) (doi:10.1038/ncb2921). *Rated “excellent” by F1000Prime; Featured in Curr Biol 24(11): R526 (2014).*
- J Alvarado, B Mulder, G Koenderink. Alignment of nematic and bundled semiflexible polymers in cell-sized confinement. **Soft Matter**, 10: 2354–2364 (2014) (doi:10.1039/C3SM52421C). *Featured on the issue cover.*
- J Alvarado, M Sheinman, A Sharma, F MacKintosh, G Koenderink. Molecular motors robustly drive active gels to a critically connected state. **Nature Physics**, 9: 591–597 (2013) (doi:10.1038/nphys2715). *Featured on the issue cover.*
- M Soares e Silva, J Alvarado, J Nguyen, N Georgoulia, B Mulder, G Koenderink. Self-organized patterns of actin filaments in cell-sized confinement. **Soft Matter**, 7: 10631–10641 (2011) (doi:10.1039/C1SM06060K).
- D Strehle, J Schnauss, C Heussinger, J Alvarado, M Bathe, J Käs, B Gentry. Transiently crosslinked F-actin bundles. **European Biophysical Journal**, 40: 93–101 (2011) (doi:10.1007/s00249-010-0621-z).

## Reviews & chapters

- J Alvarado, M Sheinman, A Sharma, F MacKintosh, G Koenderink. Force percolation and phase behavior of contractile active gels. **Soft Matter**, 13: 5624–5644 (2017) (doi:10.1039/C7SM00834A).
- B Gentry, S Swei, J Alvarado, L Kreplak, G Koenderink. Mechanical Properties of Active Biopolymer Networks. **Soft Matter and Biomaterials on the Nanoscale**, Volume 2, Chapter 1: Polymers on the Nanoscale:

World Scientific (2017).

- J Alvarado, G Koenderink. Reconstituting cytoskeletal contraction events with biomimetic actin-myosin active gels. **Methods in Cell Biology**, 128: 83–103 (2015) (doi:10.1016/bs.mcb.2015.02.001).
- J Alvarado, G Koenderink. Chapter 1: Active mechanics of the cytoskeleton. **Cell and Matrix Mechanics**, Abingdon: Taylor & Francis (2014) (isbn:9781466553811) (doi:10.1201/b17612-2).

### Patents

- Y Liang, M Evzelman, MF Demers, J Alvarado, AE Hosoi, K Iagnemma, R Zane. Solid State Pump Using Electro-Rheological Fluid. US Patent US10309386B2 (2019).

### Other publications

- J Alvarado, M Sheinman, A Sharma, F MacKintosh, G Koenderink. Actieve vezelnetwerken: van connectie tot contractie. Popular article for Nederlandse Tijdschrift voor Natuurkunde, 80 (02): 8 (2014) (link).
- J Alvarado. Biological Polymers: Confined, Bent and Driven. PhD thesis, VU University Amsterdam (2013) (link).
- J Alvarado, M Schmidt, G Rudolph. Group Theoretical Aspects of Quantum Mechanics. 80-page introductory script, freely available (2008) (link).

### Grants and awards

- PI, Faculty Early Career Development Program (CAREER) Award (\$599k), National Science Foundation (2022–2027)
- Co-PI, UT Austin Materials Research Science and Engineering Center (MRSEC) Seed Grant (\$160k), National Science Foundation (2021–2023)
- Co-PI, Multidisciplinary University Research Initiative (\$1.2M), US Army Research Office (2014–2018)
- Shapiro Teaching Fellowship (\$31k), MIT Mechanical Engineering Department (2013)
- Travel Grant (\$1k), Active Jammed Systems conference (2012)
- Travel Grant (€1k), Netherlands Society for Biochemistry and Molecular Biology (2010)
- Best idea for an interactive experiment (€1k), AMOLF 60th anniversary celebration (2009)

### Teaching

- Lecturer, “Statistical Mechanics” (PHY 385L) physics graduate course, UT. Overall rating from students:
  - Spring 2022: 2.0/5.0 ( $N = 18/23$ )
- Lecturer, “Thermodynamics and Statistical Mechanics” (PHY 369) upper-division course for physics majors, UT. Overall rating from students:

- Fall 2021: 4.6/5.0 ( $N = 27/62$ )
- Lecturer, “General Physics II” (PHY 317L) undergraduate intro physics course for premedical, chemistry, and life sciences students, UT. Overall rating from students:
  - Spring 2021: 3.7/5.0 ( $N = 38/126$ )
  - Fall 2020: 4.4/5.0 ( $N = 29/95$ )
    - \* Spring 2020: 4.5/5.0 ( $N = 33/109$ )
    - \* Spring 2019: 3.6/5.0 ( $N = 63/130$ )
- Instructor, “Thermal Fluids Engineering II” (2.006) undergraduate course, MIT Overall rating from students:
  - Spring 2014: 6.9/7.0 ( $N = 27/48$ )
  - Fall 2013: 6.2/7.0 ( $N = 27/45$ )
- MIT Kaufman Teaching Certificate Program (2014)

### Guest instruction

- Guest Instructor, “Advanced Experimental Methods in Soft Condensed Matter Research” (PHYS 448/548), California State University Long Beach (2022)
- Guest Instructor, “Being Human in Physics” (PHY 110C) undergraduate course on overcoming personal challenges in physics, UT (2020–2022)
- Guest Instructor, Undergraduate seminar for physics majors (PHY 110C), UT (2019)
- Guest Lecturer, “Mechanics of Active Matter” graduate course, Institut Fresnel (2016)
- Guest Lecturer, “Bio-inspired Robotics” (2.74) graduate course, MIT (2015)

### Academic service

- *Physical Review Letters*, referee
- *Physical Review Applied*, referee
- *Physical Review E*, referee
- *Physical Review X*, referee
- *Nature Communications*, referee
- *Journal of the Royal Society Interface*, referee
- *MDPI Fluids*, referee
- *Journal of Fluid Mechanics*, referee
- *Physics of Fluids*, referee
- *Experimental Mechanics*, referee
- *AICHE Journal*, referee
- *Scientific Reports*, referee
- *Royal Society of Chemistry, Book Department*, referee
- *CRC Press, Taylor & Francis*, referee
- *Bioinspiration & Biomimetics*, referee

- Dutch Foundation for Fundamental Research on Matter (FOM), Projectruimte grant scheme, referee
- National Science Foundation (NSF), panel member
- National Science Foundation (NSF), ad-hoc reviewer

### Conference organization

- Texas Soft Matter Meeting, UT Austin, USA (2022)

### Invited conference talks

- Dense Active Matter Invited Session, American Physical Society March Meeting, Las Vegas, USA (2023)
- Active Matter in Complex Environments, Aspen Center for Physics, Aspen, USA (2023)
- Equilibrium and Beyond-Equilibrium Self-Organization in Soft Materials Symposium, International Materials Research Conference, Cancún, Mexico (held online) (2022)
- Materials and Fabrication Schemes for Robotics Symposium, Spring Materials Research Society Meeting, Seattle, USA (2021)
- Active Matter and Liquid Crystals in Biological and Bio-Inspired Systems Focus Session, American Physical Society March Meeting, Denver, USA (held online) (2020)
- Texas Soft Matter Meeting, Texas Tech U, USA (2019)
- World Congress of Biomechanics, Boston, USA (2014)

### Invited institutional talks

- Complex Systems Seminar, Department of Physics, Northwestern University, USA (2023)
- Fluid Mechanics and Waves Seminar, New Jersey Institute of Technology, USA (held online) (2022)
- Seminar, Biological Physics Physical Biology online seminar series, Clemson University, USA (2022)
- Seminar, Biophysics Seminar Series, Department of Physics, University of Illinois-Chicago, USA (2022)
- Fluids Seminar, Department for Biological and Environmental Engineering, Cornell University, USA (2021)
- Biological Physics Seminar, Department of Physics, University of California Los Angeles, USA (2021)
- Seminar, Motors in Quarantine online seminar series, Centre for Mechanochemical Cell Biology, University of Warwick, UK (2020)
- Seminar, Center for Theoretical Biological Physics and Systems, Synthetic and Physical Biology Program, Rice University, USA (2020) *Also broadcast as a Physics of Living Systems virtual seminar*

- Colloquium, Physics Department, California State University Long Beach, USA (2020)
- Group meeting, A. Klotz, California State University Long Beach, USA (2020)
- Group meeting, P. Morrison, UT Austin, USA (2020)
- Symposium, AMOLF, Amsterdam, Netherlands (2020) *Postponed*
- Seminar, Physics Department, Trinity University, San Antonio, USA (2019)
- Colloquium, Leibniz Institute of Polymer Research, Dresden, Germany (2019)
- Solids seminar, Aerospace Engineering and Engineering Mechanics Department, UT Austin (2019)
- Seminar, Physics Department, Universität des Saarlandes, Saarbrücken, Germany (2018)
- Seminar, Physics Department, UC San Diego, USA (2018)
- Seminar, Physics Department, UMASS Amherst, USA (2018)
- Seminar, Physics Department, Brandeis University, USA (2018)
- Seminar, Mechanical Engineering Department, Carnegie Mellon University, USA (2018)
- Seminar, Center for Nonlinear Dynamics, Physics Department, UT Austin, USA (2018)
- Aerodynamics and Flow Control Seminar, Mechanical Engineering and Aeronautics, City University of London, UK (2018)
- Seminar, Keck Science Department, Claremont Colleges, USA (2017)
- Group Meeting, K. Brown, Mechanical Engineering, Boston University (2017)
- Seminar, Mechanical Engineering Department, UC San Diego, USA (2017)
- Group Meeting, MOSAIC, Institut Fresnel, Marseille, France (2016)
- Fluid Mechanics Seminar, Mechanical Engineering, University of Illinois Urbana-Champaign, USA (2016)
- Group Meeting, S. Nagel, Physics, University of Chicago, USA (2016)
- Seminar, Army Research Lab, Aberdeen Proving Ground, USA (2016)
- Group Meeting, G. McKinley, Mechanical Engineering, MIT, USA (2015)
- Group Meeting, MOSAIC, Institut Fresnel, Marseille, France (2015)
- Group Meeting, C. Extavour, Organismic and Evolutionary Biology, Harvard University, USA (2014)
- Seminar, Concord Field Station, Organismic and Evolutionary Biology, Harvard University, USA (2014)
- Seminar, Active Matter Program, Kavli Institute for Theoretical Physics, UC Santa Barbara, USA (2014)
- Short Colloquium, AMOLF, Amsterdam, Netherlands (2013)
- Group Meeting, U. Schwarz, Physics, Universität Heidelberg, Germany (2013)
- Seminar, FAS Center for Systems Biology, Harvard University, USA (2013)
- Seminar, Hatsopoulos Microfluids Laboratory, MIT, USA (2013)
- Seminar, Lewis-Siegler Institute, Princeton University, USA (2013)
- Seminar, Laboratory for Systems Biology, RIKEN, Kobe, Japan (2012)

- Seminar, Complex Systems Biology Center, University of Tokyo, Japan (2012)
- Seminar, Laboratoire Charles Coulomb, Université Montpellier, France (2012)
- Group Meeting, C. Marchetti, Physics, Syracuse University, USA (2012)
- Van Gogh Awards Ceremony, Institut Français, Amsterdam, Netherlands (2012)
- Seminar, Developmental Biology Institute, Université Méditerranée, Marseille, France (2011)
- Image Analysis Seminar, AMOLF, Amsterdam, Netherlands (2011)
- Group Meeting, M. Janson, Plant Sciences, Wageningen University, Netherlands (2010)
- Short Colloquium, AMOLF, Amsterdam, Netherlands (2009)

### **Invited talks promoting diversity**

- Canadian Conference for Undergraduate Women in Physics, research talk and Queer in Physics panel (2022)
- UT Gender Minorities in Physics, research talk and Q&A (2021)

### **Invited talks from student organizations**

- UT College of Natural Sciences Dean's Scholars, research talk
- UT American Chemical Society student chapter (2021), research talk

### **Contributed talks**

- Cellular Energetics Program, Kavli Institute of Theoretical Physics, UC Santa Barbara, USA (2019)
- Physics of Cancer Meeting, Physics Department, Universität Leipzig, Germany (2018)
- American Society for Cell Biology, Biological Soft Matter Meeting, Cambridge MA, USA (2017)
- American Physical Society Division of Fluid Dynamics, Denver, USA (2017)
- American Physical Society March Meeting, New Orleans, USA (2017)
- Society for Integrative and Comparative Biology Meeting, Tufts U, USA (2016)
- Sports Physics Conference, École Polytechnique, Paris, France (2016)
- Robotics@MIT Student Conference, MIT, USA (2016)
- American Physical Society Division of Fluid Dynamics, Boston, USA (2015)
- Fluids and Elasticity Meeting, Biarritz, France (2015)
- Complex Fluids Workshop, Yale University, USA (2015)
- American Physical Society Division of Fluid Dynamics, San Francisco, USA (2014)



- Greater Boston Area Statistical Mechanics Meeting, Brandeis U, USA (2013)
- Physical Biology Circle Meeting, EMBL, Heidelberg, Germany (2013)
- Biophysical Society Meeting, Philadelphia, USA (2013)
- Physics@FOM Conference, Veldhoven, Netherlands (2013)
- Complex Systems Summer School, VU Amsterdam & AMOLF, 't Vlietenholt, Netherlands (2012)
- Physical Biology Circle Meeting, Institut Curie, Paris, France (2012)
- Dutch Soft Matter Meeting, University of Amsterdam, Netherlands (2012)
- Course on Cell Shape Changes, Fondation Pierre-Gilles de Gennes, Institut Curie, Paris, France (2011)
- Dutch Meeting on Molecular and Cellular Biophysics, Veldhoven, Netherlands (2011)
- Dutch Soft Matter Meeting, Utrecht University, Netherlands (2011)
- Physiology Course, Marine Biological Laboratory, Woods Hole, USA (2010)
- Dutch Soft Matter Meeting, Wageningen U, Netherlands (2010)
- Physics and Mechanics of Biological Systems Course, Les Houches, France (2009)
- Physical Biology Circle Meeting, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany (2009)
- Soft Matter Winter School, Špindlerův Mlýn, Czech Republic (2007)

## Posters

- Active Jammed Systems Conference, New York University, USA (2012)
- Cell Shape Changes Course, Fondation Pierre-Gilles de Gennes, Institut Curie, Paris, France (2011)
- 4th European Cell Mechanics Meeting, Amsterdam, Netherlands (2011)
- Physical Biology Circle Meeting, University of Saarbrücken, Germany (2011)
- Physics@FOM Conference, Veldhoven, Netherlands (2011)
- Plant and Microbial Cytoskeleton Conference, Andover, USA (2010)
- Physical Biology Circle Meeting, AMOLF, Amsterdam, Netherlands (2010)
- Physics@FOM Conference, Veldhoven, Netherlands (2010)
- 3rd European Cell Mechanics Meeting, Bad Honnef, Germany (2010)

## Mentoring

- PhD Jake McGrath, UT. Project: Mimicking muscle with DC motors. (2021–)
- BSc Faith Nguyen, UT. Project: Force chains in yarn networks. (2021)
- PhD Lixiang Xu, UT (as *pro forma* advisor in Physics). Research advisor in Neuroscience and Computer Science: Alexander Huth. Project: Speech processing & distraction in the brain. (2021–2022)
- PhD Jonas Smucker, UT. Project: Microfluidic mixing due to deformable hair beds. (2020–)

- PhD James Clarke, UT. Project: Measuring force of contractile active gels. (2020–)
- BSc Brandon Bloom, UT. Project: Microfluidic diode based on angled hair beds. (2020)
- BSc Danielle Maldonado, UT. Project: Oscillatory rheology of hair beds. (2020–2021)
- BSc Muzamil Abdullatif, UT. Project: Actin bundles under Thermal Noise Imaging. (2020–2021)
- BSc Max Hall-Brown, UT. Project: Critical behavior in actin-myosin contraction. (2020–2021)
- PhD Francis Cavanna, UT. Project: Phase behavior of contractile active gels. (2019–)
- BSc Zerrin Vural, UT. Thesis: Analytical solution of hair beds under shear-driven Stokes flows. (2019–2021)
- BSc Tingran Wang, UT. Project: Actin-myosin contraction. (2019–2020)
- BSc Aislinn Smith, UT. Project: Actin bundles under Thermal Noise Imaging. (2019)
- MSc Teja Jammalamadaka, MIT. Project: Hairs in Poiseuille flow. (2017)
- BSc Joe Babcock, MIT. Thesis: Alignment in active gels. (2017)
- BSc Lauren TenCate, MIT. Project: Hairy swimming robot. (2016)
- BSc Betsy Soukup, MIT. Thesis: A solid-state, electrorheological, microfluidic pump. (2014)
- MSc Janine Wilbers, AMOLF. Thesis: Self-Organization of Cross-Linked Actin bundles in Confinement. (2011)
- MSc Jeanette Nguyen, AMOLF. Thesis: Self-Organization of Actin Networks in Confinement. (2010)

### **Thesis committees**

- Kalina Slavkova, Advisor: Thomas Yankeelov, Physics, UT (2022)
- Yu-Chern Wong, Advisor: Vernita Gordon, Physics, UT (2022–)
- Anqi Zhang, Advisor: Wilson Geisler, Physics, UT (2021–)
- John Lucas Pharr, Advisor: Michael Marder, Physics, UT (2021–)
- Logan Hillberry, Advisor: Mark Raizen, Physics, UT (2021–)
- Jordan Zesch, Advisor: EL Florin, Physics, UT (2021–)
- Suzanne Jacobs, Advisor: EL Florin, Physics, UT (2020–)
- Yun Huang, Advisor: Donglei Fan, Materials Science and Engineering, UT (2020–)
- Yujen Wang, Advisor: Sapun Parekh, Biomedical Engineering, UT (2020–)
- Caitlin Devitt, Advisor: John Wallingford, Molecular Biosciences, UT (2020–)
- Michael Himmelsbach, Advisor: EL Florin, Physics, UT (2019)

### **Qualifier committees**

- Han-Ting Chen, Advisor: Michael Marder, Physics, UT (2022)

- Marilyn Wells, Advisor: Vernita Gordon, Physics, UT (2021)
- Yu-Chern Wong, Advisor: Vernita Gordon, Physics, UT (2021)
- Cong Xu, Advisor: Carlos Baiz, Chemistry, UT (2021)
- Lixiang Xu, Advisor: Alexander Huth, Computational Neuroscience, UT (2021)
- Yun Huang, Advisor: Donglei Fan, Materials Science and Engineering, UT (2020)
- Boli Zhou, Advisor: Paul Goldbart, Physics, UT (2020)
- Anqi Zhang, Advisor: Wilson Geisler, Physics, UT (2020)
- John Lucas Pharr, Advisor: Michael Marder, Physics, UT (2020)
- Kalina Slavkova, Advisor: Thomas Yankeelov, Physics, UT (2020)

## University Service

- Member, Center for Social Change, UT (2021–)
- Member, College of Natural Sciences Diversity, Equity, and Inclusion Committee, UT (2021–)
- Member, Application Review Committee for TIDES Summer Research Fellowships, College of Natural Sciences, UT (2021)
- Member, American Physical Society’s Bridge Program, Physics, UT (2021–)
- Member, American Physical Society’s Inclusion, Diversity, and Equity Alliance (APS-IDEA), Physics, UT (2020–)
- Member, Outreach Committee, Physics, UT (2019–)

## Fostering diversity

- Panelist, Black and Brown Academics and Mentorship (B.B.A.M.) Program, Career Panel, UT (2022)
- Member, College of Natural Sciences Diversity, Equity, and Inclusion Committee, UT (2021–)
- Member, American Physical Society’s Inclusion, Diversity, and Equity Alliance (APS-IDEA), UT (2020–)
- Member, American Physical Society’s Bridge Program, Physics, UT (2021–)
- Staff mentor, Rainbow Compass student mentoring program, MIT (2017)
- Co-founder, qtPhDs @ MIT, LGBT+ postdoc association (2017)
- Mentor, Women’s Technology Program, MIT (2014–2017)
- Treasurer, SpectrUM LGBT+ student association, University of Miami (2002)

## Public outreach

- Speaker, Schrödinger’s Pint May Event, Darwin’s Pub, Austin, TX, USA (2022)
- Organizer, Schrödinger’s Pint, UT, Austin, TX, USA (2022–)
- Speaker, UT PREP Summer STEM Camp, Austin, TX, USA (2021)
- Interview, The Naked Scientists, Cambridge, UK (2017)

- Science Communications Fellow, Discovery Museum, Acton, MA USA (2017)
- Popular Colloquium\*, AMOLF, Amsterdam, Netherlands (2013)
- Interview\*, Swammerdam Science Radio Program, AmsterdamFM, Netherlands (2013)
- Contributor, “Steps of Science” public art installation, Science Park, Amsterdam, Netherlands (2012)
- Presenter, Film & Science Festival, NEMO Science Center, Amsterdam, Netherlands (2012)
- Quizmaster\*, Science Park Open Day, Amsterdam, Netherlands (2011)
  - \*performed in the Dutch language

### **Research courses attended**

- Cell Shape Changes, Fondation Pierre-Gilles de Gennes, Institut Curie, Paris, France (2011)
- Physiology, Marine Biological Laboratory, Woods Hole, USA (2010)
- Physics and Mechanics of Biological Systems, École de Physique, Les Houches, France (2009)

### **Languages**

Fluent: English, Spanish, German, Dutch

Varying: Japanese, Classical Sanskrit, Hindi, Icelandic, French, Italian, Portuguese