# Saverio E. Spagnolie


**Contact Information**

University of Wisconsin-Madison
Department of Mathematics
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**Research Areas** Fluid Mechanics, Biophysics, Applied Mathematics, Numerical Methods.

**Academic Employment**

| | |
|---|---|
| Associate Professor, Department of Mathematics, University of Wisconsin-Madison | 2018- |
| Courtesy appointment, Department of Chemical & Biological Engineering | 2016- |
| Assistant Professor, Department of Mathematics, University of Wisconsin-Madison | 2012-2018 |
| Postdoctoral Associate, School of Engineering, Brown University | 2011-2012 |
| Postdoctoral Associate, Department of Mechanical/Aerospace Engineering<br>University of California, San Diego | 2008-2011 |

**Education**

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|---|---|
| Ph.D., Mathematics, Courant Institute, New York University | 2004-2008 |
| M.S., Mathematics, Courant Institute, New York University | 2002-2004 |
| B.S., Applied Mathematics, University of Colorado, Boulder | 1998-2002 |

**Other Employment**

| | |
|---|---|
| Long-term visiting scientist, Flatiron Institute, Center for Computational Biology | 2018- |
| Research assistant, Credit Modeling and Corporate Bond Strategy, Citigroup, NY | 2006 |

**Teaching**

**University of Wisconsin-Madison**

| | |
|---|---|
| MATH 222, Calculus and Analytic Geometry | Spring 2021 |
| MATH 703, Methods of Applied Mathematics I (g) | Fall 2020 |
| MATH 222, Calculus and Analytic Geometry | Spring 2020 |
| MATH 703, Methods of Applied Mathematics I (g) | Fall 2019 |
| MATH 514, Numerical Analysis | Fall 2019 |
| Short course on *Pursuit and Evasion in Biological Fluids* (6 lectures) | Summer 2018 |
| MATH 222, Calculus and Analytic Geometry | Spring 2018 |
| MATH 705, Mathematical Fluid Dynamics (g) | Fall 2017 |
| MATH 514, Numerical Analysis | Fall 2017 |
| MATH 320!, Linear Algebra and Differential Equations (honors) | Spring 2017 |
| MATH 222, Calculus and Analytic Geometry | Spring 2017 |
| MATH 320!, Linear Algebra and Differential Equations (honors) | Fall 2016 |
| MATH 222, Calculus and Analytic Geometry | Spring 2016 |
| MATH 320!, Linear Algebra and Differential Equations (honors) | Spring 2016 |
| MATH 320, Linear Algebra and Differential Equations | Fall 2015 |
| MATH 715, Methods of Computational Mathematics II (g) | Spring 2015 |
| MATH 801, Topics in Applied Mathematics: Biological Continuum Mechanics (g) | Spring 2014 |
| MATH 375, Topics in Multivariable Calculus and Linear Algebra (two sections) | Fall 2013 |
| MATH 331, Introduction to Probability and Markov Chain Modeling | Spring 2013 |
| MATH 715, Methods of Computational Mathematics II (g) | Spring 2013 |
| MATH 705, Mathematical Fluid Dynamics (g) | Fall 2012 |

**University of Edinburgh**

| | |
|---|---|
| Short course on *Low-Reynolds-Number Hydrodynamics* (6 lectures) | Spring 2019 |

**Courant Institute, New York University**

| | |
|---|---|
| MATH V63.0121, Calculus I | Spring 2006 |
| MATH V63.0121, Calculus I | Fall 2005 |

Numerical Analysis, ODEs (g, teaching assistant) Fall 2004 - Spring 2005

**University of Colorado, Boulder**

APPM 2360, Linear Algebra and Differential Equations Summer 2003
Calculus, Complex Var., Num. Analysis (teaching assistant) Fall 2000 - Spring 2002

(g) - graduate course

EDITED VOLUME

***Complex Fluids in Biological Systems***, S.E. Spagnolie (Ed.), Springer Biological and Medical Physics / Biological Engineering Series, Springer, 2015.

BOOK CHAPTERS

**Introduction to complex fluids**
A. Morozov and S.E. Spagnolie, *Complex Fluids in Biological Systems*, Springer, pp. 3–51, 2015.

GENERAL AUDIENCE

3. **Dropping slender-body theory into the mud**
S.E. Spagnolie, *J. Fluid Mech. Focus on Fluids*, **862**, 1-4 (2019).

2. **Editorial: Special issue on "Complex Fluids in Biological Systems"**
G. J. Elfring and S.E. Spagnolie, *J. Non-Newtonian Fluid Mech.*, **262**, 1-2 (2019).

1. **Using math to solve riddles about microbiology**
S.E. Spagnolie, *Wisconsin State Journal*, May 6, 2017.

RESEARCH PUBLICATIONS

**2020**

35. **Dynamic and Reversible Shape Response of Red Blood Cells in Synthetic Liquid Crystals**
K. Nayani, A.A. Evans, S.E. Spagnolie, and N.L. Abbott,
*Proc. Natl. Acad. Sci. USA*, (2020).

34. **Shaving and breaking bacterial chains with a viscous flow**
F. Gomand, F. Borges, J. Burgain, W. H. Mitchell, J. Petit, S.E. Spagnolie, and C. Gaiani, *Soft Matter*, (2020).

33. **Programming van der Waals Interactions with Complex Symmetries into Microparticles using Liquid Crystallinity**
H.A. Fuster, X. Wang, X.-G. Wang, E. Bukusoglu, S.E. Spagnolie, and N.L. Abbott, *Science Advances* **6**, eabb1327 (2020).

32. **Molecular simulation of mechanical properties and membrane activities of the ESCRT-III complexes**
T. Mandal, W. Lough, S. E. Spagnolie, A. Audhya, and Q. Cui, *Biophys. J.*, **118**, 1333-1343 (2020).

**2019**

31. **Swimming with small and large amplitude waves in a confined liquid crystal**
M.S. Krieger, S.E. Spagnolie, and T.R. Powers, *J. Non-Newtonian Fluid Mech.*, **273**, 104185 (2019).

30. **Velocity fluctuations in a dilute suspension of viscous vortex rings**
T. Morrell, S.E. Spagnolie, and J.-L. Thiffeault, *Phys. Rev. Fluids*, **4**, 044501 (2019).

29. **Active matter invasion of a viscous fluid: Unstable sheets and a no-flow theorem**
C.J. Miles, A.A. Evans, M.J. Shelley and S.E. Spagnolie, *Phys. Rev. Lett.*, **222**, 098002 (2019).

**2017**

28. **A generalized traction integral equation for Stokes flow, with applications**

**to near-wall particle mobility and viscous erosion**,
W.H. Mitchell and S.E. Spagnolie, *J. Comput. Phys.*, **333**, 462-482, 2017.

27. **Microorganism Billiards**
S.E. Spagnolie, C. Wahl, J. Lukasic, and J.L. Thiffeault, *Physica D.*, **341**, 33-44, 2017.

26. **A locally gradient-preserving reinitialization for level set functions**
L. Li, X. Xu, and S.E. Spagnolie, *SIAM J. Sci. Comput.*, **71**, 274-302, 2017.

**2016**

25. **Straining soft colloids in aqueous nematic liquid crystals**
P.C. Mushenheim, J.S. Pendery, D.B. Weibel, S.E. Spagnolie, and N.L. Abbott,
*Proc. Natl. Acad. Sci. USA*, **113**, 5564-5569, 2016.

**2015**

24. **Bacterial transport of colloids in liquid crystalline environments**
R.R. Trivedi, R. Maeda, N.L. Abbott, S.E. Spagnolie, and D.B. Weibel,
*Soft Matter*, **11**, 8404 - 8408, 2015.

23. **Microscale locomotion in a nematic liquid crystal**
M.S. Krieger, S.E. Spagnolie, and T.R. Powers, *Soft Matter*, **11**, 9115 - 9125, 2015.

22. **Sedimentation of spheroidal bodies near walls in viscous fluids: glancing, reversing, tumbling, and sliding**
W.H. Mitchell and S.E. Spagnolie, *J. Fluid Mech.*, **772**, 600-629, 2015.

21. **Geometric capture and escape of a microswimmer colliding with an obstacle**
S.E. Spagnolie, G. Moreno-Flores, D. Bartolo, and E. Lauga, *Soft Matter*, **11**, 3396 - 3411, 2015.

20. **Swimming and pumping by helical waves in viscous and viscoelastic fluids**
L. Li and S.E. Spagnolie, *Phys. Fluids*, **27**, 021902, 2015.

19. **Stability and dynamics of magnetocapillary interactions**
R. Chinomona, J. Lajeunesse, W.H. Mitchell, Y. Yao, and S.E. Spagnolie,
*Soft Matter*, **11**, 1828-1838, 2015.

**2014**

18. **Locomotion and transport in a hexatic liquid crystal**
M.S. Krieger, S.E. Spagnolie, and T.R. Powers, *Phys. Rev. E*, **90**, 052503, 2014.

17. **The instability of a sedimenting suspension of weakly flexible fibres**
H. Manikantan, L. Li, S.E. Spagnolie, and D. Saintillan, *J. Fluid Mech.*, **756**, 935-964, 2014.

16. **Swimming and pumping of rigid helical bodies in viscous fluids**
L. Li and S.E. Spagnolie, *Phys. Fluids*, **26**, 041901, 2014.
*Editor's Pick*

**2013**

15. **The sedimentation of flexible filaments**
L. Li, H. Manikantan, D. Saintillan, and S.E. Spagnolie, *J. Fluid Mech.*, **735**, 705-736, 2013.

14. **Locomotion of helical bodies in viscoelastic fluids: Enhanced swimming at large helical amplitudes**
S.E. Spagnolie, B. Liu, and T.R. Powers, *Phys. Rev. Lett.* **111**, 068101, 2013.
Accompanied by a Physics Focus article from Philip Ball.

13. **Elastocapillary self-folding: buckling, wrinkling, and collapse of floating filaments**

A. Evans, S.E. Spagnolie, D. Bartolo, and E. Lauga, *Soft Matter*, **9** (5), 1711-1720, 2013.

**2012**

12. **Hydrodynamics of self-propulsion near boundaries: Predictions and accuracy of far-field approximations**
S.E. Spagnolie and E. Lauga, *J. Fluid Mech.*, **700**, 105-147, 2012.

11. **The hydrodynamics of the double-wave structure of insect spermatozoa**
O.S. Pak, S.E. Spagnolie, and E. Lauga, *J. R. Soc. Interface*, **9**, 1908-1924, 2012.

**2011**

10. **Comparative hydrodynamics of bacterial polymorphism**
S.E. Spagnolie and E. Lauga, *Phys. Rev. Lett.*, **106**, 058103, 2011.
Also selected to appear in the *Virtual Journal of Biological Physics Research*, Feb 15, 2011.

9. **A bug on a raft: Recoil locomotion in a viscous fluid**
S. Childress, S.E. Spagnolie, and T. Tokieda, *J. Fluid Mech.*, **669**, 527-556, 2011.

**2010**

8. **Jet propulsion without inertia**
S.E. Spagnolie and E. Lauga, *Phys. Fluids*, **22**, 081902, 2010.
Featured as "Research Highlights" on the Physics of Fluids web site.

7. **Stokesian jellyfish: Locomotion of a bilayer vesicle**
A. Evans, S.E. Spagnolie, and E. Lauga, *Soft Matter*, **6**, 1737-1747, 2010.
Also selected to appear in the *Virtual Journal of Biological Physics Research*, April 15, 2010.

6. **The optimal elastic flagellum**
S.E. Spagnolie and E. Lauga, *Phys. Fluids*, **22**, 031901, 2010.
Also selected to appear in the *Virtual Journal of Biological Physics Research*, March 15, 2010.

5. **Surprising behaviors in flapping locomotion with passive pitching**
S.E. Spagnolie, L. Moret, M.J. Shelley, and J. Zhang, *Phys. Fluids*, **22**, 041903, 2010.

**2009**

4. **Rehinging bi-flagellar locomotion in a viscous fluid**
S.E. Spagnolie, *Phys. Rev. E*, **80**, 046323, 2009.

3. **Shape-changing bodies in fluid: Hovering, ratcheting, and bursting**
S.E. Spagnolie and M.J. Shelley, *Phys. Fluids*, **21**, 013103, 2009.
Featured in "Outside JEB", *Journal of Experimental Biology*, 2009.

**2006**

2. **Periodic sedimentation in a Stokesian fluid**
S. Jung, S.E. Spagnolie, K. Parikh, M. Shelley, and A-K. Tornberg, *Phys. Rev. E*, **74**, 035302, 2006.

**2002**

1. **Probabilistically optimized airline overbooking strategies**
K. Leder, S.E. Spagnolie, and S. Wild, *UMAP Journal*, **23**, 2002.

## Invited Presentations

**2020**

(BIRS-Hangzhou, November, 2020, cancelled)
(BIRS-Banff (Banff International Research Station) November, 2020, cancelled)

**2019**
Frontiers in Applied and Computational Mathematics (FACM), Newark, NJ
Department of Physics, University of Edinburgh, Edinburgh, Scotland
"Mathematics of form in active and inactive media," Isaac Newton Institute, Cambridge, UK
Center for Computational Biology (CCB), Flatiron Institute, New York NY,
Department of Applied Mathematics, University of Colorado, Boulder, CO
Department of Mathematics, University of Hawaii at Manoa, Manoa, HI

**2018**
Department of Physics, New York University, New York, NY
Department of Mathematics, University of Michigan, Ann Arbor, MI
School of Engineering, Brown University, Providence, RI
Department of Applied Mathematics, University of Washington, Seattle, WA
Department of Aerospace & Mechanical Engineering, USC, Los Angeles, CA
AIChE Annual Meeting, Pittsburgh, PA

**2017**
"Form and deformation in solid and fluid mechanics," Isaac Newton Institute, Cambridge, UK
Recent Advances in Nonlinear Waves, Seattle, WA
Courant Institute of Mathematical Sciences, New York University, New York, NY
Simons Foundation, Flatiron Institute, New York, NY
Batsheva de Rothschild seminar on the Physics of Microfluidics, Sde Boker, Israel
SIAM-CSE (Computational Science and Engineering), Atlanta, GA
Department of Mathematics, University of Utah, Salt Lake City, UT

**2016**
UW MRSEC BREW on behalf of IRG-3, Madison, WI
GFD Summer Program, Woods Hole Oceanographic Institute, Woods Hole, MA
Department of Mathematics, University of British Columbia, Vancouver, Canada
Department of Mechanical Engineering, University of British Columbia, Vancouver, Canada
Department of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY
QBio Lecture series, University of Wisconsin-Madison, WI

**2015**
Department of Mathematics, University of Michigan, Ann Arbor, MI
Frontiers in Applied and Computational Mathematics (FACM), Newark, NJ
Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania, PA
Department of Mathematics, Florida State University, Tallahassee, FL
APS March Meeting 2015, San Antonio, TX

**2014**
Department of Mathematics, Massachusetts Institute of Technology, Cambridge, MA
Department of Applied Mathematics, Brown University, Providence, RI
Department of Mathematics, University of Minnesota, Minneapolis, MN

**2013**
Distinguished Lectures in Microbiology, University of Wisconsin-Madison, WI
"Dynamics of Suspensions, Gels, Cells and Tissues," Isaac Newton Institute, Cambridge, UK
Department of Mathematical Sciences, University of Wisconsin-Milwaukee, WI
Department of Mechanical and Aerospace Engineering, University of California San Diego, CA
Department of Mechanical Science and Engineering, University of Illinois, Urbana-Champaign, IL
Department of Mathematics, Tulane University, New Orleans, LA

**2012**

Mathematical Biosciences Institute (MBI), Columbus, OH
GPS Applied Mathematics Seminar, University of Wisconsin-Madison, WI
SIAM Life Sciences Meeting, San Diego, CA
International Conference on Applied Mathematics (ICAM), City University of Hong Kong, China
Institute of Natural Sciences, Shanghai Jiao Tong University, Shanghai, China (2 parts)
CIRF Seminar, University of California, Santa Barbara, CA
Department of Aero/Mechanical Engineering, University of Southern California, Los Angeles, CA
Department of Applied Mathematics, Naval Postgraduate School, Monterey, CA
Department of Mathematics, University of Wisconsin-Madison, WI
Department of Applied Mathematics, University of California, Merced, CA

**2011**

Courant Institute of Mathematical Sciences, New York University, New York, NY
Department of Mathematics, Massachusetts Institute of Technology, Cambridge, MA
School of Engineering, Brown University, Providence, RI
Department of Mechanical Engineering, Technion - Israel Institute of Technology, Haifa, Israel
Department of Mathematics, Duke University, Durham, NC
Department of Mathematics, University of North Carolina, Chapel Hill, NC
Department of Structural Engineering, University of California San Diego, CA

**2010**

Department of Mathematics, University of California, Berkeley, CA
Department of Mathematics, University of Wisconsin, Madison, WI
"Fluid Dynamics: From Theory to Experiment" conference, Montana State U., Bozeman, MT
Institute for Mathematics and its Applications (IMA) workshop, University of Minneapolis, MN

**2009**

Department of Mechanical Engineering, University of California, Los Angeles, CA
Department of Applied Mathematics, University of Colorado, Boulder, CO
Department of Applied Mathematics, University of California, Davis, CA
Center for Theoretical Biological Physics, University of California San Diego, San Diego, CA

**2008**

Department of Mechanical and Aerospace Engineering, University of California, La Jolla, CA
Department of Mathematics, New Jersey Institute of Technology, Newark, NJ

## Contributed Presentations

**2019**

72nd Meeting of the APS Division of Fluid Dynamics, Seattle, WA

**2017**

70th Meeting of the APS Division of Fluid Dynamics, Denver, CO

**2016**

69th Meeting of the APS Division of Fluid Dynamics, Portland, OR

**2015**

86th Annual Meeting of the Society of Rheology, Baltimore, MD
68th Meeting of the APS Division of Fluid Dynamics, Boston, MA
Department of Mathematics, University of Wisconsin-Madison, Madison, WI

**2014**

SIAM Annual Meeting 2014, Chicago, IL

67th Meeting of the APS Division of Fluid Dynamics, San Francisco, CA
APS March Meeting 2014, Denver, CO

**2013**

85th Annual Meeting of the Society of Rheology, Montréal, Québec, Canada
66th Meeting of the APS Division of Fluid Dynamics, Pittsburgh, PA

**2012**

Fluids and Elasticity 2012, San Diego, CA
65th Meeting of the APS Division of Fluid Dynamics, San Diego, CA
APS March Meeting 2012, Boston, MA
Aspen Center for Physics - *Growth and Form: Pattern Formation in Biology*, Aspen, CO (poster)

**2011**

64th Meeting of the APS Division of Fluid Dynamics, Baltimore, MD
New England Workshop - Mechanics of Materials and Struct. (NEW.Mech) MIT, Cambridge, MA
7th International Conference on Bio. Phys. (ICBP), University of California San Diego, CA (poster)
5th Southern California Symp. on Flow Physics, University of Southern California, Los Angeles, CA

**2010**

63rd Meeting of the APS Division of Fluid Dynamics, Long Beach, CA
"Fluid Dynamics: From Theory to Experiment", Montana State U., Bozeman, MT (poster)
Institute for Mathematics and its Applications workshop, University of Minneapolis, MN (poster)
4th Southern California Symposium on Flow Physics, University of California, Irvine, CA
62nd Meeting of the APS Division of Fluid Dynamics, Minneapolis, MN

**2009**

3rd Southern California Symposium on Flow Physics, University of California San Diego, CA
61st Meeting of the APS Division of Fluid Dynamics, San Antonio, TX

**2005-2008**

American Mathematical Society (AMS) Spring Eastern Meeting, New York, NY
61st Meeting of the APS Division of Fluid Dynamics, Salt Lake City, UT (poster)
Citigroup, New York, NY
60th Meeting of the APS Division of Fluid Dynamics, Chicago, IL (video)

## Honors/Awards

- UW-Madison Annual Award for Mentoring Undergraduates in Research, Scholarly, and Creative Activities, 2015
- UW-Madison Honored Instructor: 2015, 2017, 2018, 2020
- National Defense Science and Engineering Graduate Fellowship (DoD), 2002-2005

## Service

**Organization:**

- Founder, Madison Applied Math Lab at UW-Madison, 2015 - present
- Organizer, "Workshop: Mathematical Fluids, Materials, and Biology (ShelleyFest)," University of Michigan, Ann Arbor, June 2019
- Organizer, "Workshop on Complex Fluids in Biological Systems," BIRS (Banff International Research Station), July 2018
- Editor, Special issue of JNNFM on "Complex Fluids in Biological Systems," 2019
- Moderator for the arxiv.org physics.flu-dyn category, 2016 - 2018
- Biolocomotion and Fluid-Body Interactions @ SIAM Annual Meeting, 2014 (12 mini-symposia)
- Applied and Computational Math Seminar (UW-Madison, Mathematics), 2012 - present

- APS March 2012 Sorters Meeting
- A Conference in Memory of Thomas Bringley, New York University, March 2009

**Committees (UW-Madison):**

- Dissertation defenses: Hannah Tuson (Biochem.), Sept. 2012; Qin Li (Math), May 2013; Leland Jefferis (Math), Apr. 2014; Zhennan Zhou (Math), Apr. 2014; Diane Holcomb (Math), Apr. 2014; Beth Skubak Wolf (Math), May 2014; Lei Li (Math), July 2015; Kushal Sinha (Chem. Biol. Eng.), August 2015; Daniel Abras (CBE), Oct. 2015; Yu Sun (Math), Dec. 2015; Xiaoqian Xu (Math), Apr. 2016; Peter Mueller (Math), May 2016; William Mitchell (Math), May 2017; Huanyu Wen (Math), May 2017; Sung-Ning Wang (CBE), June 2017; Anubhav Kushwaha (CBE), June 2017; Frank Nguyen (CBE), July 2018; Xuanrong Guo (CBE), August 2018
- Qualifying exam (Computational Math), 2012 - 2016
- Fundraising/Newsletter, Fall 2013
- Undergraduate advising (Math), Fall 2013 - present
- Undergraduate advising (AMEP), Fall 2013 - present
- Math/Botany IT search committee, Spring 2014
- Library, Fall 2012 - Spring 2013

**University Committees (UW-Madison):**

- AMEP Program Committee, Fall 2016 - present
- UW-Madison Mentoring Undergraduates in Research Award Selection Committee, 2016

**Refereeing:**

- Bioinspiration & Biomimetics, Biophysical Journal, Computers and Fluids, Current Opinion in Colloid and Interface Science, European Physical Journal E, IMA Journal of Applied Mathematics, International Journal of Non-Linear Mechanics, Journal of Computational Physics, Journal of Fluid Mechanics, Journal of Mathematical Biology, Journal of Non-Newtonian Fluid Mechanics, Journal of Theoretical Biology, Physical Review E, Physical Review Letters, Physics Letters A, Physics of Fluids, Physical Review Fluids, PLoS Computational Biology, Proceedings of the Royal Society A, Quarterly Journal of Mechanics and Applied Mathematics, Scientific Reports, SIAM Undergraduate Research Online, Soft Matter, Theoretical and Computational Fluid Dynamics, European Journal of Mechanics B

**Educational outreach:**

- "Good Math-ternoon", Franklin Elementary, K-12 outreach, Feb. 2020
- Faculty advisor for Research Experiences for Undergraduates (REU), UW-Madison, Summer 2013 and Summer 2015
- Faculty leader for undergraduate COMAP Mathematical Contest in Modeling at UW-Madison
- Presented at Kauai Community College on "The Mathematics of Love," 2019
- Judge, Kauai Regional Science and Engineering Fair, Seniors and Juniors, 2019
- Participant in UW-Madison outreach to Puerto Rico via Partnerships for Research and Education in Materials (NSF - PREM), Fall 2012-present
- Presented at the UW Research Computing Workshop on Matlab/Mathematica, Sept. 2015
- Presented at the 50th Annual Wisconsin Math/Engineering/Science Talent Search Honors Day on "The Mathematics of Love," May, 2014
- Presented in the UW Microbiology club on "Swimming in viscous fluids," October, 2014
- UW Math Circle (lecture for middle- and high-school students on "Random walks: how gamblers lose and microbes diffuse"), University of Wisconsin-Madison, Fall 2012
- cSplash High School Festival (lecture on "Random Walks and Brownian Motion")

New York University, Spring 2008
- High School Honors Institute (lecture on "Interacting Population Dynamics")
University of Colorado, Summer 2002
- Lectures in Physical Biology, Shanghai Jiao Tong University, Spring 2012

## Grants

*Collaborative Research: Sharing the Strain - Synthetic Liquid Crystals as Soft Biomaterials*

Role: co-PI (PI Abbott) — Award period: 07/01/20–01/01/21
Source: NSF BMAT-2003819 — Total award amount: $350,000

*Workshop: Mathematical Fluids, Materials, and Biology*

Role: PI (co-PIs Alben, Thomases, Veerapaneni) — Award period: 06/12/19–06/14/19
Source: NSF DMS-1903035 — Total award amount: $22,500

*Multi-Scale Models for Membrane Fission Catalyzed by the Endosomal Sorting Complexes Required for Transport*

Role: PI (co-PIs Cui, Audhya) — Award period: 07/01/17–06/31/21
Source: NSF/NIH: DMS/NIGMS — Total award amount: $1,200,000

*Configurations and dynamics of deformable particles in a liquid crystal*

Role: PI (co-PI Graham) — Award period: 01/2015–06/2017
Source: NSF MRSEC Seed Grant — Total award amount: $193,162

## Advising activities

Visiting scholars:
- Jorge Bailon-Cuba (University of Puerto Rico)
- Faustine Gomand (University of Lorraine, France)

Postdocs:
- Prerna Gera (UW-Madison)
- Arthur Evans (UW-Madison)

Graduate Students:
- Bryan Crompton (UW-Madison)
- Lei Li (UW-Madison) [John Nohel Prize in Applied Mathematics, UW-Madison, 2015]
- Wilson Lough (UW-Madison), UW-Madison, 2017-
- Will Mitchell (UW-Madison) [John Nohel Prize in Applied Mathematics, UW-Madison, 2017]
- Tom Morrell (UW-Madison)

Undergraduate students:
- Sam Christianson (UW-Madison)
- Rujeko Chinomona (REU student at UW-Madison from Georgia College)
- Chris DuPre (UW-Madison)
- Shiyang Fang (REU student at UW-Madison)
- Weiqiao Han (REU student at UW-Madison from UC Berkeley)
- Janelle Lajeunesse (REU student at UW-Madison)
- Joseph Lukasik (UW-Madison)
- Aaron Raucher (Colorado State University)
- Austyn Simpson (UW-Madison)
- Anne Ulrich (UW-Madison), UW-Madison Hilldale Research Fellowship, 2017
- Colin Wahl (UW-Madison), UW-Madison Hilldale Research Fellowship, 2015
- Yining Wang (UW-Madison)
- Thomas Wilkinson (UW-Madison)
- Max Wrenn (UW-Madison)

- Chi Zhang (UW-Madison)
- Dake Zhang (REU student at UW-Madison)
- Yue Zhao (UW-Madison)
- Zonghao Zou (UW-Madison)

High-school students:
- Christopher Xu