

Michelle Driscoll

Northwestern University
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Appointments

Northwestern University, Evanston, IL (9/2017 - current)
Assistant Professor, Department of Physics and Astronomy

New York University, New York, NY (9/2014 - 9/2017)
Postdoctoral Research Associate, Department of Physics, Center for Soft Matter Research
Advisor: Paul Chaikin

Education

University of Chicago, Chicago IL (2007 - 2014)
Ph.D., Physics
Thesis: *Geometric control of failure behavior in perforated sheets*
Advisor: Sidney R. Nagel

University of Texas, Austin, TX (2003 - 2007)
B.S. Physics, with honors
B.S. Mathematics

Publications

- [8] *A minimal model for a hydrodynamic fingering instability in microroller suspensions*
B. Delmotte, **M.M. Driscoll**, P.M. Chaikin, A. Donev
Phys. Rev. Fluids 2, 114301 (2017)
- [7] *Hydrodynamic shocks in microroller suspensions*
B. Delmotte, **M.M. Driscoll**, P.M. Chaikin, A. Donev
Phys. Rev. Fluids, 2, 092301 (2017)
- [6] *Unstable fronts and motile structures formed by microrollers*
M.M. Driscoll, B. Delmotte, M. Youssef, S. Sacanna, A. Donev, P.M. Chaikin
Nature Physics 13: 375-379 (2017)
- [5] *The role of rigidity in controlling material failure*
M.M. Driscoll, B. Chen, T. Beuman, S. Ulrich, S.R. Nagel V. Vitelli
Proc. Nat. Acad. Sci. 113 (39), 10813-10817 (2016)
- [4] *Geometric control of failure behavior in perforated sheets*
M.M. Driscoll
Phys. Rev. E 90, 062404 (2014)

- [3] *Creation of prompt and thin-sheet splashing by varying surface roughness or increasing air pressure*
A. Latka, A. Strandburg-Peshkin, **M.M. Driscoll**, C.S. Stevens, S.R. Nagel
Phys. Rev. Lett., 109, 054501 (2012)
- [2] *Ultrafast interference imaging of air in splashing dynamics*
M. M. Driscoll and S.R. Nagel
Phys. Rev. Lett., 107 154502 (2011).
- [1] *Thin film formation during splashing of viscous liquids*
M.M. Driscoll, C. S. Stevens, S.R. Nagel
Phys. Rev. E, 82 036302 (2010).

Awards and Honors

- 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

- 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 Talks

- Condensed Matter/AMO Seminar, University of Michigan (2017)
- Physics Colloquium, Syracuse University (2017)
- Physics Colloquium, Clark University (2017)
- Complex Systems Seminar, Northwestern University (2016)
- Active and Smart Matter Workshop, Syracuse University (2016)
- Soft—Meta Matter Workshop, University of Chicago (2014)
- Soft Matter Seminar, New York University (2014)
- Soft Matter Seminar, Georgetown University (2014)
- MRSEC Seminar, University of Pennsylvania (2014)
- Env. Sciences Seminar, Massachusetts Institute of Technology (2014)
- Mech. Engineering Seminar, Yale University (2014)
- Fluids Seminar, Brown University (2012)
- APS March Meeting, Boston, MA (2012)

Contributed Talks

APS March Meeting, (2017, 2016, 2015, 2014)

APS Division of Fluid Dynamics, (2017, 2016, 2010, 2009, 2008)

NSF Midwest MRSEC Symposium, Madison, WI (2009)

Student Mentoring

Michio Tanaka, NYU undergraduate, “Confinement effects in the granular Rayleigh-Taylor Instability”, Spring 2016-present

Bilyana Tzolova, NSF MRSEC REU undergraduate student, “Light-powered swimming emulsion drops”, Summer 2015

Mengfei He, 1st year grad student, “Interference imaging of the forced wetting contact line instability”, Fall 2012

Andrzej Latka, 1st year grad student, “Using surface roughness to suppress viscous drop splashing”, Fall 2010

Ariana Strandburg-Peshkin, NSF MRSEC REU undergraduate student, “Viscous Drop Splashing and Surface Roughness”, Summer 2009

Teaching and Outreach

Courant Splash lecturer, “Squashing droplets and popping bubbles” (2017)

CSMR lab tour guide, NYU STEP program (2015, 2014)

Teaching Assistant, University of Chicago, Chaos, Complexity, and Computers, Statistical and Thermal Physics, Electronics Laboratory (2011,2012)

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)

Service

Co-Chair, Soft Matter Gordon Research Seminar, Summer 2017

Panelist, NSF Graduate Research Fellowship Program Panel (2016, 2018)

Sorter, APS March Meeting program (2014, 2015, 2016)

Graduate Student Representative, Hiring Committee: Dean of Students, University of Chicago Physical Sciences Division (2012)

Referee, Journal of Fluid Mechanics, Physical Review Letters, Physical Review E (2012 - present)