

MICHELLE M. DRISCOLL

Northwestern University
Department of Physics and Astronomy
Evanston, IL United States

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driscollphysicslab.org

MAJOR PROFESSIONAL INTERESTS

I am an experimental soft condensed matter physicist, and my lab's focus is to understand, characterize, and control soft materials. The central theme of my work is that emergent structure formation can be used a powerful tool to understand disordered, nonequilibrium systems. I use advanced imaging methods and develop image analysis techniques to extract and characterize this structure formation in a variety of soft matter systems such as complex fluids, driven suspensions, and gels.

EDUCATION

University of Chicago Ph.D, Physics (advisor: Sidney R. Nagel)	2014
University of Texas, Austin B.S. in Physics with honors B.S. in Mathematics	2007

APPOINTMENTS

Northwestern University Associate Professor, Department of Physics and Astronomy	2024 -
Northwestern University Assistant Professor, Department of Physics and Astronomy	2017 - 2024
New York University Postdoctoral Research Associate, Center for Soft Matter Research (Advisor: Paul Chaikin)	2014 - 2017

RESEARCH SUPPORT

Current Support

- **PPG Industries** Dec 2024 - May 2025
"Drop impact and coating processes: influence of particle anisotropy"
PI: Michelle Driscoll
Driscoll lab award: \$82,384
- **National Science Foundation DMR-2311698** 2023 - 2026
Division of Materials Research, Condensed Matter Physics
"Collaborative Research: Gel rupture under simple and dynamic loading: manipulation of failure mode via patterned heterogeneity in soft materials"
PI: Caroline Czeszepanski, Co-PI: Michelle Driscoll, Co-PI: Giuseppe Buscarnera
Driscoll lab award: \$399,883
- **National Science Foundation DMR-2011854** 2020 - 2026
Division of Materials Research, Condensed Matter Physics
"University of Chicago Materials Research Science and Engineering Center"

PI: Margaret Gardel, Co-PI: Michelle Driscoll
Driscoll lab award: \$300,000

- **Northwestern Institute on Complex Systems** 2023 - 2024
Complex Challenges for a Complex Future Seed Funding Initiative
“Northwestern Science Communication Collective: Developing a Shared Storytelling Language”
PIs: Michelle, Katherine Amato, Jennifer Dunn, Erin Courtney
award amount: \$15,000

Previous Support

- **National Science Foundation DMR-2004176** 2020 - 2024
Division of Materials Research, Condensed Matter Physics
“Collaborative Research: Impact of a colloidal suspension droplet: Suspension flows at extreme shear rates”
PI: Michelle Driscoll, Co-PI: Xiang Cheng
Driscoll lab award: \$254,637
- **Center for Engineering Sustainability and Resilience, Northwestern University** 2020 - 2022
Seed Funding Initiative
“ViSER (Visualizing Suspension Electro-Rheology)”
PI: Jeffrey Richards, Co-PI: Michelle Driscoll
Driscoll lab award: \$30,000
- **National Science Foundation CBET-1706562** 2017 - 2021
Division of Chemical, Bioengineering, Environmental & Transport Systems Division, Particulate & Multiphase Processes
“Magnetic microrollers as a platform for active transport”
PI: Aleksander Donev, Co-PI: Michelle Driscoll
Driscoll lab award: \$150,726
- **National Science Foundation DMR-1420709** 2018 - 2020
Division of Materials Research, Condensed Matter Physics
“University of Chicago Materials Research Science and Engineering Center, SuperSeed Funding”
PI: Margaret Gardel, Co-PI: Michelle Driscoll
Driscoll lab award: \$90,000

PUBLICATIONS

Underlined names indicate Driscoll lab Northwestern student or postdoc co-authors.

Journal Articles

- [21] *Rocking, Rolling, and Hopping: Exploring the Multi-motion Capabilities of Rigid and Soft Ellipsoidal Actuators*, Shih-Yuan Chen, Michelle M. Driscoll, *in review*, *arXiv*: 2410.07396
- [20] *Wobbling and Migrating Ferrofluid Droplets*, Aaveg Aggarwal, Shih-Yuan Chen, Eleftherios Kirkinis, Mohammed Imran Khan, Bei Fan, Michelle M. Driscoll, and Monica Olvera de la Cruz, **Communications Physics**, 7, 385 (2024)
- [19] *Unconstrained dynamic gel swelling generates transient surface deformations*, Alyssa VanZanten, Shih-Yuan Chen, Michelle M. Driscoll, and Caroline R. Szczepanski, **Soft Matter**, 20, 6742 - 6753 (2024).
- [18] *Restructuring a passive colloidal suspension using a rotationally driven particle*, Shih-Yuan Chen, Hector Lopez-Rios, Monica Olvera de la Cruz, Michelle M. Driscoll, **Soft Matter**, 20, 2151-2161 (2024).
- [17] *A simple catch: thermal fluctuations enable hydrodynamic trapping of microrollers by obstacles*, Ernest B. van der Wee, Brendan C. Blackwell, Florencio Balboa Usabiaga, Andrey Sokolov, Isaiah Katz, Blaise Delmotte, Michelle M. Driscoll, **Science Advances**, 9(10):eade0320, (2023).

- [16] *Rupture dynamics of flat colloidal films*, Phalguni Shah, Eleanor Ward, Srishti Arora, Michelle M. Driscoll, **Physical Review Fluids**, 8 024002 (2023).
- [15] *FSVPy: A Python-based Package for Fluorescent Streak Velocimetry (FSV)*, Han Lin, Brendan C. Blackwell, Connor C. Call, Shanliangzi Liu, Claire Liu, Michelle M. Driscoll, Jeffery J. Richards, **Journal of Rheology** 67, 197 (2023).
- [14] *Coexistence of solid and liquid phases in shear jammed colloidal drops*, Phalguni Shah, Srishti Arora, Michelle M. Driscoll, **Communications Physics** 5, 222 (2022).
- [13] *Heterogeneity-stabilized homogeneous states in driven media*, Zachary G. Nicolaou, Daniel J. Case, Ernest B. van der Wee, Michelle M. Driscoll, and Adilson E. Motter, **Nature Communications** 12, 4486 (2021).
- [12] *Gel rupture during dynamic swelling*, Keslie Leslie, Robert Doane-Solomon, Srishti Arora, Sabrina Curley, Caroline Szczepanski, Michelle M. Driscoll, **Soft Matter**, 17(6), 1513-1520 (2021).
- [11] *Sedimentation of a Colloidal Monolayer Down an Inclined Plane*, Brennan Sprinkle, Sam Wilken, Shake Karapetyan, Michio Tanaka, Zhe Chen, Joseph R. Cruise, Blaise Delmotte, Michelle M. Driscoll, Paul Chaikin, Aleksandar Donev, **Physical Review Fluids** 6, 034202 (2021).
- [10] *Driven dynamics in dense suspensions of microrollers*, Brennan Sprinkle, Ernest B. van der Wee, Yixiang Luo, Michelle M. Driscoll, and Aleksandar Donev, **Soft Matter** 16(34):7982-8001 (2020).
- [9] *Magneto-capillary dynamics of amphiphilic Janus particles at curved liquid interfaces*, Wenjie Fei, Michelle M. Driscoll Paul Chaikin, Kyle Bishop, **Soft Matter** 14, 23:4661-4665 (2018).
- [8] *A minimal model for a hydrodynamic fingering instability in microroller suspensions*, Blaise Delmotte, Michelle M. Driscoll, Paul Chaikin, Aleksandar Donev, **Physical Review Fluids** 2, 114301 (2017).
- [7] *Hydrodynamic shocks in microroller suspensions*, Blaise Delmotte, Michelle M. Driscoll, Paul Chaikin, Aleksandar Donev, **Physical Review Fluids**, 2, 092301 (2017).
- [6] *Unstable fronts and motile structures formed by microrollers*, Michelle M. Driscoll, Blaise Delmotte, Mena Youssef, Stefano Sacanna, Aleksandar Donev, Paul Chaikin, **Nature Physics** 13: 375-379 (2017).
- [5] *The role of rigidity in controlling material failure*, Michelle M. Driscoll, Brian Chen, Thomas Beuman, Stephan Ulrich, Sidney Nagel, Vincenzo Vitelli, **Proceedings of the National Academy of Sciences** 113 (39), 10813-10817 (2016).
- [4] *Geometric control of failure behavior in perforated sheets*, Michelle M. Driscoll, **Physical Review E** 90, 062404 (2014).
- [3] *Creation of prompt and thin-sheet splashing by varying surface roughness or increasing air pressure*, Andrzej Latka, Ariana Strandburg-Peshkin, Michelle M. Driscoll, Cacey Stevens, Sidney Nagel, **Physical Review Letters** 109, 054501 (2012).
- [2] *Ultrafast interference imaging of air in splashing dynamics*, Michelle M. Driscoll and Sidney Nagel, **Physical Review Letters** 107 154502 (2011).
- [1] *Thin film formation during splashing of viscous liquids*, Michelle M. Driscoll, Cacey Stevens, Sidney Nagel, **Physical Review E** 82 036302 (2010).

Review Articles

- [2] *Drop Impact Dynamics of Complex Fluids: A Review*, Phalguni Shah and Michelle M. Driscoll, **Soft Matter**, 20:4839-4858 (2024)
- [1] *Leveraging collective effects in externally driven suspensions: Experiments and Simulations*, Michelle M. Driscoll and Blaise Delmotte, **Current Opinion in Colloid and Interface Science** 40:42-57 (2019).

Reviews and Editorial Contributions (non-peer reviewed)

- [3] *EDITORIAL: Dissertation Award in Statistical and Nonlinear Physics of APS for Dr. Adrian van Kan*, Sebastian Deffner, Michelle M. Driscoll, Juergen Kurths, Sidney Redner, Greg Voth, Chaos, 33 (11): 110401 (2023)
- [2] *Microgravity makes fully mobile droplets measurable*, Michelle M. Driscoll, Nature News & Views (2022): 247-248.
- [1] *An engaging look at the physics of fluids*, book review of Liquid Rules (Miodownik), Michelle M. Driscoll, Physics Today 72 (8) 54 (2019)

AWARDS AND HONORS

Post-doctoral Recognitions

- Outstanding Referee, Physical Review Letters (2023)
annual recognition given to about 150 of 88,600 active referees
- Faculty Honor Roll, Northwestern Office of Undergraduate Research (2022)
- Soft Matter Emerging Investigator, Royal Society of Chemistry (2021)

Pre-doctoral Awards, Honors, and Fellowships

- Yodh Prize, University of Chicago (2014)
awarded for outstanding research in experimental physics
- Robert A. Millikan Fellowship (2010-2013)
- Best Presentation, NSF Midwest MRSEC Symposium (2009)
- Schlumberger Undergraduate Research Fellowship (2006-2007)

PRESS

- phys.org, “A surprising way to trap a microparticle”, March 8, 2023.
- New Scientist Highlight: “Watch this strange fluid act like a solid and liquid at the same time”, June 2022.
- Colloids: A microscopic army, Nature Physics 13 324 (2017)
- Fluid Dynamics: The air down there, Nature Physics, 7 835 (2011)
- Ultrafast interference technique makes a splash, Phy. World, Oct 13, 2011.

INVITED PRESENTATIONS

- | | |
|---|------------------------|
| [42] Saint Anthony Falls Seminar Series, College of Science and Engineering
University of Minnesota, Minneapolis, MN USA | (scheduled) May 2025 |
| [41] Laboratoire d'Hydrodynamique
École polytechnique, Palaiseau, France | (scheduled) April 2025 |
| [40] Manchester Centre for Nonlinear Dynamics
University of Manchester, Manchester, UK | (scheduled) April 2025 |
| [39] Department of Aeronautics and Astronautics
University of Southampton, Southampton, UK | (scheduled) April 2025 |
| [38] School of Physics Seminar
Trinity College, Dublin, Ireland | (scheduled) March 2025 |
| [37] Soft Matter and Biophysics Seminar Series
Syracuse University, Syracuse, NY | October 2024 |
| [36] Mechanical Engineering Departmental Seminar
Michigan State University, East Lansing, MI USA | February 2024 |
| [35] Fluid Dynamics Research Consortium Seminar
Pennsylvania State University, State College, PA USA | December 2023 |

[34]	Applied Physical Sciences Colloquium, University of North Carolina, Chapel Hill, NC USA	November 2023
[33]	CECAM Workshop: 3D cracks and crack stability, Lausanne, Switzerland	June 2023
[32]	Complex Systems/Biophysics Seminar North Carolina State University, Raleigh, NC USA	June 2023
[31]	Chemical Engineering Department Seminar University of Illinois at Chicago, Chicago, IL USA	January 2023
[30]	Aspen winter physics conference, <i>Active matter in complex environments</i> Aspen Center for Physics, Aspen, CO USA	January 2023
[29]	MRSEC Seminar Brandeis University, Waltham, MA USA	December 2022
[28]	Symposium: “Emergent Order and Mesoscale Structure Formation in Soft Condensed Matter” Materials Research Society Fall Meeting, , Boston, USA	November 2022
[27]	Condensed Matter Seminar University of Massachusetts Amherst, Amherst, MA	October 2022
[26]	PMMH Laboratory Seminar PMMH-ESPCI, Paris, France	September 2022
[25]	WE-Heraeus Summer School “Active Matter and Complex Media” Cargese Institute, Corsica, France	September 2022
[24]	Physics Seminar Department of Physics and Materials Science, University of Luxembourg, Luxembourg	September 2022
[23]	Physics Department Colloquium UC Merced, Merced, CA USA	September 2022
[22]	Workshop: “Active matter: the next 25 years” Lorentz Center, Leiden, Netherlands	August 2022
[21]	Equilibrium and non-Equilibrium Pattern Formation in Soft Matter BIRS Workshop, Kelowna, BC Canada	July 2022
[20]	Mini-synposium: “Dynamics and instabilities of flows with particles across length scales” U.S. National Congress on Theoretical and Applied Mechanics, Austin, TX, USA	June 2022
[19]	Condensed Matter Seminar (virtual) School of Physics and Astronomy, Tel Aviv University, Israel	April 2022
[18]	Nonlinear Dynamics Seminar Center for Nonlinear Dynamics, University of Texas at Austin, Austin, TX USA	March 2022
[17]	SPREE Seminar Series Civil and Environmental Engineering, Northwestern University, Evanston, IL USA	February 2022
[16]	Fluids Seminar (virtual) Cornell University, Ithaca, NY, USA	November 2021
[15]	Seminar (virtual), LadHyX École polytechnique, Paris, France	February 2021
[14]	Physics Department Colloquium (virtual) Emory University, Atlanta, GA USA	September 2020
[13]	Symposium: Advances in Modeling, Simulation, Artificial Intelligence, and Software Microscopy & Microanalysis 2020 meeting (virtual), Milwaukee, WI USA	August 2020

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|------|---|----------------|
| [12] | Physics Department Colloquium
Illinois Institute of Technology, Chicago, IL USA | January 2020 |
| [11] | Fluids Seminar
University of Illinois Urbana-Champaign, Urbana, IL USA | November 2019 |
| [10] | Keynote Speaker
Chicago Area SIAM Student Conference, Chicago, IL USA | April 2019 |
| [9] | Workshop: Emergent dynamics and self-assembly of out-of-equilibrium colloids
CECAM, Lausanne, Switzerland | March 2019 |
| [8] | Invited Talk: Pattern Formation in Soft Materials
American Physical Society, March Meeting, Los Angeles, CA USA | March 2018 |
| [7] | Computations in Science Seminar
University of Chicago, Chicago, IL USA | February 2018 |
| [6] | Wednesdays@NICO
Northwestern Institute on Complex Systems, Evanston, IL USA | January 2018 |
| [5] | Condensed Matter/AMO Seminar
University of Michigan, Ann Arbor, MI USA | November 2017 |
| [4] | Active and Smart Matter Workshop
Syracuse University, Syracuse, NY USA | August 2016 |
| [3] | Soft—Meta Matter Workshop
University of Chicago, Chicago, IL | September 2014 |
| [2] | Fluids Seminar
Brown University, Providence, RI | December 2012 |
| [1] | Focus Session: Soft Matter Physics of Drops, Bubbles, Foams, and Emulsions
American Physical Society March Meeting, Boston, MA | March 2012 |

CONTRIBUTED PRESENTATIONS AND GROUP MEMBER PRESENTATIONS

All talks were presented by the first author; starred number (*) indicates presentation delivered by NU student or postdoc. An underlined name indicates a student or postdoc directly advised by Michelle.

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|-------|--|---------------|
| [35]* | <i>“Unpinned and Unpredictable: Complex motion of self-vibrating drops”</i>
<u>Shankhadeep Man</u> , <u>Shih-Yuan Chen</u> , Mohammed Imran Khan, Bei Fan, Michelle M. Driscoll
American Physical Society Division of Fluid Dynamics Meeting, Salt Lake City, UT USA | November 2024 |
| [34]* | <i>“Mobility dynamics of rotationally driven particles in a structured environment”</i>
<u>Pamud Akalanka Bethmage</u> , Andrey Sokolov, Brennan Sprinkle, Michelle M. Driscoll
American Physical Society Division of Fluid Dynamics Meeting, Salt Lake City, UT USA | November 2024 |
| [33]* | <i>“Flopping a ferrofluid marble uphill”</i>
<u>Shih-Yuan Chen</u> , Addison Benz, Natalya Guiden, Michelle M. Driscoll
American Physical Society March Meeting, Minneapolis, MN USA | March 2024 |
| [32] | <i>“Things fall apart: understanding and controlling self-rupture during dynamic swelling”</i>
Michelle M. Driscoll, Caroline Szczepanski, <u>Shih-Yuan Chen</u> , Alyssa VanZanten, <u>Samira Khan</u>
American Physical Society March Meeting, Minneapolis, MN USA | March 2024 |
| [31]* | <i>“Piu salato il mare: The effect of salt on the shear thickening behavior of non-Brownian suspensions”</i>
<u>Brian Seper</u> , Anahita Mobaseri, Xiang Cheng, Michelle M. Driscoll
American Physical Society March Meeting, Minneapolis, MN USA | March 2024 |

- [30]* *“Rolling microshuttles: trapping and shipping colloids by pure hydrodynamics”* November 2023
Shih-Yuan Chen, Hector Manuel Lopez Rios, Monica Olvera de la Cruz, Michelle M. Driscoll
 American Physical Society Division of Fluid Dynamics Meeting, Washington, DC USA
- [29] *“Drop impact of dense suspensions: shear jamming with free surfaces”* March 2023
 Michelle M. Driscoll, Brian C. Seper, Phalguni Shah, Srishti Arora
 American Physical Society March Meeting, Las Vegas, NV USA
- [28]* *“Instabilities in polymeric fluid sheets, and the distinct roles of rheology and microstructure”* March 2023
Carly E. Galvin, Brendan C. Blackwell, Michelle M. Driscoll
 American Physical Society March Meeting, Las Vegas, NV USA
- [27]* *“Step into the Ring: the role of particle shape on deposition patterns in dense drying droplets”* 2023
Brian C. Seper, Sam Nielsen, Michelle M. Driscoll
 American Physical Society March Meeting, Las Vegas, NV USA
- [26]* *“Encountering obstacles: microrollers interacting in complex and structured environments”* March 2023
Shih-Yuan Chen, Hector Manuel Lopez de la Cerda Rios, Monica Olvera de la Cruz, Michelle M. Driscoll
 American Physical Society March Meeting, Las Vegas, NV USA
- [25]* *“Dynamics and fragmentation in complex fluid sheets created by impinging jets”* November 2023
Carly E. Galvin, Brendan C. Blackwell, Michelle M. Driscoll
 American Physical Society Division of Fluid Dynamics, Indianapolis, IN USA
- [24] *“A simple catch: thermal fluctuations enable hydrodynamic trapping of microrollers by obstacles”* November 2023
 Michelle M. Driscoll, Ernest B. van der Wee, Brendan C. Blackwell, Florencio Balboa Usabiaga, Andrey Sokolov,
Isaiah Katz, Blaise Delmotte
 American Physical Society Division of Fluid Dynamics, Indianapolis, IN USA
- [23]* *“Magnetic microrollers maneuvering in a structured fluid”* November 2023
Shih-Yuan Chen, Michelle M. Driscoll American Physical Society Division of Fluid Dynamics, Indianapolis, IN
 USA
- [22] *“Drop impact: Complex fluids under extreme stress”* October 2022
 Michelle M. Driscoll, Phalguni Shah, Srishti Arora
 Society of Rheology Annual Meeting, Chicago, IL USA
- [21]* *“Coexistence of liquid and solid phases in impacting colloidal drops”* June 2022
Phalguni Shah, Srishti Arora, Michelle M. Driscoll
 American Chemical Society Colloids and Surface Science Symposium, Golden, CO USA
- [20]* *Microrollers make voids: generating wake fields in Stokes flow via hydrodynamics* June 2022
Shih-Yuan Chen, Michelle M. Driscoll American Chemical Society Colloids and Surface Science Symposium,
 Golden, CO USA
- [19]* *“Dynamics of colloidal and viscous soap films: the role of viscosity”* March 2022
Phalguni Shah, Eleanor Ward, Srishti Arora, Michelle M. Driscoll
 American Physical Society March Meeting, Chicago, IL USA
- [18]* *“Gel rupture and surface instabilities during dynamic swelling”* March 2022
Shih-Yuan Chen, Keslie Leslie, Robert Doane-Solomon, Srishti Arora, Alyssa VanZanten, Caroline Szczepanski,
 Michelle M. Driscoll
 American Physical Society March Meeting, Chicago, IL USA
- [17]* *“Fluorescent streak velocimetry of non-Newtonian fluids”* March 2022
Brendan C. Blackwell, Han Lin, Connor C. Call, Michelle M. Driscoll, Jeffery J. Richards
 American Physical Society March Meeting, Chicago, IL USA

- [16]* *Keeping Our Sheet Together: Dynamics and Fragmentation in Yield-Stress Fluid Sheets* March 2022
Carly E. Galvin, Brendan C. Blackwell, Michelle M. Driscoll
 American Physical Society March Meeting, Chicago, IL USA (2022)
- [15]* *"Dimples and Voids in Dense Drying Drops"* March 2022
Brian C. Seper, Srishti Arora, Max Paik, Michelle M. Driscoll
 American Physical Society March Meeting, Chicago, IL USA
- [14] *"Drop impact of colloidal suspensions: effect of particle anisotropy"* November 2021
 Michelle M. Driscoll, Phalguni Shah, Lily Boyd, Ravi Chepuri, Srishti Arora
 American Physical Society Division of Fluid Dynamics, Phoenix, AZ USA
- [13]* *"Drying Colloidal Suspensions: Simple Patterns and Complex Flows"* November 2021
Brian C. Seper, Srishti Arora, Max Paik, Michelle M. Driscoll
 American Physical Society Division of Fluid Dynamics, Phoenix, AZ USA
- [12]* *Microrollers maneuvering complex geometries* March 2021
Brendan C. Blackwell, Michelle M. Driscoll
 American Physical Society March Meeting (virtual)
- [11]* *"Space and time cluster tomography of active system"* March 2021
 Daniel Matoz Fernandez, Sean Patrick Edblom Dougherty, Brendan C. Blackwell, Michelle M. Driscoll, Istvan Kovacs, Monica Olvera de la Cruz
 American Physical Society March Meeting (virtual)
- [10]* *"Gel rupture in a dynamic environment"* March 2021
Keslie Leslie, Robert Doane-Solomon, Srishti Arora, Sabrina Curley, Caroline Szczepanski, Michelle M. Driscoll
 American Physical Society March Meeting (virtual)
- [9]* *"Drop impact of anisotropic colloidal suspensions"* March 2021
Phalguni Shah, Ravi Chepuri, Srishti Arora, Michelle M. Driscoll
 American Physical Society March Meeting (virtual)
- [8]* *"Hydrodynamic trapping of microrollers by cylindrical obstacles"* November 2020
Ernest van der Wee, Floren Balbao Usabiaga, Michelle M. Driscoll
 American Physical Society Division of Fluid Dynamics (virtual)
- [7]* *"The Making and Breaking of Viscous Bubbles"* November 2020
Phalguni Shah, Eleanor Ward, Michelle M. Driscoll
 American Physical Society Division of Fluid Dynamics (virtual)
- [6]* *"To jam or not to jam?"* November 2019
Srishti Arora, Michelle M. Driscoll
 American Physical Society Division of Fluid Dynamics, Seattle, WA USA
- [5]* *"Life in the fast layer"*, November 2019
Ernest B. Van Der Wee, Brennan Sprinkle, Isaiah Katz, Mena Youssef, Stefano Sacanna, Aleksandar Donev, Michelle M. Driscoll
 American Physical Society Division of Fluid Dynamics, Seattle, WA USA
- [4]* *"Non-Newtonian bubbles: dynamics of colloidal film rupture"* November 2019
Phalguni Shah, Srishti Arora, Michelle M. Driscoll
 American Physical Society Division of Fluid Dynamics, Seattle, WA USA
- [3]* *"When microrollers meet anisotropy"* June 2019
Ernest van der Wee, Michelle M. Driscoll
 American Chemical Society Colloids and Surface Science Symposium, Atlanta, GA, USA

- [2]* “Colloidal drops under extreme stress” March 2019
Srishti Arora, Michelle M. Driscoll
 American Physical Society March Meeting, Boston, MA USA
- [1]* “Rigid Bubbles: Novel Instabilities in Colloidal Film Rupture” March 2019
Phalguni Shah, Srishti Arora, Michelle M. Driscoll
 American Physical Society March Meeting, Boston, MA USA

ADVISING

Postdoctoral Associates

- [4] Shih-Yuan Chen 2021 -
 [3] Brendan Blackwell 2020 - 2022
current position: Teaching Faculty, Chemical & Biological Engineering, University of Wisconsin, Madison
 [2] Srishti Arora 2018 - 2020
current position: Research Scientist, Institute for New Materials, Saarbrücken, Germany
 [1] Ernest van der Wee 2018 - 2020
current position: Microscopy Specialist at the Biology Imaging Center, Biology, Utrecht University

PhD students

- [5] Pamud Akalanka Bethmage 2022 -
 [4] Shankhadeep Man 2022 -
 [3] Samira Khan 2022 -
 [2] Brian Seper 2020 - 2024
left with a Masters, October 2024
 [1] Phalguni Shah 2018 - 2022
current position: Research Engineer I, PPG, Pittsburg, PA USA

Masters students

- [2] Xinjue Wei 2019 - 2020
current position: Ph.D student, Northwestern University, Marko group
 [1] Joseph McCourt 2017 - 2018
current position: Postdoctoral Appointee, Argonne National Laboratory

Undergraduate students

- [20] Haley Shamah Spring 2024 -
 [19] Audra Rosenzweig Spring 2024 - Summer 2024
 [18] Chloe Fisher Spring 2024
current position: Masters student, Karlsruhe Institut für Technologie
 [17] Jingbo (Kevin) Liu Winter 2023 - Summer 2023
 [16] Sam Nielsen Winter 2022 - Spring 2024
current position: Ph.D student, Physics, Bradeis University
 [15] Desta Tewabe Fall 2022 - Spring 2023
current position: Masters Student, Materials Engineering, USC
 [14] Carly Galvin Spring 2021 - Spring 2023
current position: Ph.D student, Physics, University of California, Santa Barbara

[13]	Aryeh Silver	Winter 2022 - Summer 2022
	<i>current position: Masters student, Civil and Environmental Engineering, Northwestern University</i>	
[12]	Ivan Fithian	Fall 2019 - Fall 2022
	<i>current position: Development Engineer at Delorean Power, Arlington, VA USA</i>	
[11]	Kelsey-Ann Leslie	Fall 2018-Spring 2022
	<i>current position: Research Engineer at Pykus Therapeutics, Lowell, MA USA</i>	
[10]	Lily Boyd	Fall 2020 - Fall 2021
	<i>current position: Master student, Teachers College, Columbia University, New York, NY USA</i>	
[9]	Malav Patel	Winter 2020 - Winter 2021
	<i>current position: Ph.D student, Aerospace Engineering, Georgia Institute of Technology, Atlanta, GA USA</i>	
[8]	Max Paik	Winter 2020 - Winter 2021
	<i>current position: Ph.D student, Computer Science, New York University New York, NY USA</i>	
[7]	Orion Forowycz	Spring 2017 - Fall 2019
	<i>current position: Masters Student, Interdisciplinary Mathematics, Vienna University of Technology</i>	
[6]	Isaiah Katz	Summer 2018 - Winter 2020
	<i>current position: Ph.D student, Statistics and Applied Probability, University of California, Santa Barbara</i>	
[5]	Yuchen Liu	Summer 2019
[4]	Gabriel Petersen	Summer 2019
[3]	Ravi Chepuri	Summer 2019
	<i>current position: Ph.D student, Physics, University of Maryland</i>	
[2]	Margot Murray	Winter 2019 - Spring 2019
	<i>current position: Associate, MultiPlan, New York, NY USA</i>	
[1]	Samuel Kim	Summer 2018

High School Students

[15]	Adriana Castelan	Summer 2024
[14]	Tayyab Khan	Summer 2024
[13]	Miguel Gomez	Summer 2024
[12]	Chaeun (Chad) Park	Fall 2023 - Spring 2024
[11]	Addison Benz	Summer 2023
[10]	Natalya Guiden	Summer 2023
[9]	Raymundo Sandoval Valdez	Summer 2022
[8]	Haneef Khan	Summer 2022
[7]	Max Shepherd	Summer 2019
[6]	Eleanor Ward	Summer 2019
[5]	Robert Doane-Solomon	Summer 2019
[4]	Ananya Visweswaran	Summer 2018
[3]	Max Baliga	Summer 2018
[2]	John Idler	Summer 2018
[1]	Michael Frim	Summer 2018

RESEARCH GROUP MEMBER AWARDS AND ACHIEVEMENTS

• Haley Shamah, Best Poster, APS CU*iP	January 2025
• Shih-Yuan Chen, Best Poster, UChicago MRSEC Symposium	November 2024
• Audra Rosenzweig, Summer Undergraduate Research Grant, NU	Summer 2024
• Haley Shamah, Summer Undergraduate Research Grant, NU	Summer 2024
• Shih-Yuan Chen, Travel Award, APS March Meeting, DSOF (soft matter division in APS)	March 2024
• Sam Nielsen, Travel Grant, (NU Office of Undergraduate Research)	Winter 2024
• Sam Nielsen, Summer Undergraduate Research Grant, NU	Summer 2023
• Jingbo (Kevin) Lu, Summer Year Undergraduate Research Grant, NU	Summer 2023
• Shih-Yuan Chen, Best Poster, UChicago MRSEC Symposium	August 2023
• Carly Galvin, Travel Grant, (NU Office of Undergraduate Research)	Winter 2023
• Carly Galvin, Summer Year Undergraduate Research Grant, NU	Summer 2023
• Carly Galvin, Academic Year Undergraduate Research Grant, NU	Winter 2022
• Carly Galvin, Summer Undergraduate Research Grant, NU	Summer 2022
• Sam Nielsen, Summer Undergraduate Research Grant, NU	Summer 2022
• Aryeh Silver, Summer Undergraduate Research Grant, NU	Summer 2022
• Malav Patel, Summer Undergraduate Research Grant, NU	Summer 2021
• Lily Boyd, Summer Undergraduate Research Grant, NU	Summer 2021
• Max Paik, Summer Undergraduate Research Grant, NU	Summer 2020
• Max Paik, Academic Year Undergraduate Research Grant, NU	Winter 2020
• Srishti Arora, Best Poster, Soft Condensed Matter Gordon Research Conference	August 2019
• Ravi Chepuri, Summer Undergraduate Research Grant, NU	Summer 2019
• Yuchen Liu, Summer Undergraduate Research Grant, NU	Summer 2019
• Gabriel Petersen, Summer Undergraduate Research Grant, NU	Summer 2019
• Kelsey-Ann Leslie, Best Presentation (by Panel), Undergraduate Expo	May 2019
• Phalguni Shah, Travel Award, APS March Meeting, GSOF (soft matter group in APS)	March 2019
• Isaiah Katz, Summer Undergraduate Research Grant, NU	Summer 2018
• Samuel Kim, Summer Undergraduate Research Grant, NU	Summer 2018

DEPARTMENTAL, COLLEGE, AND UNIVERSITY SERVICE

Departmental Service

• Departmental Program Review Task Force ad hoc Committee	2024 - 2025
• Faculty Mentor, Physics Mentorship Program	2024 - 2025
• Chair, Undergraduate Inreach Committee	2024 - 2025
• Organizer, Complex Systems Seminar Series	2024 - 2025
• Chair, Undergraduate Inreach Committee	2023 - 2024
• Organizer, Complex Systems Seminar Series	2023 - 2024
• Member, Undergraduate Curriculum Committee	2023 - 2024
• Member, Bylaws Committee (ad-hoc)	2023
• Chair, Undergraduate Engagement Committee	2022 - 2023
• Member, Undergraduate Curriculum Committee	2022 - 2023
• Organizer, Complex Systems Seminar Series	2022 - 2023
• Chair, Undergraduate Inreach Committee	2021 - 2022
• Organizer, Complex Systems Seminar Series	2021 - 2022
• Chair, Undergraduate Inreach Committee	2020 - 2021
• Member, Women and Gender Minorities in Physics	2020 - 2021
• Member, Search Committee, Professor of Instruction	2020 - 2021
• Organizer, Complex Systems Seminar Series	2020 - 2021
• Chair, Undergraduate Inreach Committee	2019 - 2020

- Member, Undergraduate Curriculum Committee, Lab Subcommittee 2019 - 2020
- Chair, Undergraduate Engagement Committee 2018 - 2019
- Member, Undergraduate Curriculum Committee, Lab Subcommittee 2018 - 2019
- Member, Search Committee, Biological/Complex Systems Faculty 2018 - 2019
- Member, Admissions Committee 2017 - 2018
- Member, Space Committee 2017 - 2018
- Member, Outreach Committee 2017 - 2018

Program Service, Applied Physics

- Director of Graduate Studies 2024 -
- Chair, Qualifying Exam Committee 2022 - 2023
- Faculty Mentor, Applied Physics Mentorship Program 2022 - 2023

College Service

- Fellow, Residential College of Science and Engineering at Slivka Hall 2023 - 2025

University Service

- Co-leader, Soft Matter and New Materials Data Science Networking Group 2020-2021
- Member, Northwestern Institute on Complex Systems (NICO) Executive Committee 2019-2022

PROFESSIONAL SERVICE AND RELATED ACTIVITIES

American Physical Society Service

- Member, DSOFTE Executive Committee (Chair for 2028 Meeting) 2025
- Chair and co-organizer of invited session, “Complex fluids under stress” 2025
March Meeting
- Member, Acrivos Award Committee, Division of Fluid Dynamics January 2024 - December 2025
- Poster Judge, Division of Soft Matter 2023
- Member, Selection Committee, Group on Statistical and Nonlinear Physics Dissertation Prize 2022
- Member-at-Large, Prairie Section 2020 - 2022
- Poster Judge, Division of Fluid Dynamics 2022
- Chair and co-organizer of invited session, “Flow and structure in dense suspensions” 2021
March Meeting (virtual)
- Session Chair, “Drops: Complex Fluids” 2021
Division of Fluid Dynamics Meeting
- Co-organizer, “Women in Fluids Networking Lunch” 2020
Division of Fluid Dynamics
- Session Chair, “Particle-Laden Flows: Let’s Get Together (Clustering)” 2017
Division of Fluid Dynamics

Conference Organization

- Member, Local Organizing Committee 2019
American Physical Society Conference for Undergraduate Women in Physics
co-developed initial conference proposal, chaired Finance and Poster Session Committees
- Co-Chair, Soft Matter Gordon Research Seminar 2017

Proposal Reviewer and Panelist

- National Science Foundation, Engineering Division 2020, 2022, 2025
- Swiss National Science Foundation 2025
- National Science Foundation Graduate Research Fellowship Program 2018, 2021

- American Chemical Society, Petroleum Research Fund Grant Program
selected for special recognition by ACS for excellence in peer reviewing

2022

Journal Reviewer

Science Advances, Proceedings of the National Academy of Sciences, Nature Communications, Physical Review Letters, Journal of Fluid Mechanics, Advanced Functional Materials, Soft Matter, Physical Review E, Physics of Fluids, Langmuir

Membership

- American Physical Society
- American Chemical Society
- Society of Rheology

TEACHING

- PHYSICS 311-1,-2: Mathematical Tools for Physical Sciences (undergraduate), (Fall 2024, Winter 2025) Development: Expanded the differential equations portion of the course by: (1) adding additionally focus on partial differential equations, placing Fourier Series in better context, and (2) Adding a module focused on numerically solving differential equations, teaching students practical skills in a common software package (MATLAB).
- PHYSICS 332-0: Statistical Mechanics (undergraduate), (Spring 2022, Spring 2023)
Development: Replaced a written final with a scaffolded final project. Students chose a research paper to write about, as well as give a short presentation on. This served two learning objectives: (1) helping students discover modern applications of the course material, and (2) receiving training in both written and oral scientific communication.
- PHYSICS 360-0: Advanced Laboratory (undergraduate), (Spring 2019, Fall 2019, Winter 2022, Winter 2023, Winter 2024, Winter 2025)
Development: During my tenure teaching added three additional condensed matter experiments to the course: one exploring the Hall effect, one exploring fluid dynamics, and one exploring Brownian motion. The Hall effect experiment exposed students to basic electronics and cryogenic techniques, the fluid dynamics experiment exposed students to high-speed photography, polymer physics, and image analysis, and the Brownian motion experiment introduced key ideas in both image analysis and colloidal physics.
- PHYSICS 416-0: Statistical Mechanics (graduate), (Winter 2018, Winter 2019)

OUTREACH

- Panelist "The Business of Running a Research Group", UChicagoGRAD Winter Mini-Course (2025)
- "Topics in Physics": Soft Matter', APS CUWiP, (2025)
- Seminar Speaker, "All you can be with your degree", (virtual) Syracuse University (2024)
- Panelist "Research Statement Best Practices (STEM)", UChicagoGRAD Academic Job Market Summer Camp (2023)
- Panelist, STEAM (Science, Technology, Engineering, Arts, and Math) Speed Interviews (2019, 2020, 2021)
- Judge, Northwestern Undergraduate Research Expo (2018, 2019, 2020, 2021, 2022)
- SWEE "Career Day for Girls", Lab tour (2020)
- Panelist, "Graduate Admissions", APS CuWiP at University of Chicago (2020)
- Panelist "First Years as Faculty in STEM" panel, UChicago GRADUCon (2019)
- Panelist, "Graduate Admissions", APS CuWiP at Northwestern (2019)
- "Science Mysteries", SWEE Career Day (2018)
- Courant Splash lecturer, "Squashing droplets and popping bubbles" (2017)
- CSMR lab tour guide, NYU STEP program (2015, 2014)
- Director of Education, NSF REU Summer Program (2008, 2010, 2011)
- Physics with a Bang! (UChicago annual outreach event), High-speed photographer, Lab Guide, Tour Guide (2008-2013)

- Young Scientists Club, Andrew Carnegie Elementary School (2009-2010)
- Lecturer, Science Week at Ray School (2009)