Department: Bioengineering

BIOGRAPHICAL INFORMATION

A. IDENTIFYING DATA

Name: Manu Prakash
Current Rank: Assistant Professor

B. ACADEMIC HISTORY

2008 Ph.D., Media Arts and Sciences, Massachusetts Institute of Technology, MA, USA (Field of Study: Applied Physics)
2002 B.Tech., Computer Science, Indian Institute of Technology, Kanpur, UP, India

C. EMPLOYMENT RECORD

Academic Experience

07/01/2015-06/30/2018	Reappointment as Assistant Professor, Department of Bioengineering, Stanford University
03/01/2011-06/30/2015	Assistant Professor, Department of Bioengineering, Stanford University
2015-present	Member, Stanford ChEM-H
2012-present	Senior Fellow, Center for Innovation in Global Health Member, Woods Institute of the Environment Member, Biophysics Program
2008-2011	Junior Fellow, Biophysics, Harvard Society of Fellows

Non-Academic Experience

2017-present	Board member, PIVOT (http://pivotworks.org)
2017-present	Board member, Ciencia Puerto Rico (https://www.cienciapr.org)
2016-present	Co-Founder, Board Member, Foldscope Instruments, Inc.

D. PROFESSIONAL ACTIVITIES

2017	Co-author, Introductory Biology textbook "Explorers guide to life"
2015	Co-Organizer NSF Workshop; Fluid Dynamics of Living Systems
2014	Organizing Committee, American Physical Society 67th Annual Division of Fluid Dynamics meeting
2012	Proposal reviewer and panel member, National Science Foundation, Department of Defense, Department of Energy, French National Research Agency, US-Israel Binational Science Foundation,
2011-2015	Session Chair, American Physical Society Division of Fluid Dynamics meeting
2011-present	Member, American Society of Cell Biology
2007-present	Ad Hoc Reviewer – Nature, Nature Physics, Nature Materials, Nature Methods, Science, Science Advances, Cell Systems, PlosOne, PNAS, PRL, PRE, Physics of Fluids, Current Biology, Lab on Chip, New J. of Physics.
2004-present	Member, American Physical Society

E. UNIVERSITY AND DEPARTMENTAL SERVICE

2017-present	Board member, Jasper Ridge Reserve
2017-present	Core Leadership Team, Stanford Center for Innovation in Global Health
2015	Organizer, Bioengineering Department Retreat
2013-present	Member, Undergraduate Curriculum Committee, Department of Bioengineering, Stanford University
2012-present	Member, Website Content Committee, Department of Bioengineering, Stanford University
2012-2014	Member, Strategic Planning Committee, Department of Bioengineering, Stanford University

F. AWARDS AND HONORS

2017	INDEX Design Award
2017	Tau Beta Pi Teaching Award
2017-2022	Chan Zuckerberg BioHub Investigator
2017	Popular Science/NSF "Vizzies" Experts' Choice Award
2017	WIRED's Next List
2016-2018	HHMI-Gates Fellow
2016	MacArthur Fellow
2016	APS DFD Milton van Dyke Award
2016	Nikon Small World Video Competition
2015	NIH Directors New Innovator Award
2015	National Geographic Emerging Explorer
2014	Gates Foundation Explorations Award
2014	Invited Member, First White House Maker Faire
2014	Winner, Society for Science and the Public 21st Century Chemistry Set Competition
2014	Popular Science Brilliant Top 10 Award
2014	TR35 MIT Technology Review
2014	NSF Career Award
2013-2016	Ellison Young Faculty Award declined
2013	APS DFD Gallery of Fluids Motion Award
2013-2017	Pew Scholar
2013	India Abroad Face of the Future Award
2011-2012	Baxter Foundation Junior Faculty Award
2011	TED Senior Fellow
2011	Terman Fellow, Stanford
2011	mHealth Alliance Innovation Award, United Nations Foundation
2011	APS DFD Gallery of Fluids Motion Award
2011	Vodafone Wireless Innovation Award
2011	Gates Foundation Explorations Award
2008-2011	Harvard University William F. Milton Fund Award

G. BIBLIOGRAPHIC INFORMATION

Publications

It is a customary practice in my field for order of authors on scholarly publications to be trainees named first in order of work effort applied, faculty named last and where noted with * equal contribution of first authors. Ph.D. and supervised undergraduate student authors are indicated in bold face, and supervised post-doctoral authors are noted in italics. As a policy to promote open and early access, we submit all our papers in pre-print format at the time of submission either to arXiv or bioRxiv.

Submitted Pre-prints (arXiv/BioRxiv), under review

1. *A. Benusiglio*, **N. Cira,** and M. Prakash, Two-component Marangoni-contracted droplets: friction and shape, submitted to Soft-matter, arXiv:1712.00153, Nov 2017
2. *A. Benusiglio*, **N. Cira,** A. Wei Lai and M. Prakash, Two-component self-contracted droplets: long-range attraction and confinement effects, submitted to PNAS, arXiv:1711.06404, Nov 2017

Refereed Journal Publications in Press/Accepted

1. **G. Katsikis**, A. Breant, **A. Rinberg** and M. Prakash. Synchronous magnetic control of water droplets in bulk ferrofluid, accepted in *Soft Matter* doi: 10.1039/c7sm01973d, Nov. 2017
2. **H. Mukundarajan**, *F. Hol,* **E.A. Castillo, C. Newby,** M. Prakash, "Using mobile phones as acoustic sensors for the surveillance of spatio-temporal mosquito ecology," *eLife*, 6:e27854, 2017
3. **A. Rinberg, G. Katsikis,** M. Prakash, "Generation of droplet arrays with rational number spacing patterns driven by a periodic energy landscape," *Physical Review E* **96**, 033108, 2017.
4. **W. Gilpin**, *V. Prakash,* and M. Prakash, "Flowtrace: simple visualization of coherent structures in biological fluid flows," *Journal of Experimental Biology*, JEB volume 220 issue 19, 2017.
5. **W. Gilpin**, *V. N. Prakash*, M. Prakash "Boundary effects on currents around ciliated larvae" Nature Physics, **13**, 520–521, 2017.

6. M.W. Elting, M. Prakash, D.B. Udy, S. Dumont, "Mapping load-bearing in the mammalian spindle reveals local kinetochore-fiber anchorage that provides mechanical isolation and redundancy," *Current Biology*, Vol. 27, No. 14, pp. 2112-2122, 2017.
7. **W. Gilpin,** *V. Prakash,* and M. Prakash, "Vortex arrays and ciliary tangles underlie the feeding-swimming tradeoff in starfish larvae," *Nature Physics*, Vol. 13, No. 4, pp. 380-386, 2017.
8. **D. Krishnamurthy, G. Katsikis, A. Bhargava,** and M. Prakash, "Schistosoma mansoni cercariae swim efficiently by exploiting an elastohydrodynamic coupling," *Nature Physics*, Vol. 13, No. 3, pp. 266-271, 2017.
9. *M.S. Bhamla,* **B. Benson*, C. Chai*, G. Katsikis, A. Johri,** and M. Prakash "Paperfuge: An ultra-low cost, hand-powered centrifuge inspired by the mechanics of a whirligig toy," *Nature Biomedical Engineering*, Vol. 1, No. 1, pp. 1-7, 2017.
10. M. Prakash, "Wetting: bumps lead the way," *Nature Materials*, Vol. 15, No. 4, pp. 378-379, 2016.
11. **H. Mukundarajan**, **T. Bardon**, **D.H. Kim** and M. Prakash, "Surface tension dominates insect flight on fluid interfaces," *Journal of Experimental Biology*, Vol. 219, No. 5, pp. 752-766, 2015.
12. R.K.D. Ephraim, E. Duah, **J.S. Cybulski,** M. Prakash, M.V. D'Ambrosio, D.A. Fletcher, J. Keiser, J. R. Andrews, and I.I. Bogoch, "Diagnosis of schistosoma haematobium infection with a mobile phone-mounted foldscope and a reversed-lens cellscope in Ghana," *American Journal of Tropical Medicine and Hygiene*, Vol. 14-0741, 2015.
13. **G. Katsikis, J.S. Cybulski,** and M. Prakash, "Synchronous universal droplet logic and control," *Nature Physics*, Vol. 11, pp. 588-596, 2015.
14. **G. Korir** and M. Prakash, "Punch card programmable microfluidics," *PLoS ONE*, Vol. 10, No. 3, pp. 1-12, 2015.
15. **N. Cira,** *A. Benusiglio***,** and M. Prakash, "Vapor mediated sensing and motility in two-component droplets," *Nature* Vol. 519, pp. 446-450, 2015.
16. S. Dumont and M. Prakash, "Emergent mechanics of biological structures," *Molecular Biology of the Cell*, Vol. 25, No. 22, pp. 3461-3465, 2014.
17. **J. Cybulski, J. Clements** and M. Prakash, "Foldscope: Origami based paper microscope," *PLoS ONE*, Vol. 9, No. 6, pp. 1-11, 2014.
18. M. Prakash and J. Bush, "Interfacial propulsion by directional adhesion," *Int. J. of Nonlinear Mechanics*, Vol. 46, No. 4, pp. 607-615, 2011.
19. J. Joo, B.Y.Chow, M. Prakash, E.S. Boyden, M. Jacobson, "Face-selective electrostatic control of hydrothermal zinc oxide nanowire synthesis," *Nature Materials*, Vol. 10, No. 8, pp. 553-644, 2011.
20. J. Bush, F. Peaudecerf, M. Prakash, D. Quere, "On a tweezer for droplets," *Advances in Colloidal and Interface Science*, Vol. 161, pp. 10-14, 2010.
21. P. Renvoise, J. Bush, M. Prakash, D. Quere, "Drop propulsion in tapered tubes," *Euro Physics Letters*, Vol. 86, pp. 1-5, 2009.
22. M. Prakash, D. Quere, and J. Bush, "Surface tension transport of prey by feeding shorebirds: The capillary ratchet," *Science*, Vol. 320 No. 5878, pp. 931-934, 2008.
23. J. Bush, D. Hu, and M. Prakash, "The integument of water-walking arthropods: Form and function," *Advances in Insect Physiology*, Vol. 34, pp. 117-192, 2007.
24. M. Prakash, N. Gershenfeld, "Microfluidic bubble logic," *Science*, Vol. 315, No. 519, No. 7544, pp. 832-835, 2007.

Refereed Conference/Symposia Proceedings

1. **D. Krishnamurthy, F. Cockenpot**, M. Prakash, "How cells jump: ultrafast motions in the single-celled micro-organism Halteria grandinella," ASCB Meeting Abstracts, 2017.
2. *G.R. Ramirez-SanJuan*, W.F. Marshall, M. Prakash, Biophysical interactions between cilia and mucus underlie directed fluid transport in the ventral epithelium of the planaria Schmidtea mediterranea, ASCB Meeting Abstracts, 2017.
3. *S. Armon*, **M.. Bull, A. Aranda-Diaz,** M. Prakash, Ultra-fast contractions and emergent pattern dynamics: Primitive epithelium in Trichoplax adherence as a "living active solid", ASCB Meeting Abstracts, 2017.
4. *S. Coyle*, **B. Brandon,** M. Prakash, Unraveling calcium programmed hunting biodynamics of the swan-necked predatory ciliate *Lacrymaria*, ASCB Meeting Abstracts, 2017.
5. **G. Katsikis, A. Rinberg,** M. Prakash A simple discrete-time model for describing droplet generation in a periodic energy landscape, APS DFD 2017.
6. *A. Mathijssen, S. Bhamla,* M. Prakash, Rheosensing by impulsive cells at intermediate Reynolds numbers, APS DFD 2017.
7. *S. Bhamla, A. Mathijssen,* M. Prakash, Collective hydrodynamic communication through ultra-fast contractions, APS DFD 2017.

8. M.W. Elting, D.B. Udy, M. Prakash, S. Dumont, "Local load-bearing by kinetochore-fibers in the mammalian spindle provided mechanical isolation and redundancy," Biophysical Journal Vol. 112, No. 3, Supplement 1, pp 432a, 2017.
9. M. Prakash, "Vapour-mediated sensing and active motion in two-component droplets," APS March Meeting Abstracts 2016.
10. **N. Cira**, *A. Benusiglio*, M. Prakash, "Dancing droplets: chemical space, substrates and control," APS Meeting Abstracts, 2015.
11. *A. Benusiglio*, **N. Cira**, M. Prakash, "Dancing droplets: contact angle, drag and confinement," APS Meeting Abstracts, 2015.
12. **D. Krishnamurthy**, **A. Bhargava**, **G. Katsikis,** M. Prakash, "Investigation of the swimming mechanics of Schistosoma cercariae and its role in disease transmission," APS Division of Fluid Dynamics, 2015.
13. **G. Katsikis**, **A. Breant**, M. Prakash, "Magnetophoretic control of water droplets in bulk ferrofluid," APS Meeting Abstracts, 2015.
14. M. Prakash, "Projection microscopy for medical diagnostics," Frontiers in Optics, 2015.
15. *A. Benusiglio*, **N. Cira**, M. Prakash, "Vapor-mediated droplet interactions – model and mechanisms (part 2)," APS Meeting Abstracts, 2014.
16. **N. Cira**, *A. Benusiglio*, M. Prakash, "Vapor-mediated droplet interactions – self-sensing droplet machines (part 1)," APS Meeting Abstracts, 2014.
17. **G. Katsikis**, M. Prakash, "Synchronous droplets as a test bed for pulsatory active fluids," APS Meeting Abstracts, 2014.
18. M. Prakash, **D. Krishnamurthy**, "The deadly swimming of Cercariae: an unusual Stokesian swimmer," APS Division of Fluid Dynamics, 2014.
19. **J. Cybulski**, M. Prakash, "Projection microscopy for frugal science and diagnostics," Frontiers in Optics, 2014.
20. J. Urzay, D. Ott, M. Prakash, "The unique low-Reynolds-number spinning hydrodynamics of release of a giant multinucleate multiflagellate zoospore," APS Division of Fluid Dynamics, 2014.
21. J. Urzay, D. Ott, M. Prakash, "A spinning puzzle of the release of a giant multinucleate multiflagellate zoospore," American Society of Cell Biology, 2014.
22. M. Prakash, "Frugal science and global health: Democratizing access to scientific tools," American Chemical Society, 2014.
23. M. Prakash, **H. Mukundarajan**, "Mosquitoes meet microfluidics: high throughput microfluidic tools for insect-parasite ecology in field conditions," APS Division of Fluid Dynamics, 2013.
24. **L. Kroo**, **G.K. Herring**, M. Prakash, "Aperture-embedded polymer microlenses for ultra-low-cost microscopy platforms (foldscope)," APS Meeting Abstracts, 2013.
25. **H. Mukundarajan**, M. Prakash, "Insect flight on fluid interfaces: a chaotic interfacial oscillator," APS Meeting Abstracts, 2013.
26. L. Hanson, J. Urzay, Z. Lin, W. Zhao, M. Prakash, B. Cui, "Probing the Mechanical Coupling of the Cell Membrane to the Nucleus with Vertical Nanopillar Arrays," Biophysical Journal, Volume 104, Issue 2, Supplement 1, pp. 546a 2013.
27. **G. Katsikis**, M. Prakash, "Ferrodroplets: a global cock for droplet microfluidics," APS Division of Fluid Dynamics, 2012.
28. M. Prakash, **T. Bardon**, "Flying in two dimensions," APS Meeting abstracts, 2012.
29. M. Prakash, "Hydraulic stress induced bubble nucleation and growth during pupal metamorphosis," Annual Meeting of the Society for Integrative and Comparative Biology/Symposium on New Frontiers from Marine Snakes to Marine Ecosystems, 2012.
30. M. Prakash, **M. Steele**, "The hungry fly: Hydrodynamics of feeding in the common house fly," Physics of Fluids Vol. 23, No. 9, 2011.
31. M. Prakash, "Bubbles of metamorphosis," APS Meeting Abstracts, 2011.
32. M. Prakash, M. Klauser, "Whistling bubbles: all-fluidic linear frequency sweep generators," APS Division of Fluid Dynamics, 2009.
33. J Bush, M Prakash, Propulsion by directional adhesion APS Mar Meeting, 2008
34. M. Prakash, D. Quere, J. Bush, "Capillary ratchet: hydrodynamics of capillary feeding in shorebirds," APS March Meeting, Vol. 53, No. 2, 2008.
35. M. Prakash, J. Bush, "Unidirectional superhydrophobic surfaces," APS Division of Fluid Dynamics, 2007.
36. M. Prakash, N. Gershenfeld, "Microfluidic bubble logic and applications," APS Meeting Abstracts, 2007.
37. J. Bush, M. Prakash, D. Quere, "Capillary feeding in shorebirds," APS Division of Fluid Dynamics, 2006.

Edited Works in Print or in Press

1. **Cira N.**, *Benusiglio A.*, Prakash M., Dancing Droplets: Autonomous surface tension-driven droplet motion, Physics of Fluids, 26, 091113-1, (2014).
2. D.L. Hu, M. Prakash, B. Chan, J.W.M. Bush, "Water-walking Devices," Published in *Animal Locomotion*, edited by G. Taylor, MS. Triantafyllou, C. Tropea, Springer, London, UK, 2010.
3. N Gershenfeld, M. Prakash, "Personal communication fabrication in the Lyngen Alps" Published in *Telektronikk: Perspectives in telecommunications*, Volume 100, No 3, pp. 22-26, 2004.

Presentations

Invited Plenary Talks and Distinguished Lectures

1. Invited Speaker, Macarthur Fellows Forum, Wisconsin, WI, Oct 2018
2. Keynote, 1st Annual Center for Cellular and Bio-molecular Machines, Open House University of California, Merced, CA, Sept 2017
3. HHMI Director's Series Talk, Chevy Chase, MD, Sept 2017
4. Keynote, Intel International Science and Engineering Fair, Los Angeles, CA, May 2017
5. Invited Speaker, St. Petersburg International Economic Forum (SPIEF), St. Petersburg, Russia, May 2017
6. Invited Speaker, TEDxStanford, April 2017
7. Invited Speaker, TED, Vancouver, BC, April 24, 2017
8. WUD Distinguished Lecture Series, University of Wisconsin, Madison, WI, Nov 2016
9. Invited Participant, SciFoo, Google, Mountain View, CA, July 2016
10. Invited round table discussion with Bill Gates, Grand Challenges Annual Meeting, London, UK, Oct 2016
11. UCSF Mission Bay Distinguished Lecture Series, San Francisco, CA, Feb 2016
12. Keynote Talk, Delhi University, Gargi College, New Delhi, India, Dec 2015
13. Keynote speaker, 160th Anniversary Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, April 2015
14. NIMH Directors Innovation Speaker Series, Washington, DC, Feb 2015
15. Keynote, Consortium for Innovation in Global Health, Stanford, CA, Jan 18, 2015
16. Invited Speaker, Burroughs Wellcome Fund Scientific Interfaces Symposium, La Jolla, CA, Oct 2014
17. Invited Panelist, with Princess of Jordan on Transformative Innovations for Health, co-hosted by PATH and Financial Times, New York, NY, Oct 2014
18. Invited Participant to meet President Obama at First White House Maker Faire, Washington, DC, June 2014
19. Invited Speaker, TEDGlobal, Edinburgh, June 2012
20. Invited Participant, SciFoo, Google, CA, Aug 2011

Other Invited Presentations

1. Invited Public Lecture, Arts and Lecture Series, FermiLab, Chicago, IL, March 2018
2. Invited Talk, University of Chicago Computations in Science Seminar, Chicago, IL, Oct 2017
3. Dialogues of Discovery, HHMI Janelia Farm, Ashburn, VA, Sept 2017
4. Invited Lecture, Nayi Soch TED India, Mumbai, India, Aug 2017
5. Postdoctoral-scholar Speaker Series Lecture, Genentech, San Francisco, CA, Sept 2017
6. Invited Talk, Plankton Planet Implementation Workshop, Auckland, NZ, July 2017
7. Invited Speaker, St. Petersburg International Economic Forum (SPIEF), St. Petersburg, Russia, May 2017
8. Invited Guest Speaker, March for Science, Washington, D.C. Mall, April 22, 2017
9. Invited Speaker, CASI MIT, Cambridge, MA Apr 21, 2017
10. Invited Speaker, Illumina, March 23, 2017
11. Invited Speaker, Pew Scholars, Santa Barbara, CA Mar 6-10, 2017
12. Invited Speaker, Madagascar Conference, Stanford Feb 8, 2017
13. Invited speaker, Winter Q-Bio meeting, Kauai, HI, Feb 2017
14. Invited Speaker, Silicon Valley Community Foundation Conference, October 10, 2016
15. Invited Talk, Center ValBio, Ranomafana, Madagascar, Oct 2016
16. Invited Speaker, Global Entrepreneurship Summit, Stanford, CA June 23, 2016
17. Invited Speaker, Stanford+Connect, Stanford, CA May 21, 2016
18. Invited Panelist, CUGH April 8-11, 2016
19. Invited Speaker, UCSF Feb 24-25, 2016
20. Invited Speaker, World Molecular Imaging Congress, April, 2016
21. Invited Speaker, Math Lovers Forum, Jan 2016

22. Invited Speaker, Quantitative Biology of Cytoskeletal Mechanics Meeting, Chicago, IL October, 2015
23. Invited Speaker, India Konnect Meeting, Special Invitation, Govt of India, San Jose, CA September, 2015
24. Invited Speaker, National Geographic Explorers Symposium, Washington, DC, June 2015
25. Invited Speaker, Photonics Retreat, Monterey, CA April, 2015
26. Invited Speaker, NIMH Directors Innovation Speaker Series, Washington, DC February, 2015
27. Invited Talk, Gates Vector Biology Meeting, HI, Feb 2015
28. Invited Speaker, UNESCO International Year of the Light, Paris, France January, 2015
29. Invited Speaker, AAAS Annual Meeting, San Jose, CA January, 2015
30. Invited Participant, Annual Kavli Frontiers of Science Symposium, National Academy of Sciences, Irvine, CA, Nov 2014
31. Invited Talk, Society for Vector Ecology, San Antonio, TX, Oct 2014
32. Organizer, NSF Future Trends in Biological Fluid Dynamics Workshop, Arlington, VA, Oct 2014
33. Invited Talk, EmTech Conference 2014, MIT, Cambridge, MA, Sept 2014
34. Invited Talk, American Chemical Society Annual Meeting, San Francisco, CA, Aug 2014
35. Invited Speaker, American Society of Developmental Biology, Seattle, WA, July 2014
36. Graduate student body selected speaker, Chemical BioPhysics Symposium, Toronto, Canada, May, 2014
37. Invited Talk, Int. Conf. on Electron, Photon, Ion Beam Nanolithography, Washington, DC, May 2014
38. Invited Talk, AmeriMech 2014, VirginaTech, Blacksburg, VA, May 2014
39. Invited Talk, Chemical Biophysics Symposium, University of Toronto, Canada, May 2014
40. Invited Talk, Center for Microfluidics, University of Toronto, Canada, May 2014
41. Invited Talk, MakerCon, Redwood City, CA, May 2014
42. Pavilion Presenter, Health Matters, Stanford School of Medicine, Stanford, CA, May 2014
43. Invited Talk, Pew Scholars Annual Meeting, Costa Rica, March 2014
44. Invited Talk, Aspen Center for Physics, Aspen, CO, Feb 2014
45. Invited Talk, Multicellularity Seminar Series, UCSF, San Francisco, CA, Jan 2014
46. Invited Talk, Point-of-care Diagnostics Series, UC Berkeley, CA, Nov 2013
47. Invited Talk, Stanford Biophysics Students Program, Stanford, CA, Nov 2013
48. Invited Participant, National Academy of Sciences, Workshop on Convergence, DC, Sept 2013
49. Invited Talk, Stanford Biodesign Mobile Health Panel, Stanford, CA, Oct 2012
50. Invited Talk, Molecular Imaging Probes Annual Retreat, Stanford University, CA, Aug 2012
51. Invited Talk, Society for Industrial and Applied Mathematics, Seattle, WA, June 2012
52. Invited Talk, Mountreux Microfluidics Conference, Switzerland, Nov 2010

Workshops

1. Dharavi Slums in Mumbai, Foldscope Workshop, Aug 2017
2. BMC Municipal Schools, Mumbai, Foldscope Workshop, Aug 2017
3. California Academy of Sciences, June 15, 2017
4. Bio-X Science Day, June 15, 2017
5. Foldscope featured in Origami Show, Taiwan Museum, Feb – Mar, 2017
6. Wolbachia Teacher Training Workshop, San Francisco, CA, Jan 28, 2017
7. ASCB Workshop for Foldscope, San Francisco, CA December 3, 2016
8. Foldscope Workshop, Madagascar, October 14-23, 2016, Madagascar
9. California Academy of Sciences Collaborative Workshop, San Francisco, 2016
10. Invited Workshop on Foldscope, Department of Biotechnology, Government of India December, 2015
11. Invited Presentation, ASCB Foldscope Workshop, San Diego December, 2015

Contributed Conference Presentations

1. Contributed Talk, American Physical Society Division of Fluid Dynamics, San Diego, CA, Nov 2017
2. Talk, SPIE, San Francisco, CA Jan 29, 2017
3. ASCB Poster, San Francisco, CA December 3-6, 2016
4. Contributed Talk, American Physical Society Division of Fluid Dynamics, San Diego, CA, Nov 2016
5. Contributed Talk, American Physical Society Division of Fluid Dynamics, San Diego, CA, Nov 2015
6. Contributed Talk, American Physical Society Division of Fluid Dynamics, San Diego, CA, Nov 2014
7. Contributed Talk, Society of Integrated and Comparative Biology, Austin, TX, Jan 2014
8. Contributed Talk, American Physical Society Division of Fluid Dynamics, San Diego, CA, Nov 2013
9. Contributed Talk, American Society of Tropical Medicine and Hygiene, Washington, DC, Oct 2013

10. Contributed Talk, American Physical Society Division of Fluid Dynamics, San Diego, CA, Nov 2012
11. Contributed Talk, Society of Integrated and Comparative Biology, Charlestown, SC, Jan 2012
12. Contributed Talk, American Physical Society Division of Fluid Dynamics, Baltimore, MD, Nov 2011

Department Seminars

1. Departmental Seminar, Dept. of Physics, University of Massachusetts, Amherst, MA, March 2018
2. Departmental Seminar, Dept. of Bioengineering, University of Pennsylvania, Philadelphia, PA, Dec 2017
3. Departmental Seminar, University of Chicago Biophysical Dynamics seminar series, Chicago, IL, Oct 2017
4. Departmental Seminar, Dept. of Cell Biology, University of Colorado, Denver Jan 10, 2017
5. Departmental Seminar, Bioengineering Dept., UC Berkeley, Berkeley, CA, Feb 2017
6. Departmental Seminar, Dept. of Biophysics, Johns Hopkins University, Baltimore, MD Dec 12, 2016
7. Departmental Seminar, Dept. of Electrical Engineering, University of Washington, Jan 2016
8. Departmental Seminar, Dept. of Agriculture, Assam University, India, Dec 2015
9. Departmental Seminar, Dept. of Physics, Princeton University, November, 2015
10. Departmental Seminar, UCSD Bioengineering, San Diego, CA, Dec 2014
11. Departmental Seminar, Rice University Bioengineering Seminar TX, Oct 2014
12. Departmental Seminar, Hopkins Marine Station, Monterey, CA, Oct 2014
13. Departmental Seminar, University of Buea, Buea, Cameroon, July 2014
14. Departmental seminar, Kavli Institute of Theoretical Physics, UCSB, CA, April 2014
15. Departmental Seminar, Biomechanics Seminar Series, Dept of Integrative Biology, UC Berkeley, CA, Feb 2014
16. Departmental Seminar, University of Makerere, Kampala, Uganda, Oct 2013
17. Departmental Seminar, Institute for Infectious Diseases, Kampala, Uganda , Oct 2013
18. Departmental Seminar, University of Lagos, Lagos, Nigeria, Oct 2013
19. Departmental seminar, Department of Urology, UCSF, CA, May 2013
20. Departmental Seminar, Ecology and Evolutionary Biology, Yale University, New Haven, CT, Dec 2012
21. Departmental Seminar, Invited Talk Physics Colloquia, UC Merced, CA, Oct 2012
22. Stanford University, Biology Department "Think & Drink" Seminar, Palo Alto, CA, Jan 2012
23. Departmental Seminar, Mechanical Engineering Department, UCSD, CA , April 2011

PATENTS

Patents Issued

1. Zhang, S., Mershin, A., Kaiser, K., Cook, B., Graveland-Bikker, J.F., Prakash, M., Kong, D., Maguire, Y., *Bio-sensing nanodevice* Issued July 25, 2017 US9714941.
2. Prakash M., Cybulski J., Clements J., *Foldscope: Ultra-low-cost fluorescence microscope constructed via folding*. Issued July 4, 2017 US9696535.
3. Prakash M., Gershenfeld N., *Microfluidic bubble logic*, Filed August 2008 Issued August 2, 2016 US9404835.
4. Prakash M., Boddupalli, D., Clements J., *Techniques for standardized imaging of oral cavity*. Issued April 7, 2015 US8998609.
5. Chow B., Joo J., Prakash M., *Methods and apparatus for control of hydrothermal nonwire synthesis*. Issued June 16, 2013 US8367435.

STUDENTS

PhD Students

Current PhD Students

Anton Molina
Thesis: TBD
Anticipated date of graduation: 2021

Laurel Kroo
Thesis: “Bio-inspired Micro-optical Systems and Manufacturing”
Anticipated date of graduation: 2020

William Gilpin
Thesis: "Physical constraints on evolutionary adaptation in basal organisms"
Anticipated date of graduation: 2019

Deepak Krishnamurthy
Thesis: TBD
Anticipated date of graduation: 2019

Matt Storm Bull
Thesis: “The dynamics of multi-cellular coordination in a living fossil: harnessing emergent degrees of freedom through experiment, parsimonious modeling and synthesis.”
Anticipated date of graduation: 2018

George Korir
Thesis:”Punchcard Programmable Microfluidics for Molecular Diagnostics”
Anticipated date of graduation: 2018

Haripriya Mukundarajan
Thesis: “Fantastic Beasts and How to Probe Them”
Anticipated date of graduation: 2018

Former PhD Students Supervised at Stanford

Jim Cybulski
Graduated: 2015
Thesis: “Novel Low-Cost Tools For Science, Diagnostics, and Education”
Current Position: President, CEO, Co-Founder, Foldscope Instruments, Inc.

Yorgos Katsikis
Graduated: 2016
Thesis: “Microfluidic Manipulation of Droplets using Synchronous Universal Logic Operations”
Current Position: Postdoctoral Scholar, MIT

Postdoctoral Researchers Supervised

Current Postdoctoral Researchers

Clarice Aiello
Started: 2017
Projected End: 2019

Scott Coyle

Started: 2017
Projected End: 2020
Thesis: “Reconstituting signaling networks to interrogate the molecular and evolutionary logic of cellular decision making”

Guillermina Ramirez-San Juan (joint appointment with UCSF)
Started: 2017
Projected End: 2020
Thesis: “Cell Migration: A Multi-scale Integration Process”

Arnold Mathijssen
Started: 2016
Projected End: 2020
Thesis: “Hydrodynamics of microswimmers in complex fluids and environments.”

Felix Hol
Started: 2015
Projected End: 2019

Shahaf Armon
Started: January 2014
Projected End: 2018
Thesis: “Geometry and Mechanics in the Shaping of Growing Soft Tissues”

Vivek Prakash
Started: 2014
Projected End: 2019

Former Postdoctoral Researchers Supervised

Stefan Karpitschka
Appointed: 2016
Current Position: Assistant Professor, Max Planck Institute for Dynamics and Self-Organization, Göttingen

Saad Bhamla
Appointed: 2015
Current Position: Assistant Professor, Chemical Engineering, Georgia Institute of Technology

Tom Hata
Appointed: 2015
Current Position: R&D Process Engineer, RheoSense, Inc.

Adrien Benusiglio
Appointed: 2012
Current Position: Research Associate, OtherLab, San Francisco

Undergraduate Students Supervised with publications
Thibaout Bardon
Brandon Benson
Arjun Bhargava
Alexandre Breant
Chew Chai
Fabien Cockenpot
Aanchal Johri

Masters Students Supervised with publications: N/A

LIST OF COURSES TAUGHT

2016-2017:

BIOE 41 Physical Biology of Macromolecules

2015-2016:

BIOE 41 Physical Biology of Macromolecules
BIOHOPK 320H: Physical Biology

2014-2015:

BIOE 337 Living Soft Matter
BIOE 41 Physical Biology of Macromolecules

2013-2014:

BIOE 337 Living Soft Matter
BIOE 41 Physical Biology of Macromolecules

2012-2013:

BIOE 41 Physical Biology of Macromolecules