Haicen Yue

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Education

- **University of California, San Diego** — **La Jolla, CA**
  Ph.D. Physics, Advisor: Wouter-Jan Rappel — *Sept 2011–Jun 2018*
  Dissertation: Models to study the mechanism of single and collective cell migration
- **Peking University** — **Beijing, China**
  B.S. Physics — *Sept 2007–Jun 2011*

Professional Experience

- **Physics Department, University of Vermont** — **Burlington, VT**
  Assistant Professor — *Aug 2023 – Present*
- **Physics Department, Emory University** — **Atlanta, GA**
  Postdoc Fellow, Advisor: Daniel M. Sussman — *Aug 2020–July 2023*
- **Courant Institute of Mathematical Sciences, New York University** — **New York, NY**
  Postdoc Associate, Advisor: Alex Mogilner — *Sept 2018–Aug 2020*

Publications

Y. Sun, B. Reid, Y. Zhang, K. Zhu, F. Ferreira, A. Estrada, Y. Sun, B. Draper, H. Yue, C. Copos, et al., "Electric field-guided collective motility initiation of large epidermal cell groups", Molecular Biology of the Cell, mbc–E22 (2023).

Y. Y. Bernadskaya, H. Yue, C. Copos, L. Christiaen, and A. Mogilner, "Supracellular organization confers directionality and mechanical potency to migrating pairs of cardiopharyngeal progenitor cells", Elife **10**, e70977 (2021).

R. Karmakar, M.-H. Tang, H. Yue, D. Lombardo, A. Karanam, B. A. Camley, A. Groisman, and W.-J. Rappel, "Cellular memory in eukaryotic chemotaxis depends on the background chemoattractant concentration", Physical Review E **103**, 012402 (2021).

H. Yue, B. A. Camley, and W.-J. Rappel, "Minimal network topologies for signal processing during collective cell chemotaxis", Biophysical Journal (2018).

A. Islam, H. Yue, M. Scavello, P. Haldeman, W.-J. Rappel, and P. G. Charest, "The cAMP-induced G protein subunits dissociation monitored in live Dictyostelium cells by BRET reveals two activation rates, a negative effect of caffeine and potential role of microtubules", Cellular signalling (2018).

R. M. Lee, H. Yue, W.-J. Rappel, and W. Losert, "Inferring single-cell behaviour from large-scale epithelial sheet migration patterns", Journal of The Royal Society Interface **14**, 20170147 (2017).

X. Chen, J. Chen, B. Shao, L. Zhao, H. Yue, and Q. Ouyang, "Relationship between cancer mutations and parameter sensitivity in Rb pathway", Journal of theoretical biology **404**, 120–125 (2016).

M. Skoge, H. Yue, M. Erickstad, A. Bae, H. Levine, A. Groisman, W. F. Loomis, and W.-J. Rappel, "Cellular memory in eukaryotic chemotaxis", Proceedings of the National Academy of Sciences **111**, 14448–14453 (2014).

J. Chen, H. Yue, and Q. Ouyang, "Correlation between oncogenic mutations and parameter sensitivity of the apoptosis pathway model", PLoS computational biology **10**, e1003451 (2014).

Preprints or Submitted

H. Yue, J. C. Burton, and D. M. Sussman, *Coalescing clusters unveil new regimes of frictional fluid mechanics*, arXiv:2210.06675 [cond-mat.soft].

Y. Sun, H. Yue, C. Copos, K. Zhu, Y. Zhang, Y. Sun, X. Gao, B. Reid, F. Lin, M. Zhao, and A. Mogilner, *Pi3k inhibition reverses migratory direction of single cells but not cell groups in electric field*, bioRxiv: 2020.08.05.238170.

Teaching Experience

- **University of Vermont** — **Department of Physics**
  Lecturer — *Statistical Mechanics (Grad level)* — *2023*
- **New York University** — **Courant Institute of Mathematical Sciences**
  Guest Lecturer — *Mathematical Modeling* — *2019*
- **University of California, San Diego** — **Physics Department**
  Teaching Assistant — *Waves, Optics&Modern Physics Lab* — *2018*
- **University of California, San Diego** — **Physics Department**
  Teaching Assistant — *Physics Laboratory–Mechanics* — *2016*
- **University of California, San Diego** — **Physics Department**
  Teaching Assistant — *Statistical Physics (Grad level)* — *2016*

Presentations

APS March Meeting 2023 — **Las Vegas, Nevada**
- *Invited Talk: Coalescing Clusters Unveil New Regimes of Frictional Fluid Mechanics* — *March 10, 2023*

Soft, Living, Active and Adaptive Matter (SLAAM) seminars — **Virtual**
- *Invited Talk: Non-regular behavior during the coalescence of liquid-like cellular aggregates* — *April 25, 2022*

APS March Meeting 2022 — **Chicago, Illinois**
- *Contributed Talk: Non-regular behavior during the coalescence of liquid-like cellular aggregates* — *March 15, 2022*

74th Annual Meeting of the APS Division of Fluid Dynamics — **Phoenix, Arizona**
- *Contributed Talk: Non-liquid behavior during the coalescence of liquid-like aggregates with cellular units* — *November 21-23, 2021*

Bridging Cellular and Tissue Dynamics from Normal Development to Cancer: Mathematical, Computational, and Experimental Approaches — **Banff, Canada**
- *Talk: Study the mechanical effect in collective movement of two cells using Cellular Potts Model* — *June 17-21, 2019*

Annual Meeting of the International Physics of Living Systems Network — **Paris, France**
- *Talk: Network topologies of signal processing for collective movement of border cell cluster* — *June 25-29, 2017*

Workshop on Modeling in Cell Biology: Scale and Granularity — **San Francisco, CA**
- *Talk: Combining modeling and experiments to probe cellular memory* — *May 18-19, 2015*

The Seventh q-bio Conference — **Santa Fe, New Mexico**
- *Poster: Role of memory in the dynamics of Ras activation in chemotaxing cells* — *August 7-10, 2013*

Grants and Awards

NSF XSEDE Supercomputing Grant (Research allocation)
- *PI: Reconciling discrete particles simulations and continuum hydrodynamics in liquid droplet coalescence* — *2021*

Professional Service

Doctoral Thesis Defence Committees

- **Member** Andrew Lewis, Thesis proposal, Fall 2023

Conference Organization

- **Co-organizer:** APS March Meeting 2024 Focus Session: Biological Active Matter

Peer-reviewer

Physical Review Letter, Physical Review Research, Soft Matter, Biophysical Journal, PLOS Computational Biology, Molecular Biology of the Cell