

Manu Prakash

Stanford University

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EDUCATION

- 9/2002-9/2008 Ph.D., Media Arts and Sciences, Massachusetts Institute of Technology, MA
9/1998-9/2002 Bachelor of Technology, Computer Science, Indian Institute of Technology, Kanpur, India

RESEARCH POSITIONS & TRAINING

- 6/2011-present Assistant Professor, Stanford University, CA
Department of Bioengineering
Affiliate Member, Woods Institute of the Environment
Member, Biophysics Program
Member, Center for Innovation in Global Health
- 7/2008-6/2011 Junior Fellow, Harvard Society of Fellows (Physics)
- 9/2002-9/2008 Graduate Student, Massachusetts Institute of Technology, MA
Center for Bits and Atoms Research Fellow
Advisor: Prof. Neil Gershenfeld (Applied Physics and Fluid Dynamics)
Collaborators: Prof. John Bush (MIT)
Prof. David Quere (ESPCI)
Thesis: Microfluidic Bubble Logic
- 9/1998-9/2002 Undergraduate Student, Indian Institute of Technology, Kanpur, India
Advisor: Prof. Amitabha Mukerjee (Computer Science)
Center for Robotics, IIT Kanpur

AWARDS

- 2014 TR35 MIT Technology Review
2014 Popular Science Brilliant Top 10 Award
2014 Winner, Society for Science and the Public 21st Century Chemistry Set Competition
2014 Invited Participant at First White House Maker Faire
2014 Gates Foundation Explorations Award
2013 India Abroad Face of the Future Award
2013-2017 Pew Scholar
2013 APS DFD Gallery of Fluids Motion Award
2013-2016 Ellison Young Faculty Award (declined)
2013 Gates Foundation Explorations Award
2011-2012 Baxter Foundation Junior Faculty Award
2011 Gates Foundation Explorations Award
2011 Vodafone Wireless Innovation Award
2011 APS DFD Gallery of Fluids Motion Award

2011	mHealth Alliance Innovation Award, United Nations Foundation
2011	Terman Fellow, Stanford
2011	TED Senior Fellow
2008	Lemelson-MIT Student Prize Finalist
2006	MIT 100K Development Prize Runners Up
2006	Boeing Sustainability Prize, MIT Ideas Award
1998-1999	Director's Meritorious Student Award

RESEARCH FUNDING

2014-2017	Keck Foundation Research Grant
2013-2017	Pew Scholars Program
2013-2018	Moore Foundation
2012-2014	C-IDEA NIH Award
2011-2015	Bill and Melinda Gates Foundation
2013-2015	Woods Institute of the Environment
2013-2014	Vodafone Foundation
2012-2013	Coulter Foundation
2011-2012	Baxter Foundation
2007-2009	William F. Milton Fund, Harvard University

PUBLICATIONS

16. Cira N., Benusiglio A., **Prakash M.**, Vapor mediated sensing and motility in two-component droplets, submitted August 2014.
15. Katsikis G., Cybulski J., Prakash M., Synchronous Droplet Logic and Control, submitted Aug 2014.
14. Korir G., **Prakash M.**, Punch Card Programmable Microfluidics, submitted Aug 2014, arXiv:1408.4874 [physics.ins-det].
13. Mukundarajan H., Bardon T., **Prakash M.** Two-dimensional Insect Flight on an Air-Water Interface is a Chaotic Oscillator. submitted May 2014, arXiv:1405.2298 [physics.flu-dyn]
12. Cira N., Benusiglio A., **Prakash M.**, Dancing Droplets: Autonomous surface tension-driven droplet motion, *Physics of Fluids*, **26**, (2014).
11. Cybulski JS., Clements J., **Prakash M.** Foldscope: Origami-Based Paper Microscope. *PLoS ONE* **9**(6): e98781. doi:10.1371/journal.pone.009878110 (2014).
10. **Prakash M.** Steele M. The Hungry Fly: Hydrodynamics of Feeding in the Common House Fly. *Physics of Fluids* **23**,(2011).
9. Joo J., Chow B., **Prakash M.**, Boyden E., Jacobson J. Face-selective electrostatic control of nanowire synthesis. *Nature Materials* **10**, 596-601 (2011).
8. **Prakash M.**, Bush J., Interfacial propulsion by directional adhesion. *Int. J. of Nonlinear Mechanics*, **46**, 607-615 (2011).
7. Bush J., Peaudecerf F., **Prakash M.**, Quere D., On a tweezer for droplets. *Advances in Colloid and Interface Science*, **161**, 10-14 (2010).
6. Renvoise P., Bush J., **Prakash M.**, Quere D., Drop propulsion in tapered tubes. *Euro Physics Letters*, **86**, 1-5 (2009).
5. **Prakash M.**, Quere D., Bush J., Surface tension transport of prey by feeding shorebirds: The capillary ratchet. *Science*, **320**, 931-934 (2008).
4. Bush J., Hu D., **Prakash M.**, The integument of water-walking arthropods: Form and function. *Advances in Insect Physiology*, **34**, 117-192 (2007).
3. Hu D., Prakash M., Chan B., Bush J., Water walking devices. *Experiments in Fluids*, **43**, 769-778 (2007).

2. **Prakash M.**, Gershenfeld N., Microfluidic Bubble Logic. *Science* **315**, 832-835 (2007).
1. Gershenfeld N., **Prakash M.**, Personal fabrication. *Teletronikk* **3**, 22-26 (2004).

PATENTS

9. **Prakash M.**, Katsikis G., Magnetic phase-locked microfluidics. Filed Feb. 2013 (WO2014035979 A1).
8. **Prakash M.**, Korir G., Punch card programmable microfluidics. Filed Feb. 2013 (WO 2014039844 A2).
7. **Prakash M.**, Cybulski J., Clements J., Foldscope: Ultra-low-cost fluorescence microscope constructed via folding. Filed Oct. 2012 (WO2013120091).
6. **Prakash M.**, Mukundarajan H., et al., Microfluidics tools for automated surveillance of insect-borne bio-agents. Filed Oct 2012 (WO 2014035993 A2).
5. **Prakash M.**, Clements J., et al. Low-cost comprehensive digital imaging of the oral cavity. Filed May 2012 (US20130209954 A1).
4. Chow B., Joo J., **Prakash M.**, Methods and apparatus for control of hydrothermal nanowire synthesis. Filed Dec 2010 (US8367435 B2).
3. **Prakash M.**, Bazant M., Multiphase Non-linear Electrokinetic Devices. Filed July 2010 (MIT-7515-US).
2. Cook B., Graveland-Bikker J., Kaiser L., Kong D., Maguire Y., Mershin A., **Prakash M.**, Zhang S., Bio-sensing Nano-device, Filed July 2008 (WO2009018467 A3).
1. **Prakash, M.**, Gershenfeld N., Microfluidic Bubble Logic. Filed August 2008 (US2008/0185057).

SELECTED TALKS & SEMINARS

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|---------|---|
| 04/2015 | Keynote speaker, 160th Anniversary Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI |
| 02/2015 | NIMH Directors Innovation Speaker Series, Washington, DC |
| 02/2015 | Invited Talk, AAAS Annual Meeting, San Jose, CA |
| 01/2015 | Invited Talk, UNESCO International Year of the Light, Paris, France |
| 12/2014 | Invited Talk, UCSD, San Diego, CA |
| 11/2014 | Contributed Talk, American Physical Society Division of Fluid Dynamics, San Francisco, CA |
| 11/2014 | Invited Participant, 26th Annual Kavli Frontiers of Science Symposium, National Academy of Sciences, Irvine, CA |
| 10/2014 | Invited Talk, Rice University Bioengineering Seminar, TX |
| 10/2014 | Invited Talk, Hopkins Marine Station, Monterey, CA |
| 10/2014 | Invited Talk, Society for Vector Ecology, San Antonio, TX |
| 10/2014 | Invited Talk, Burroughs Wellcome Fund Scientific Interfaces Symposium, La Jolla, CA |
| 09/2014 | Invited Panelist, with Princess of Jordan on Transformative Innovations for Health, co - hosted by PATH and Financial Times, New York |
| 09/2014 | Invited Talk, EmTech Conference 2014, MIT, Cambridge, MA |
| 09/2014 | Organizer, NSF Future Trends in Biological Fluid Dynamics Workshop, Arlington, VA |
| 08/2014 | Invited Talk, American Chemical Society Annual Meeting, San Francisco, CA |
| 07/2014 | Invited Talk, American Society of Developmental Biology, Seattle, WA |
| 07/2014 | Invited Talk, University of Buea, Buea, Cameroon |
| 06/2014 | Invited Participant to White House Maker Faire, Washington, DC |
| 05/2014 | Invited Talk, Int. Conf. on Electron, Photon, Ion Beam Nanolithography, Washington, DC |
| 05/2014 | Invited Talk, AmeriMech 2014, VirginiaTech, Blacksburg, VA |
| 05/2014 | Invited Talk, Chemical Biophysics Symposium, University of Toronto, ON |
| 05/2014 | Invited Talk, Center for Microfluidics, University of Toronto, ON |

05/2014 Invited Talk, MakerCon, Redwood City, CA
05/2014 Pavilion Presenter, Health Matters, Stanford School of Medicine, Stanford, CA
04/2014 Invited Talk, Kavli Institute of Theoretical Physics, UCSB, CA
03/2014 Invited Talk, Pew Scholars Annual Meeting, Costa Rica
02/2014 Invited Talk, Aspen Center for Physics, Aspen, CO
02/2014 Invited Talk, Biomechanics Seminar Series, UC Berkeley, CA
01/2014 Invited Talk, Society of Integrated and Comparative Biology, Austin, TX
12/2013 Invited Talk, Multicellularity Seminar Series, UCSF, CA
11/2013 Contributed Talk, American Physical Society Division of Fluid Dynamics, Pittsburgh
11/2013 Invited Talk, Point-of-care Diagnostics Series, UC Berkeley, CA
11/2013 Invited Talk, Stanford Biophysics Students Program, Stanford, CA
11/2013 Contributed Talk, American Society of Tropical Medicine and Hygiene, Washington, DC
10/2013 Invited Talk, University of Makerere, Kampala, Uganda
10/2013 Invited Talk, Institute for Infectious Diseases, Kampala, Uganda
10/2013 Invited Talk, University of Lagos, Lagos, Nigeria
09/2013 Invited Participant, National Academy of Sciences, Workshop on Convergence, DC
05/2013 Invited Talk, Department of Urology, UCSF, CA
11/2012 Contributed Talk, American Physical Society Division of Fluid Dynamics, San Diego, CA
10/2012 Invited Talk Physics Colloquia, UC Merced, CA
10/2012 Invited Talk, Stanford Biodesign Mobile Health Panel, Stanford, CA
08/2012 Invited Talk, Molecular Imaging Probes Annual Retreat, Stanford University, CA
01/2012 Contributed Talk, Society of Integrated and Comparative Biology, Charlestown, SC
11/2011 Contributed Talk, American Physical Society Division of Fluid Dynamics, Baltimore
08/2011 Invited Participant, SciFoo, Google, CA
04/2011 Invited Talk, Mechanical Engineering Department, UCSD, CA
04/2011 Invited Talk, DARPA Biomanufacturing Initiative, MIT, MA
01/2011 Contributed Talk, Society of Integrated and Comparative Biology, Charlestown, SC
11/2010 Invited Talk, Moutreux Microfluidics Conference, Switzerland
11/2010 Contributed Talk, American Physical Society Division of Fluid Dynamics, Minneapolis, MN

SERVICE

Organizing Committee, American Physical Society, Division of Fluid Dynamics Annual Meeting, CA. Nov. 2014
Co-organizer, NSF Future Trends in Biological Fluid Dynamics Workshop, Arlington, VA. Sept. 2014
Member, Department of Bioengineering Strategy Planning Committee, 2014

TEACHING EXPERIENCE

Winter 2014 Living Soft Matter
Winter 2014 Physical Biology of Macromolecules
Winter 2013 Physical Biology of Macromolecules