Vivek N. Prakash, Ph.D.

Department of Physics
University of Miami
Knight Physics Building, Room 307
1320 Campo Sano Ave
Coral Gables, FL, 33146

Phone: +1 (305) 284-7121
Email: vprakash@miami.edu
Website: www.marinebiophysics.org
Twitter: @Viveknprakash
Google scholar: http://goo.gl/3DTmqp
ORCID: http://orcid.org/0000-0003-4569-6462

Faculty Appointments

- **Assistant Professor** (tenure-track) (01/2020 – present)

  Department of Physics, College of Arts & Sciences, University of Miami

  Secondary Faculty

  Department of Biology, College of Arts & Sciences, University of Miami

  Secondary Faculty

  Department of Marine Biology and Ecology,
  Rosenstiel School of Marine and Atmospheric Science (RSMAS), University of Miami

  Faculty Member

  Dr. John T. Macdonald Foundation Biomedical Nanotechnology Institute (BioNIUM),
  University of Miami

- **Faculty Member, International Team of Collaborators** (2021 – present)

  Centre of Excellence on Complex Systems and Dynamics,
  Indian Institute of Technology Madras (IITM), India

Education and Training

- **Postdoctoral Research Fellow, Biophysics** (2014 – 2019)

  Department of Bioengineering, Stanford University, CA, USA

  Advisor: Prof. Manu Prakash

- **Embryology course: Concepts & Techniques in Modern Developmental Biology**

  Marine Biological Laboratory, MA, USA (2019)

- **Ph.D. Applied Physics** (2009 – 2013)

  Physics of Fluids group, University of Twente, The Netherlands

  Advisors: Prof. Detlef Lohse & Prof. Chao Sun

  Ph.D. Thesis: "Light particles in turbulence" [web link]

- **M.S. Engineering Mechanics** (2007 – 2009)
  Summer Undergraduate Research Fellow (2005 – 2006)

  Engineering Mechanics Unit,
  Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, India

  Advisors: Prof. K. R. Sreenivas & Prof. Jaywant H. Arakeri (Indian Institute of Science)

- **B.E. Mechanical Engineering** (2003 – 2007)

  R.V. College of Engineering, Bangalore, India

Research Interests

- Biomechanics – tissue to organism scale: cell rearrangements, morphogenesis, development
- Biological fluid mechanics – low Reynolds number (*Re*) swimming & feeding in marine invertebrates
- Fluid mechanics, particle-laden flows, turbulent flows, and soft active matter.

Publications

Key Metrics:

Total citations: >449
Total publications in leading peer-reviewed journals in different fields: 12

Physics:
3 in Nature Physics (Impact factor: 20.13; Rank: 2/79 - Physics, Multidisciplinary)
1 in Physical Review Letters (Impact factor: 8.38; Rank: 6/79 - Physics, Multidisciplinary)
1 in New Journal of Physics (Impact factor: 3.53; Rank: 10/79 - Physics, Multidisciplinary)
Mechanics:
3 in Journal of Fluid Mechanics (Impact factor: 3.35; Rank: 17/135 - Mechanics)
1 in Physics of Fluids (Impact factor: 3.51; Rank: 35/135 - Mechanics)
1 in Physical Review Fluids (Impact factor: 2.51; Rank: N/A)
Engineering:
1 in Chemical Engineering Science (Impact factor: 3.87; Rank: 27/135 - Engineering, Chemical)
Biology:
1 in Journal of Experimental Biology (Impact factor: 3.04; Rank: 16/84 - Biology)

Manuscripts under review:

1. A. J. M. Mathijssen, M. Lacienski, **Vivek N. Prakash**, and E. Mossige
   Culinary fluid mechanics and other currents in food science
   (under review in **Reviews of Modern Physics**) (2022)
   (arXiv preprint: `https://arxiv.org/abs/2201.12128`)

Preprints and manuscripts under preparation

1. W. Gilpin, **Vivek N. Prakash**, and M. Prakash
   Rapid behavioral transitions produce chaotic mixing by a planktonic microswimmer
   (arXiv preprint: `https://arxiv.org/abs/1804.08773`)
   (under preparation) (2022)

2. M. S. Bull, **Vivek N. Prakash**, and M. Prakash
   Ciliary flocking and emergent instabilities enable collective agility in a non-neuromuscular animal
   (arXiv preprint: `https://arxiv.org/abs/2107.02934`)
   (under preparation) (2022)

3. R. Asai, **Vivek N. Prakash**, M. Prakash, and T. Mikawa
   Mitotic coordination patterns the early midline gastrulation center in amniotes
   (under preparation) (2022)

Published articles (peer-reviewed), since 2020

13. Mia J. Konjikusic, Chanjae Lee, Yang Yue, Bikram D. Shrestha⋆⋆, Ange M. Nguimtsop, Amjad Horani, Steven Brody, **Vivek N. Prakash**, Ryan S. Gray, Kristen J. Verhey, John B. Wallingford
Kif9 is an active kinesin motor required for ciliary beating and proximodistal patterning of motile axonemes
(accepted, in press, **Journal of Cell Science**) (2022)
(bioRxiv preprint: `https://www.biorxiv.org/content/10.1101/2021.08.26.457815v1`)
⋆⋆graduate mentee

12. **Vivek N. Prakash**, M. S. Bull and M. Prakash
Motility-induced fracture reveals a ductile-to-brittle crossover in a simple animal's epithelia
Nature Physics, 17, 504–511 (2021)
(`https://doi.org/10.1038/s41567-020-01134-7`)

Published articles (peer-reviewed), before 2020

11. W. Gilpin, **Vivek N. Prakash**, and M. Prakash
Dynamic vortex arrays created by starfish larvae
Physical Review Fluids, 2, 090501 (2017)
(`https://doi.org/10.1103/PhysRevFluids.2.090501`)

10. W. Gilpin, **Vivek N. Prakash**, and M. Prakash
Flowtrace: a simple visualization tool for biological fluid flows
Journal of Experimental Biology, 220, 3411-3418 (2017)
(`https://jeb.biologists.org/content/220/19/3411.short`)

    - **Cover** of Journal of Experimental Biology (Volume 220, 2017)

9. W. Gilpin, **Vivek N. Prakash**, and M. Prakash
Vortex arrays and ciliary tangles underlie the feeding-swimming tradeoff in starfish larvae
Nature Physics, 13, 380-386 (2017)
(`https://doi.org/10.1038/nphys3981`)

    Highlights and media attention:
    - **Nature Physics News** & **Views**:
    V. I. Fernandez & R. Stocker, Hydrodynamics: Modus vivendi, Nature Physics, 13, 326-327 (2017)
    - **Nature Physics Editorial** article: A ton for Thompson's tome, Nature Physics 13, 315 (2017)
    - Featured in Principles of Systems Biology, No.15, **Cell Systems**, 4, 252-254 (2017)
    - Featured in **Physics Today** Magazine: 'Biological eigenstrokes', Physics Today 70, 3, 84 (2017)
    - APS/DFD 'Milton van Dyke Award' (Video) (2016)
    - 'First place', Nikon Small World in Motion Competition (2016)
    - 'Image of distinction', Nikon Small World Photomicrography Competition (2016)
    - 'Expert's Choice award', NSF "Vizzies" Visualization challenge (2017)
    - Featured in New York Times, Nature, CBS News, Scientific American, Popular Science and others (2016, 2017)

8. W. Gilpin, **Vivek N. Prakash**, and M. Prakash
Reply to 'Boundary effects on currents around ciliated larvae'
Nature Physics, 13, 521-522 (2017)
(`https://doi.org/10.1038/nphys4166`)

7. **Vivek N. Prakash**, J. M. Mercado, L. van Wijngaarden, E. Mancilla, Y. Tagawa, D. Lohse, and C. Sun
Energy spectra in turbulent bubbly flows
Journal of Fluid Mechanics, 791, 174-190 (2016)
(`https://doi.org/10.1017/jfm.2016.49`)

6. V. Mathai, **Vivek N. Prakash**, J. Brons, C. Sun and D. Lohse
Wake-driven dynamics of finite-sized buoyant spheres in turbulence
Physical Review Letters, 115, 124501 (2015)
(https://doi.org/10.1103/PhysRevLett.115.124501)

5. Y. Tagawa, I. Roghair, **Vivek N. Prakash**, M. van Sint Annaland, H. Kuipers, C. Sun, and D. Lohse
The clustering morphology of freely rising deformable bubbles
Journal of Fluid Mechanics, 721, R2 (2013)
(https://doi.org/10.1017/jfm.2013.100)

4. **Vivek N. Prakash**, Y. Tagawa, E. Calzavarini, J. M. Mercado, F. Toschi, D. Lohse, and C. Sun
How gravity and size affect the acceleration statistics of bubbles in turbulence
New Journal of Physics, 14, 105017, (2012)
(https://doi.org/10.1088/1367-2630/14/10/105017)
(co-corresponding author)
- Featured in New Journal of Physics 'Research Highlights' collection - 2012, 2013
- Part of New Journal of Physics focus issue on 'Dynamics of Particles in Turbulence' - 2013
- New Journal of Physics Video Abstract Prize - 2013

3. J. M. Mercado, **Vivek N. Prakash**, Y. Tagawa, C. Sun, and D. Lohse
Lagrangian statistics of light particles in Turbulence
Physics of Fluids, 24, 055106 (2012)
(https://doi.org/10.1063/1.4719148)
(co-corresponding author)

2. Y. Tagawa, J. M. Mercado, **Vivek N. Prakash**, E. Calzavarini, C. Sun, and D. Lohse
Three-dimensional Lagrangian Voronoi analysis for clustering of particles and bubbles in turbulence
Journal of Fluid Mechanics, 693, 201-215 (2012)
(https://doi.org/10.1017/jfm.2011.510)

1. **Vivek N. Prakash**, K. R. Sreenivas, and J. H. Arakeri
The role of viscosity contrast on plume structure in laboratory modeling of mantle convection
Chemical Engineering Science, 158, 245-256 (2017)
(https://doi.org/10.1016/j.ces.2016.10.012)

Research Funding

Awarded:

- 2021 — "Ciliary-driven flows during development in marine invertebrates", Provost's Research Award 2021 (University of Miami, 6/1/2021 – 5/31/2022, $17,000).
PI: Prakash
- 2021 — "Engineering Corals for Climate Change Resilience", U-LINK (University of Miami - Laboratory for INtegrative Knowledge) Resilience Challenge. (Collaborative inter-disciplinary proposal involving researchers across several schools at UM.
Total funding requested: $99,160, Prakash share: $40,000
PI: Prof. Prannoy Suraneni (UM Civil Engineering)
Co-PI: Prakash

Honors & Awards

- **2022** — SDB Choose Development! Mentor Award, Society of Developmental Biology (SDB)
- **2021** — Provost's Research Award, University of Miami
- **2019** — Max M. Burger Endowed Scholarship, Embryology course, Marine Biological Laboratory
- **2019** — Patricia A. Case Endowed Scholarship, Embryology course, Marine Biological Laboratory
- **2017** — Expert's Choice award, NSF 'Vizzies' Visualization Challenge for Photography
- **2016** — Milton van Dyke Award, American Physical Society, Division of Fluid Dynamics
- **2016** — First place, Nikon Small World in Motion Competition
- **2016** — Image of distinction, Nikon Small World Photomicrography Competition
- **2015** — Honorable mention, Nikon Small World in Motion Competition
- **2013** — New Journal of Physics 'Video Abstract Prize' (based on world-wide public voting)
- **2012, 2013** — New Journal of Physics 'Research Highlights' (Prakash, et al., New J. Phys, 2012)
- **2012** — Jury's Choice Poster Award, Hands-On Research in Complex Systems School, China
- **2008** — Marie Curie Scholarship (EU) award to attend Euromech Fluid Mechanics Conference, UK
- **2007-2009** — JNCASR graduate scholarship, Department of Science & Technology, Govt. of India
- **2007** — Attended the International Astronautical Congress (IAC) (ISRO National student selection)
- **2007** — Best Outgoing Student award in ME, RVCE (Cognizant Technology Solutions)
- **2006** — LG electronics scholarship, 'potential manager award' for the best student in ME, RVCE
- **2005, 2006** — JNCASR Summer Research Fellowship (Undergraduate)
- **2005** — Diploma in Space Sciences (Honors Course), Indian Space Research Organization (ISRO)
- **2003** — Youth Leadership Award, Global Young Leaders Conference, Washington D.C. & NY, USA
- **2002** — Finalist (National level), Intel Science Talent Discovery Fair (ISTDF)

Mentored Students' Honors & Awards

- **2022 - 2023** — SDB Choose Development! Fellow Award, Society of Developmental Biology (SDB)
  Amaya Crichton, Undergraduate student, University of Miami
- **2021 - 2022** — FGLSAMP Scholar Award, Florida-Georgia Louis Stokes Alliance for Minority Participation, NSF funded undergraduate research program
  Christian D. Gibson, Undergraduate student, University of Miami
  Valentina Restrepo, Undergraduate student, University of Miami
- **2022** — Academic Enhancement Research Fellowship, University of Miami
  Samantha Levine, Undergraduate student, University of Miami

Advanced Research Training Schools & Professional Courses

- 2020 – APS-AAPT Workshop for New Physics and Astronomy Faculty (Online)
- 2020 – Society for Developmental Biology - 8th Boot Camp for New Faculty (online)
- 2019 – Embryology: Concepts & Techniques in Modern Developmental Biology, M.B.L. (6 weeks)
- 2018 – Cilia in Evolution, Development and Human Health, Stanford University (1 week)

- 2015 – Developmental Biology in the Ocean, Hopkins Marine Station, Stanford University (3 weeks)
- 2015 – Preparing for Faculty Careers, Stanford University (2 weeks)
- 2012 – Hands-On Research in Complex Systems School, Shanghai, China (2 weeks)
- 2012 – New Challenges in Turbulence Research II, Ecole de Physique, Les Houches, France (1 week)
- 2010 – Tutorial School on Fluid Dynamics: Topics in Turbulence, University of Maryland (2 weeks)
- 2010 – J.M.B.C. courses: *Experimental Techniques* (UTwente), *PIV* (TUDelft), Netherlands (1 week)

Field Experience

- 2021 — R/V Western Flyer, Monterey Bay Aquarium Research Institute (MBARI), Monterey, CA. Mid-water deep-sea expedition in the Pacific Ocean; combining Remotely Operated Vehicle (ROV) survey and imaging, invertebrate animal collection and flow field imaging (07/2021)
  PI: Dr. Kakani Katija, MBARI

Talks & Seminars

Invited Plenary Conference Talks:

Upcoming:

- 2023 — Society for Integrative and Comparative Biology (SICB) Annual Meeting, Symposium on "Micro-scale life, large-scale influencers: Functional consequences of small-scale biophysical processes", Austin, TX (Jan 3-7).

Past:

- 2022 — American Physical Society (APS) March Meeting, Rheology of Tissues session, Chicago, IL (March 14-18).
- 2022 — International Conference of the Developmental Biology of the Sea Urchin and Other Marine Invertebrates, Marine Biological Laboratory, Woods Hole, MA (April 13-17).

Invited Seminars:

Upcoming:

- 2022 — Auburn University, Department of Biological Sciences (Fall 2022, in-person visit and colloquium)

Past:

- 2022 — University of Miami, Department of Civil and Architectural Engineering (virtual seminar)
- 2022 — University of Manchester (U.K.), Dept. of Mechanical, Aerospace and Civil Engineering (virtual seminar)
- 2022 — University of Miami, Department of Chemistry (in-person/virtual hybrid seminar)
- 2021 — Indian Institute of Science Education and Research (IISER), Career Center, Tirupati, India (virtual seminar)
- 2021 — Florida International University, Department of Physics (in-person colloquium)
- 2021 — University of Miami, Regeneration journal club, The Miami Project (virtual seminar)

- 2021 — University of Miami, Dr. John T. Macdonald Foundation Biomedical Nanotechnology Institute (BioNIUM) (virtual seminar)
- 2021 — University of Florida, Department of Physics (virtual colloquium)
- 2021 — Biological Physics & Physical Biology (BPPB) Seminar series online
- 2020 — Northeastern University, Department of Physics (virtual colloquium)
- 2020 — University of Miami, Department of Marine Biology & Ecology, RSMAS
- 2020 — Leibniz University Hannover (Germany), UC Berkeley, The Mechanics Discussions Online Seminar Series
- 2020 — University of Rostock (Germany), Aix Marseille University (France), Interdiscliplinary Online Seminar Series on Biolocomotion
- 2020 — Brandeis University, Materials Research Science and Engineering Center (virtual)
- 2020 — University of Miami, Department of Biology (virtual zoom seminar)
- 2020 — University of Miami, Invertebrate Neuroscience Meeting
- 2019 — Cornell University, Department of Biological and Environmental Engineering
- 2019 — Boston University, Departments of Physics and Biology
- 2019 — University of Miami, Department of Physics
- 2018 — Shriram center basement labs seminar, Prakash Lab, Stanford University, USA
- 2018 — Chan Zuckerberg Biohub Inter-lab Confab #3 (lightning talk, poster), UC San Francisco, USA
- 2013 — JMBC Multi-phase flow group meeting, TATA Steel Europe, The Netherlands
- 2013 — FOM-DROP Meeting, TU Delft, The Netherlands
- 2012 — Stanford University, Department of Bioengineering
- 2012 — University of California, Berkeley, Fluid Mechanics Seminar
- 2012 — University of California, San Diego, Department of Physics
- 2011 — JMBC Turbulence group meeting, TU Eindhoven, The Netherlands

Selected Conference Talks and Posters (contributed):

- 2020 — *Society for Developmental Biology (SDB) Annual Meeting (short talk, poster)* (virtual)
- 2020 — *Society of Integrative* & *Comparative Biology (SICB) Annual Meeting (talk)*, Austin, USA
- 2019 — *American Physical Society, March Meeting (talk)*, Boston, USA
- 2019 — *Society of Integrative* & *Comparative Biology (SICB) Annual Meeting (talk)*, Tampa, USA
- 2018 — *American Society of Cell Biology (ASCB) - EMBO Meeting (talk)*, San Diego, USA
- 2018 — *American Physical Society, DFD Meeting (talk)*, Atlanta, USA
- 2018 — *Santa Cruz Developmental Biology Meeting (poster)*, Santa Cruz, USA
- 2018 — *American Physical Society, March Meeting (talk)*, Los Angeles, USA
- 2018 — *Mechanics of Morphogenesis Meeting (poster)*, Princeton University, USA
- 2018 — *Biophysical Society (BPS), 62nd Annual Meeting (poster)*, San Francisco, USA
- 2018 — *Society of Integrative* & *Comparative Biology (SICB) Annual Meeting (poster)*, San Francisco, USA

- 2015 — *Pan-American Society for Evolutionary Developmental Biology Meeting (poster)*, UC Berkeley, USA
- 2014 — *American Physical Society, 67th Annual Meeting - DFD*, San Francisco, USA
- 2014 — *Active Fluids: Bridging Complex Fluids and Biofluids (poster)*, Aspen, USA
- 2013 — *European Turbulence Conference (ETC) 14*, Lyon, France
- 2013 — *Particles in Turbulence Conference*, Eindhoven, The Netherlands
- 2012 — *American Physical Society, 65th Annual Meeting - DFD*, San Diego, USA
- 2012 — *9th Euromech Fluid Mechanics Conference*, University of Rome, Tor Vergata, Italy
- 2012 — *Particles in Turbulence workshop*, Lorentz Center, Leiden, The Netherlands
- 2011 — *American Physical Society, 64th Annual Meeting - DFD*, Baltimore, USA
- 2011 — *Particles in Turbulence Conference,* University of Potsdam, Germany
- 2010 — *American Physical Society, 63rd Annual Meeting - DFD*, Long Beach, USA
- 2010-2013 — *Physics@FOM Meeting (poster)*, Veldhoven, The Netherlands
- 2010-2013 — *JMBC Burgersdag (poster)*, The Netherlands
- 2008 — *7th Euromech Fluid Mechanics Conference,* Manchester, UK

Teaching Experience

Assistant Professor, Department of Physics, University of Miami

- *PHY 325 / PHY 625, Biological Physics I, (Fall 2022)*
  Energy and Order, Probability, Diffusion and Random Walks, Motion in Fluids, Entropy and Entropic Forces, Membrane Potentials and Nerve Impulses, Computer Simulations, Cellular Automata.
- *PHY 201 SCALE-UP**, University Physics for the Sciences I, (Spring 2022)*
  Integrated Lecture, Discussion and Lab. Mechanics, Thermal phenomena, Fluids, Waves.
- *PHY 202 SCALE-UP**, University Physics for the Sciences II, (Fall 2021)*
  Integrated Lecture, Discussion and Lab. Electromagnetism, Optics, and Modern physics.
- *PHY 102 SCALE-UP**, College Physics II, (Spring 2020, Spring 2021)*
  Integrated Lecture, Discussion and Lab. Electromagnetism, Optics, and Modern physics.
- *PHY 101 SCALE-UP**, College Physics I, (Fall 2020)*
  Integrated Lecture, Discussion and Lab. Mechanics, Thermal phenomena, Fluids, Waves.

  **SCALE-UP stands for 'Student Centered Active Learning Environment with Upside Down Pedagogies' - a modern teaching technique that specifically promotes active and collaborative learning, and has been adopted in many institutions worldwide.

Guest Lectures:

- *Life in Moving Fluids*, MSC364-G, Prof. Claire Paris-Limouzy, RSMAS, University of Miami, September 2021 (in-person)
- *Freshman Seminar: Physics: Biomolecular Nanomachines*, PHYS 190, Prof. S. Shekhar, Emory University, September 2020 (virtual)
- *Freshman Seminar: "Being a Scientist"*, FNS 190-P, Prof. V. Ramamurthy, University of Miami, October 2020 (virtual)

Previous Teaching Experience:

- Postdoc Teaching Certificate program, Stanford University (2016 – 2018)
  Teaching workshop for postdocs, Mentoring in research workshop
- Teaching assistant, University of Twente (2011 – 2013)
  Experimental Techniques in Physics of Fluids (graduate course), Instructor: Prof. Chao Sun
- Teaching assistant, University of Twente (2010)
  Physics of Fluids (undergraduate course), Instructor: Prof. Jacco Snoeijer

Research Mentoring Experience

At University of Miami

Postdoctoral Research Associates

- Dr. Santhan Chandragiri, Department of Physics (Starting June 2022)

Graduate Students (Ph.D.)

- Bikram D. Shrestha, Ph.D. student, Physics (May 2020 - present)
- Shubham Sinha, Ph.D. student, Physics (Aug 2021 - present)
- Patrick Kiel, Ph.D. student, Marine Biology & Ecology, RSMAS (Jan 2022 -)
  co-advised by Prof. Diego Lirman (MBE, RSMAS)
  Prof. Prannoy Suraneni (UM Civil Engineering)
  Dr. Ian Enochs (CIMAS/NOAA)

Undergraduate Students

- Christian D. Gibson, B.S. Biomedical Engineering and Physics (Dec 2020 - present)
- Valentina Restrepo, B.S. Biomedical Engineering (May 2021 - Aug 2021)
- Nina Couture, B.S. Environmental Engineering (Sep 2021 - present)
- Samantha Levine, B.S. Marine Science and Biology, RSMAS (Sep 2021 - present)
- Amaya Crichton, B.S. Biology (Sep 2021 - present)
- Alexandra Redford, B.S. Marine Science and Physics, RSMAS (Feb 2021 - present)
- Jack Delli-Santi, B.S. Marine Science and Biology, RSMAS (May 2022 - present)

Graduate Dissertation Committee Membership

- Yi Zhang, Ph.D. student, Physics; Advisor: Prof. C. Song (05/2020 - present)
- Kunal Tamang, Ph.D. student, Physics; Advisor: Prof. C. Song (04/2021 - present)
- Mingyue Wu, Ph.D. student, Civil Engineering; Advisor: Prof. L. R. Pestana (12/2021 - present)

Previous co-mentoring Experience:

- Matthew Storm Bull, Ph.D. student, Stanford University (Sep 2014 - Dec 2019)
  (incoming Shanahan Foundation Fellow at the Interface of Data and Neuroscience, Allen Institute and the University of Washington)

- William Gilpin, Ph.D. student, Stanford University (Sep 2015 - July 2019)
  (presently NSF-Simons Research Fellow, Harvard University)
  (incoming Assistant Professor, Department of Physics, University of Texas at Austin)
- Varghese Mathai, Ph.D. student, University of Twente (June - Dec 2013)
  (presently Assistant Professor, Department of Physics, University of Massachusetts, Amherst)
- Ernesto Mancilla, Ph.D. student, visitor from UNAM (Mexico) to Univ. Twente (July - Dec 2012)
- Jon Brons, MSc. student, University of Twente (Aug - Dec 2013)
- Tobias Foertsch, MSc. student, University of Twente (Aug 2012 - Aug 2013)
- Huanshu Tan, MSc. student, visitor from Shanghai University to Univ. Twente (Jan - Apr 2013)

Professional Service and Outreach

University of Miami

- Reviewer, College of Arts and Sciences Graduate Student Summer Research Awards (2022)
- Reviewer, College of Arts and Sciences Academic Year Dissertation Awards (2022)
- Member, Contemporary Glass working group, UM Lowe Art Museum; 10/2021 - present
- Outreach — Workshop on Physics/Biology for UM First Star Academy students (K-12). This is a program to encourage and support high-school students in the foster care system to pursue College and STEM education (12/2021).

External

- Journal editorial (ad-hoc):
  Guest Editor for Physics of Fluids, Special issue on "Kitchen Flows" (2021)
- External Grant reviews (ad-hoc):
  – *National Science Foundation, DBIO, IOS, Physiological Mechanisms and Biomechanics Program (PMB) program (2021)*
  – Graduate Women In Science (GWIS) Research awards (2022)
- Scientific journal reviews (ad-hoc):
  Nature (2)
  eLife (1)
  Current Biology (2)
  Physical Review Letters (1)
  Journal of the Royal Society Interface (1)
  Journal of Fluid Mechanics (6)
  Physical Review Fluids (1)
  Physics of Fluids (1)
  International Journal of Multiphase Flow (1)
  European Journal of Mechanics / B Fluids (1)
  Journal of Theoretical Biology (1)
  16th Asian Congress of Fluid Mechanics, India (abstract reviewer) (1)
- Session co-chair — Plenary session on Physical Mechanisms in Development, SDB Annual Meeting (virtual) (2021)
- Session chair — live poster presentations, SDB Annual Meeting (virtual) (2020)
- Session co-chair — 'Dealing with Damage' session, SICB Annual Meeting, Austin, USA (2020)

- Session co-chair — 'Developmental Plasticity' session, SICB Annual Meeting, Tampa, USA (2019)
- Judging — Judge for best student presentation awards in the Division of Invertebrate Zoology (DIZ) at the SICB Annual Meeting, San Francisco, USA (2018)
- Invited Panelist — Stanford Postdoctoral Office Event on 'Negotiating Academic Job Offers for Postdocs' (virtual) (2022)
- Organization — Friday afternoon Shriram center basement seminar series - 'Happy to talk science hour' at Stanford University, funded by a VPGE SPICE grant (2014 - 2016)
- Outreach — Numerous lab demonstrations for a wide variety of audiences

Professional Memberships

- 2010 — present, American Physical Society (APS) - Division of Fluid Dynamics (DFD)
- 2010 — present, European Mechanics Society (Euromech)
- 2017 — present, Society of Integrative and Comparative Biology (SICB)
- 2017 — present, Biophysical Society (BPS), Mechanobiology subgroup
- 2017 — present, Society for Developmental Biology (SDB)
- 2018 — present, American Society of Cell Biology (ASCB)

Media coverage

- **2021** — Interview, BioNIUM Newsletter, University of Miami [web link]
- **2020** — Postdoc Research on Trichoplax [web link]
  - **The Atlantic:** — "The Search for the World's Simplest Animal" [web link]
- **2017** — 'Expert's Choice award', NSF "Vizzies" Visualization challenge [web link]
  - **Popular Science:** "The 10 best science images, videos, and visualizations of the year" [web link]
  - Stanford Medicine: "Stanford team's image of starfish larva wins top honor" [web link]
  - Science Node: "The winner takes it all" [web link]
- **2016** — Nature Physics publication [web link]
  - **New York Times:** "The Beauty of a Starfish Larva at Lunch " [web link]
  - **Nature News:** "Swimming starfish, a departing dinosaur, and a lot of ice" [web link]
  - **Stanford News:** "Starfish larvae create complex water whorls to eat and run" [web link]
  - **Scientific American:** "The Mesmerizing Motions of Starfish Larvae [Video]" [web link]
  - Stanford Magazine: "A Striking Look at Starfish Larvae" [web link]
  - Phys.org: "Starfish larvae create complex water whorls to eat and run" [web link]
  - Live Science: "Starfish Larvae Churn Whirlpools With 100,000 Tiny Hairs" [web link]
  - Science Daily: "Starfish larvae create complex water whorls to eat and run" [web link]
  - Bay Nature: "The Efficient Beauty of Starfish Larvae" [web link]
  - EurekAlert: "Starfish larvae create complex water whorls to eat and run" [web link]
  - Futurity: "Why baby starfish make these pretty whorls in water" [web link]
  - EarthSky: "The water whorls of baby starfish" [web link]
  - ACSH: "Revealing The Wonders Of How Starfish Survive And Grow" [web link]
  - SciGuru: "Starfish larvae create complex water whorls to eat and run" [web link]

- **2016** — First place, Nikon Small World in Motion Competition [video link]
  - Nikon: "Time-lapse revealing water patterns of starfish larva wins Nikon Small World in Motion Competition" [web link]
  - Popular Science: "The year's best videos starring really, really small things" [web link]
  - Business Insider: "These are the best videos recorded through a microscope this year, according to Nikon" [web link]
  - Daily mail: "Nikon reveals the best videos shot through a microscope" [web link]
  - CBS News: "Small world in motion: Nikon contest winners" [web link]
  - Smithsonian: "Prize-Winning Videos Capture Mesmerizing, Microscopic World" [web link]
  - Live Science: "Tiny Starfish Larva Mesmerizes in Award-Winning Video" [web link]
  - Seeker: "Hunting Starfish Larva Takes the Top Prize in Micro Video Competition" [web link]
  - BBC Focus Magazine: "Nikon Small World in Motion brings photomicrography to life" [web link]

- **2016** — APS/DFD Milton van Dyke Award (Video) [video link]
  - APS News: "Gallery of Fluid Motion Winners from the 2016 APS Division of Fluid Dynamics Meeting" [web link]
  - Vox: "This is how a baby starfish eats. It involves vortexes of doom." [web link]
  - FYFD: "Starfish larvae create beautiful vortices to help themselves catch food." [web link]

- **2015** — Honorable mention, Nikon Small World in Motion Competition [video link]
  - Huffington Post: "18 Award-Winning Videos: Hidden micro realm is beautiful" [web link]
  - The Atlantic Video: "Incredible Video Taken Through a Microscope" [web link]

- **2013** — New Journal of Physics 'Video Abstract Prize' [video link]
  - Featured on the front pages of New Journal of Physics and University of Twente
  - News coverage: University of Twente: "UT Researchers win NJP video competition" [web link]
  - Dutch media: RTV-OOST NL, Tubantia NL

References

(available on request)

(Last updated: June 7, 2022)