

All events will be held in Room 001 of the Life Sciences Building unless otherwise noted.

## **SUNDAY, June 19**

5:30 pm - 7:30 pm: Registration and Welcoming Reception in the Milton Atrium of the Life Sciences Complex (LSC)

7:30 pm - 8:30 pm: **Career Advancement Panel: Angela Au** (Bristol-Myers-Squibb), **Lisa Manning** (SU), **Michael Murrell** (Yale), **Katherine Wright** (PRL) LSB 105, small auditorium

Moderator: TBA

## **MONDAY, June 20**

8:30 am - 9:00 am: Registration & Continental Breakfast, Milton Atrium

9:00 am - 9:10 am: **Welcoming Remarks** from Vice Chancellor and Provost, **Michele Wheatly** and greetings from Dean of the College of Engineering and Computer Science, **Teresa Dahlberg**

9:10 am - 12:30 pm: **Collective effects in groups of organisms** - Discussion Leader: **Cristina Marchetti** (Syracuse University)

- 9:10 am – 9:45 am: "*Ants that can flow like a fluid, or spring back like a solid*" **David Hu** (Georgia Tech)
- 9:45 am – 10:20 am: "*From flies, to mosh pits and Mecca: predicting the collective behavior of organisms*" **Itai Cohen** (Cornell University)
- 10:20 am - 10:35am: "Two spheres and a spring make a good swimmer" **Daphne Klotsa** (University of North Carolina)
- 10:35 am – 11:05 am: Coffee Break
- 11:05 am – 11:20 am: "Viscoelasticity promotes collective swimming of sperm" **Chih-Kuan Tung** (North Carolina A&T State University)
- 11:20 am - 11:35 am: "Dynamic morphology in honeybee swarms" **Orit Peleg** (Harvard University)
- 11:35 am – 11:50 am "Collective motion at the macro-scale" **Sophie Ramanarivo** (UCSD)
- 11:50 am – 12:25 pm: "*Self-driven phase transitions in populations of *Myxococcus xanthus**" **Josh Shaevitz** (Princeton University)

12:30 pm – 2:00 pm: Lunch on your own on Marshall Street or at SU

2:00 pm – 5:45 pm: **Topology and geometry** - Discussion Leader: **Xiaoming Mao** (University of Michigan)

- 2:00 pm - 2:35 pm: “*Topological sound waves in confined active fluids*” **Vincenzo Vitelli** (University of Leiden, The Netherlands)
- 2:35 pm - 3:10 pm: “*Active matter and curvature*” **Rastko Sknepnek** (University of Dundee, UK)
- 3:10 pm – 3:25 pm: “Statistical mechanics of ribbons” **Andrej Kosmrlj** (Princeton University)
- 3:25 pm – 3:55 pm Coffee break
- 3:55 pm – 4:10 pm: “Self folding of polymer sheets” **Ying Liu** (North Carolina State University)
- 4:10 pm – 4:25 pm: “Programming smart matter via topology” **Zeb Rocklin** (University of Michigan)
- 4:25 pm – 4:40 pm: “Floxed metamaterials” **Martin Van Hecke** (Amolf and Leiden University)
- 4:40 pm – 4:55 pm: “Rigid origami as a marginal solid” **Bryan Chen** (UMass-Amherst)
- 4:55 pm – 5:30 pm: “*Geometric control of active collective motion*” **David Santillan** (UCSD)

5:30 pm - 7:00 pm: Dinner on your own

7:00 pm – 9:00 pm: **Poster Session I**, Milton Atrium

## **TUESDAY, June 21**

8:30 am - 9:00 am: Registration & Continental Breakfast, Milton Atrium

9:00 am - 12:45 pm: **Adaptive matter** - Discussion Leader: **Jay Henderson** (Syracuse University)

- 9:00 am - 9:35 am: “*Symmetry and adaptation in C. elegans touch response*” **Massimo Vergassola** (UCSD)
- 9:35 am – 10:10 am: “Swimming bacteria in 3D structured environments” **Roberto di Leonardo** (University of Rome, Italy)
- 10:10 am – 10:25 am: “Spatial dispersal of bacterial colonies induces a phase transition from local to global quorum sensing” **Tahir Yusufaly** (USC)
- 10:25 am – 10:40 am: “Living liquid crystals based on swimming bacteria in chromonics” **Oleg Lavrentovich** (Kent State University)
- 10:40 am – 11:10 am: Coffee Break
- 11:10 am – 11:25 am: “Shape regulation generates elastic interaction between active force dipoles” **Yair Shokef** (Tel Aviv University)
- 11:25 am – 11:40 am: “Micromechanical model of collective cell migration” **Taeyoon Kim** (Purdue University)

- 11:40 am – 12:15 pm “*Physical Guidance of Cell Migration*” **Wolfgang Losert** (University of Maryland, College Park)
- 12:15 pm – 12:30 pm “*Mechanics without Muscles: Rapid Motion of the Venus flytrap and Bio-mimetic Structures*” **Zi Chen** (Thayer School of Engineering, Dartmouth College)

12:30 pm – 2:00 pm: Lunch your own on Marshall Street or at SU

2:00 pm – 3:30 pm: Breakout discussion and summary

3:30 pm – 3:50 pm: PRL and PRX

3:50 - 5:30 pm: **Poster Session II**, Milton Atrium

\*Poster awards will be announced after dinner

5:30 pm – 7:30 pm: **Workshop Reception/ Dinner, Milton Atrium**

7:30 pm – 8:30 pm: **Public Lecture:** “*The rise of colloidal machines*” (LSB 001) **Sharon Glotzer (University of Michigan)** **This event is free and open to the public**

## **WEDNESDAY, June 22**

8:30 am - 9:00 am: Registration & Continental Breakfast, Milton Atrium

9:00 am - 12:45 pm: **Tissues** - Discussion Leader: **Lisa Manning** (Syracuse University)

- 9:00 am - 9:35 am: “*Why do rigid tumors contain soft cancer cells?*” **Josef Kas** (University of Leipzig, Germany)
- 9:35 am – 10:10 am: “*Cell sheets as soft active matter*” **Silke Henkes** (University of Aberdeen, UK)
- 10:10 am – 10:25 am: “Mechanical energy in tissues and its connection to cell geometry and statistics” **Sasha Hilgenfeldt** (University of Illinois)
- 10:25 am – 11:00 am: Coffee Break
- 11:00 am – 11:15 am: “Insights into active multicellular nematics” **Victor Yaskunsky** (Institute Curie)
- 11:15 am – 11:30 am: “Activity-induced fluidization in dense glassy systems” **Chandan Dasguta** (Indian Institute of Science, Bangalore)
- 11:30 am – 12:05 pm: “*TBD*” **Frank Julicher** (Max Planck Institute, Dresden, Germany)
- 12:05 pm – 12:40 pm: “*Jamming and glassy behavior in dense biological tissues*” **Max Bi** (Rockefeller University)

12:45 pm – 2:00 pm: Lunch on your own on Marshall Street or at SU

2:00 pm – 5:50 pm: **Colloids, nanoparticles, and nematics** - Discussion Leader: **Annette Zippelius** (University of Gottingen)

- 2:00 pm - 2:35 pm: “*Understanding dense active nematics from microscopic models*” **Hugues Chate** (SACLAY)
- 2:35 pm - 3:10 pm: “*TBD*” **Sharon Glotzer** (University of Michigan)
- 3:10 pm – 3:25 pm: “Knitting with colloids: active assembly at the micron scale” **Carl Goodrich** (Harvard)
- 3:25 pm – 3:40pm: “Control of active nematics from oriented surfaces” **Francesc Sagues** (University of Barcelona)
- 3:40 pm – 4:10 pm: Coffee Break
- 4:10 pm - 4:25 pm: “Real and artificial interactions of artificial microswimmers” **Frank Cichos** (Universitat Leipzig)
- 4:25 pm – 4:40 pm: “Instabilities of colloidal rollers near a horizontal floor” **Michelle Driscoll** (NYU)
- 4:40 pm – 5:15 pm: “*On demand fluids: to yield or not to yield?*” **Roseanna Zia** (Cornell University)
- 5:15 pm – 5:50 pm: “*Activity-enhanced assembly of nanoparticles*” **Angelo Cacciuto** (Columbia University)

5:50 pm - 8:00 pm: Dinner on your own

8:00 pm -- **Concert by JACK Quartet** featuring the World Premiere of *Hexacorda Mollia*, a new piece by **Andrew Waggoner**, Composer and Professor of Composition at the Syracuse University Setnor School of Music inspired by the theme *Order from Disorder* and composed for the Syracuse University *Soft Matter* program (Milton Atrium of the Life Science Center) **This event is free and open to the public**

## **THURSDAY, June 23**

8:30 am - 9:00 am: Registration & Continental Breakfast, Milton Atrium

9:00 am - 12:15 pm: **Cellular mechanics** - Discussion Leader: **Jen Schwarz** (Syracuse University)

- 9:00 am - 9:35 am: “*Isotropic actomyosin promotes telescopic contractility*” **Michael Murrell** (Yale University)
- 9:35 am – 9:50 am: “Competing pathways of contraction in active polymer networks” **Shiladitya Banerjee** (University of Chicago)
- 9:50 am – 10:05 am: “Walking the tightrope” **Viva Horowitz** (Hamilton College)

- 10:05am – 10:35 am: Coffee Break
- 10:35 am - 11:10 am: “*Active matters: Self-organization and stress pattern formation in actomyosin cortices*” **Nikta Fahkri** (MIT)
- 11:10 am - 11:25 am: “Active linkers in non-equilibrium filament networks: contractile rings and simple active gels” **Kristian Mueller-Nedebock** (Stellenbosch University)
- 11:25 am – 11:40 am: “Biomimetic systems to study cell shape changes powered by acto-myosin dynamics” **Clement Campillo** (Université d'Evry Val d'Essonne)
- 11:40 am – 12:15 pm: “*Mechanism and function of chromatin positional dynamics in interphase*” **Alexandra Zidovska** (New York University)

12:15 pm – 12:30 pm Closing Remarks