

Syracuse University

College of Arts & Sciences



M. Cristina Marchetti

William R.
Kenan
Distinguished
Professor

Department of Physics,
University of California,
Santa Barbara

✉ cmarchetti@ucsb.edu

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[Research Page](#)

Address

Department of Physics
Broida Hall, Room 1311
University of California Santa Barbara
Santa Barbara, CA 93106-9530

Research Interests

- Hydrodynamics and rheology of active fluids and gels.
- Collective behavior of bacterial suspensions and other self-driven organisms.
- Cell motility and the mechanical properties of the cell cytoskeleton.
- Collective transport in disordered systems: vortex lines in superconductors, charge density waves.
- Dynamics of glassy systems.

News Articles

[Curious Properties](#)

[M. Cristina Marchetti Named Distinguished Professor](#)

[Physicist Awarded NSF Grant to Study Collective Behavior of Active Matter](#)

[Physicists Awarded NSF Grant to Study Cancer-Cell Behavior](#)

[Physicist Named Editor of Top Scientific Journal](#)

[Cristina Marchetti appointed Editor at PRX](#)

[The Physics of Life](#)

[Two Syracuse University Professors Elected to American Academy of Arts and Sciences](#)

[Syracuse Physicists Explore Biomimetic Clocks](#)

[Simmons Foundation Funds Physics, Mathematics Researchers](#)

Education

1982 Ph.D. in Physics
University Florida, Gainesville

1978 Laurea in Physics cum laude
University of Pavia, Italy

Awards & Professional Honors

- Fellow of the American Physical Society
- William R. Kenan, Jr. Professorship
- Associate Director of the Syracuse Biomaterials Institute, 2007-present
- Chancellor's Citation for Academic Achievement, Syracuse University, 2005
- Rotschild-Mayent Sabbatical Fellowship, Institut Curie, Paris, 2007
- Principal Investigator and Member of the Board of Directors of the Boulder School for Condensed Matter and Materials Physics, <http://boulder.research.yale.edu>
- Vice-Chair and Chair of the Group of Statistical and Nonlinear Physics of the American Physical Society (2005-2008).

Selected Publications

Sheared active fluids: thickening, thinning and vanishing viscosity, L.Giomi, T. B. Liverpool and M. Cristina Marchetti, Phys. Rev. E 81, 051908 (2010).

Statistical mechanics and hydrodynamics of Bacterial Suspensions, Aparna Baskaran and M. Cristina Marchetti, Proc. Nat. Acad. Sci. 106, 15567-15572 (2009).

Mechanical response of active gels, T. B. Liverpool, M. C. Marchetti, J.-F. Joanny and J. Prost, EuroPhys. Lett. 85, 18007 (2009).

Enhanced diffusion and ordering of self-propelled rods, Aparna Baskaran and M. Cristina Marchetti, Phys. Rev. Lett. 101, 268101 (2008).

Depinning in a two-layer model of plastic flow, P. Le Doussal, M. C. Marchetti, K. J. Wiese, Phys. Rev. B 78, 224201 (2008). (28 pages).

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College of Arts and Sciences, 301 Hall of Languages. Phone: 315.443.3150

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