

# Haicen Yue

Physics Department, University of Vermont, Burlington, VT 05405

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## Education

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- **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

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- **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

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- A. Shee, R. Bandyopadhyay, and **H. Yue**, “Tuning steady shear rheology through active dopants”, *Physical Review Letters* **135**, 168302 (2025).
- C. Copos, Y.-H. Sun, K. Zhu, Y. Zhang, B. Reid, B. Draper, F. Lin, **H. Yue**, Y. Bernadskaya, M. Zhao, et al., “Galvanotactic directionality of cell groups depends on group size”, *Proceedings of the National Academy of Sciences* **122**, e2416440122 (2025).
- H. Yue**, C. R. Packard, and D. M. Sussman, “Scale-dependent sharpening of interfacial fluctuations in shape-based models of dense cellular sheets”, *Soft Matter* **20**, 9444–9453 (2024).
- H. Yue**, J. C. Burton, and D. M. Sussman, “Coalescing clusters unveil regimes of frictional fluid mechanics”, *Phys. Rev. Res.* **6**, 023115 (2024).
- 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).

## Teaching Experience

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- Thermal and Statistical Physics (Undergraduate)
- Intro to Biological Physics ((Undergraduate)
- Quantum Mechanics (Graduate)
- Biological Physics (Graduate)
- Statistical Mechanics (Graduate)

## Invited Presentations

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|---|-----------------------|
| <b>Biological Physics &amp; Physical Biology Seminar</b>                      | <b>Virtual</b>        |
| ○ <i>How Scattered Active Players Shape the Jamming of the Crowd</i>          | <i>Dec 12, 2025</i>   |
| <b>Clark University</b>   | <b>Worcester, MA</b>  |
| ○ <i>Living matter: a novel type of condensed matter</i>                      | <i>April 16, 2025</i> |
| <b>APS March Meeting 2023</b>   | <b>Las Vegas, NV</b>  |
| ○ <i>Coalescing Clusters Unveil New Regimes of Frictional Fluid Mechanics</i> | <i>March 10, 2023</i> |

**Soft, Living, Active and Adaptive Matter (SLAAM) seminars**

**Virtual**

- *Non-regular behavior during the coalescence of liquid-like cellular aggregates*

April 25, 2022

**Grants and Awards**

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**NSF CAREER award**

**Role: PI**

- *Tissues as Adaptive Materials: Investigating the Role of Cellular Adaptability in Tissue Mechanics*

2025-2030

**University Service**

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- Search committee for tenure track position in Mathematics (Fall 2024)
- Inclusive and Excellence Committee for College of Engineering and Mathematical Sciences (2024-)
- Faculty senator representing Physics Department (2025-)
- Served as chair/member of PhD/Master thesis defense committee for **three** students in the College of Engineering and Mathematical Sciences.

**Professional Service**

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Conference/Seminars Organization.....

- **Co-Organizer:** SLAAM(Soft, Living, Active, and Adaptive Matter) Online Seminars

Journal Reviews.....

Physical Review Letter, Physical Review X Life, Physical Review Research, Soft Matter, Biophysical Journal, PLOS Computational Biology, Molecular Biology of the Cell, Nature Communications, Advanced Science

Grant Reviews.....

National Science Foundation (CMMI DIVISION)