

Biographical Information for L. Mahadevan –March 31, 2017

Fields of Interest

Applied mathematics. Quantitative biology. Macroscopic physics. Engineering science.

As a mathematical scientist with broad interests, I use theory and computation, in close connection with experiments, to study how matter (living and non-living) is shaped and how it flows, on scales ranging from the supramolecular to the planetary - to get at a qualitative understanding using quantitative methods. A particular theme is science at the human scale, where phenomena are robust and easy to observe, yet not always easy to explain. A natural goal is to get at general principles, if there be such, from specific instances.

Experience

Harvard University Cambridge, MA, USA	England de Valpine Prof. of Applied Mathematics,	2003-present
	Professor of Organismic and Evolutionary Biology,	2009-present
	Professor of Physics	2010-present
University of Oxford Oxford, UK	Schlumberger Visiting Professor in Applied Mathematics	2004-2014
University of Cambridge, Cambridge, UK	Schlumberger Professor of Complex Physical Systems, Dept of Applied Mathematics and Theoretical Physics	2001-2003
Trinity College Cambridge, UK	Professorial Fellow in Natural Sciences	2001-2003
Massachusetts Institute of Technology, Cambridge MA, USA	Assistant, then (tenured) Tassel Associate Professor Department of Mechanical Engineering	1996-2000

Visiting positions

Woods Hole Oceanographic Institution, Woods Hole, USA	Guest Investigator	2012	present
	Summer faculty	2003	2011
Marine Biological Laboratories Woods Hole, USA	Summer Faculty	2003	present
École Supérieure de Physique et de Chimie Industrielles,	Professeur Associé Lab. de Physique et Méc.	June 1998	July 1998
		May 2001	June 2001

Paris, France	de Milieux Hétérogènes		
Université de Provence Marseille, France	Professeur Invité IUSTI	March 1998	March 1998
École Normale Supérieure Paris, France.	Professeur Invité Dept. de Physique	June, 1997 Feb 2001	July, 1997 April 2001
University of Chicago	Research Associate, Mathematics and Physics (mentor: L. Kadanoff, Physics)	Oct., 1995	Aug., 1996
Université de Nice, Nice, France	CNRS Poste Rose, Inst. Non-Linéaire de Nice	July, 1995	Aug., 1995
Univ. of Cambridge, U. K. Appl. Math. & Theor. Phys.	EPSRC Visiting Scientist	July, 1994	Aug., 1994
U. Illinois at Urbana-Champaign Theor. & Appl. Mech.	Visiting Asst. Prof.	Aug., 1993	May, 1995

Education

Indian Inst. of Technology, Madras	B. Tech., Engineering	1986
University of Texas at Austin	M. S., Mechanics	1987
Stanford University	M.S., Mathematics	1992
Stanford University	Ph.D. (advisor: J.B. Keller, Mathematics)	1995

Awards and Honors (selected)

Fellow of the Royal Society (of London) (elected member of the oldest scientific society in continuous existence)	2016-
MacArthur Fellowship, MacArthur Foundation (probably the most visible award for creativity in the arts, humanities, and sciences in the USA)	2009-14
John Simon Guggenheim Memorial Fellowship	2006
Shutzer Fellow, Radcliffe Institute, Harvard University	2014-15
George Ledlie Prize, Harvard University (awarded biennially to someone "who has by research, discovery or otherwise made the most valuable contribution to science, or in any way for the benefit of mankind")	2006
Edgerton Award, MIT (highest award given to untenured faculty for achievement in teaching and research at MIT)	2000

Inaugural holder of the (endowed) Schlumberger Chair in Complex Physical Systems, Cambridge University, UK	2001 - 2003
Schlumberger Visiting Professor in Mathematics, Oxford University, UK	2004-2014
Karl van Tassel Career Development Chair, M.I.T.	1998 --2001
Chaire Condorcet, Ecole Normale Superieure	Jan-April 2001
Chaire Paris Sciences, Ecole Superieure de Physique et de Chimie, Paris, France	May – Jun 2001
Visiting Miller Professor, Departments of Integrative Biology, Chemistry, and Mathematics, University of California, Berkeley, CA	2007
Distinguished Visiting Professor, National Center for Biological Sciences – TIFR, Bangalore, India	2007-2012
Young Investigator Award in Applied Mechanics American Society for Mechanical Engineering	2005
Young Investigator medal, Society for Engineering Science (inaugural recipient)	1999
Inaugural SIGEST award – Society for Industrial and Applied Mathematics (for the best paper in SIAM J. Applied Mathematics)	1999
Francois Frenkiel Prize, American Physical Society (for the best paper in Physics of Fluids)	2006
Distinguished Alumnus Award IIT-Madras, India	2009
Named /Plenary Lectures (selected list)	
Clay Senior Scholar, Park City - Institute for Advanced Study Summer Institute	2014
Mathematics for Planet Lecture – Simons Foundation	2013

Plenary Lecture, American Math. Society Meeting Baltimore,	2013
Niven Lecture University of British Columbia and Pacific Institute for Mathematical Sciences	2012
Amick Lectures Mathematics, University of Chicago	2011
Boeing Lecture Applied Mathematics, University of Washington	2011
Glicksman Lecture Brown University Commencement Exercises	2011
Sears Lecture Woods Hole Oceanographic Institution	2011
Laufer Lecturer Engineering, University of Southern California	2010
Combined-plenary Lecture British Mathematics Colloquium and British Applied Mathematics Colloquium	2010
Singleton Lectures Brain and Cognitive Sciences, M.I.T.	2010
Midwest Mechanics Lecturer	2006-07
Statphys XVI Invited Lecturer, Genoa, Italy	2007
Plenary Lecture Society for Mathematical Biology Annual Meeting	2007
Penner Lecturer Engineering, University of California, San Diego	2008
IOP Einstein Centenary Meeting – Warwick Invited Lecture	2005
SIAM Plenary Lecture, SIAM Annual Meeting	2005
G I Taylor Lecturer, Cambridge Philosophical Society Cambridge, UK	2001

Alan Tayler Lecturer, Smith Institute and Oxford University, UK 2003

Professional Service

Associate Director, NSF Science and Technology Center
for Brains, Minds and Machines, a \$25M, 5 year project 2013-2015

Area Dean for Applied Mathematics, SEAS,
Harvard University 2016-present

Editorial boards:

Proceedings of the Royal Society of London (A)
Mathematical, Physical and Engineering Sciences 2004 - 2009

Chaos (published by the American Institute of Physics) 2004 – 2009

*Nonlinearity (published jointly by the London Mathematical
Society and the Institute of Physics, UK)* 2008 - 2013

American Journal of Physics 2009 - 2011

Advisory boards:

Schlumberger Private Ltd. Technology Committee 2001 – present

OCCAM: Oxford Centre for Collaborative Applied Mathematics 2008 – 2013

Max Planck Institute for Complex Physical Systems
Dresden, Germany; 2010 – present

NSF Mathematical Biosciences Institute, Columbus, OH 2010 - 2012

Conferences/symposia:

Organizer:
Society for Engineering Science:
Symposium on Singularity and Similarity in
Mechanics to honor G.I. Barenblatt Oct. 1999

Co-organizer: June-July 2000
Workshop on *Statistical Dynamics of Continua* at
Aspen Center for Physics

Co-organizer and main lecturer: Workshop on <i>Materials in Motion</i> , James Franck Institute, University of Chicago,	July 2001
Organizer: Continuum Seminar at MIT and Cambridge University A weekly seminar on Applied Mathematics/Mechanics broadly interpreted	1996 – 2003
Co-organizer: Mathematics and materials; soft matter Max Planck Gessellschaft, Castle Ringberg, Germany.	Oct 2002
Co-organizer: Workshop on <i>Extreme mechanics of fluids and continua</i> Aspen Center for Physics	Aug 2006
Co-organizer: Geometrical singularities and singular geometries Institute for Mathematics and its Applications, Minneapolis, MN	Jul 2008

Referee for approx. 20 papers per year in Mathematics, Physics, Biology, Engineering journals *e.g.* *Nature*, *Science*, *Proceedings of the Royal Society of London (A)*, *Comptes Rendus de l'Academie des Sciences Paris, Series II*, *Physical Review Letters*, *Physics of Fluids*, *Journal of Cell Biology*, *Nature- Cell Biology*, *Current Biology*, *Physical Review E*, *SIAM Journal on Applied Mathematics* *Proceedings of the US National Academy of Science*, *Europhysics Letters*, *Biochemistry*, *American Journal of Botany*, *Journal of Fluid Mechanics*, *PLoS*, *etc.*

Teaching Experience

I have taught over 20 different courses in mathematics, physics, engineering and biology over the last two decades at MIT, Cambridge, Harvard and introduced new courses on Biophysics, Inverse Problems, Data Analysis and Mathematical Modeling at these institutions.

I have been a summer school lecturer at the Mathematical Sciences Research Institute (Berkeley, CA), Les Houches (France), London Mathematical Society (Oxford), Clay Mathematical Institute (Park City, Utah), Boulder school on condensed matter physics (Boulder, CO), Theoretical Physics Retreat (MIT), Peyresq (Biomechanics), Cargese (Rheology) etc.

I was the Founding co-director (with T. Poggio) of the newest established Summer School on Brains, Minds and Machines at MBL, Woods Hole, MA (starting in 2013).

Stanford University
Numerical Analysis

Univ. Of Illinois, Urbana-Champaign
Advanced Dynamics
Asymptotic and Perturbation Methods in Science and Engineering

Massachusetts Institute of Technology
Dynamics (2 years)
Molecular, cell and tissue biomechanics (4 years)
Experimental and theoretical molecular biophysics (graduate seminar)
Mechanics and materials I (2 years)
Applied elasticity (jointly with Harvard's "Solid Mechanics I") (2 years)
Physics of sliding friction (graduate seminar)

Cambridge University
Molecular and cellular biomechanics (2 years)
Introduction to physics (1 year)
Mathematical methods for natural sciences (2 years)

Harvard University

Applied Mathematics
Mathematical methods in the sciences AM21a – undergraduate (2010)
Complex and Fourier analysis AM104– undergraduate (2010)
Mathematical modeling AM115- undergraduate (4 years)
Physical mathematics I AM201– graduate (4 years)
Physical mathematics II AM202– graduate (2012)
Inverse problems AM216 – graduate (2013,2016)

Engineering Sciences
Fluid dynamics ES220 – graduate (5 years)
Sustainable energy and climate change – freshman seminar (2009)

Physics
Science of everyday life – freshman seminar (2005)
Physics and physiology of the senses – freshman seminar (2007)
Widely applied physics PHY125 – undergraduate (2014)
Biophysics PHY215 – graduate (2016)

Biology
Biological dynamics ES216 / PHY215 – graduate (3 years)
Systems cell biology BPS242– graduate

Summer / Winter Schools etc.

Jun 95 Lectures on Classical Mechanics & Elasticity

Jun 97 Institut Non-Linéaire de Nice, France
 Lectures on Elasticity –
 Workshop on Elasticity and Viscoelasticity,
 Cargese, France

Dec 97 Lectures on Mechanics of Granular Matter
 International Conference on Instabilities and Non equilibrium
 Systems, Valparaiso, Chile

Mar 98 Lectures on the Mechanics of Granular
 Materials, Univ. de Provence, France

Jun 99 Director, Summer Graduate Program,
**Geometry and Dynamics of Low Dimensional
 Continua**, Mathematical Sciences Research Institute,
 Berkeley, California.

Dec 99 Lectures on Molecular and Cellular Biomechanics
 University of Santiago, Chile

June 01 Lectures on Fluid-Structure Interaction,
 Summer School on Nonlinear Physics, Peyresq, France

July 01 Lectures on Structural Elasticity, Workshop on Materials
 In Motion, MRSEC, University of Chicago

Sep 02 Lectures on biomechanics; from molecules to morphogenesis
 Peyresq, France.

Mar 04 Lectures on cell mechanics,
 International winter school, Les Houches, France.

Jul 04 Faculty, Physiology Program,
 Marine Biological Laboratory, Woods Hole, USA.

Jan 05 Shape, flow and motion. Lectures at MIT's Center for
 Theoretical Physics Retreat, New Hampshire, USA

Jul 06 Lectures on Elastomers, Boulder School on Condensed Matter
 Physics
 Boulder, Co, USA.

Jul 09 Lecturer, London Mathematical Society School on Mathematics and
 Materials Science, Oxford, UK.

Jul 12 Lectures on Hydrodynamics, Boulder Summer School on
 Condensed Matter Physics, Boulder, Co, USA.

Jul 12 Lectures on Soft Wet Interfaces, Summer School on "Soft
 Interfaces", Les Houches, France.

Jun 14 co-Director, Summer School on Brains, Minds and Machines
 Marine Biology Laboratories, Woods Hole, MA.

Outreach activities

- Lectured at various Middle Schools and High Schools in the Boston and Berkeley areas on "Everyday Science"
- Harvard Museum of Natural History Public Lectures – 2006, 2008, 2012 on "Nature of Shape and Shape of Nature"
- Invited Lecturer to Edinburgh Mathematical Society's "Meet the Mathematician Series" for High School Students, 2010.

- Many articles have been covered by the media – including interviews on the BBC, NPR, articles in the NY Times, London Telegraph, Le Monde, Frankfurter Allgemeiner etc.

Publications

Statistics ~240 publications, 10 patents at the interface of Applied Mathematics, Physics, Engineering, Biology, Medicine, combining experiment, theory and computation. More than half were published in interdisciplinary journals: *Nature*, *Nature Materials*, *Nature Nanotech.*, *Nature Cell Bio.* - 25, *Science*- 13, *Proc. Natl. Acad. Sci. (USA)* - 23, *Physical Review Letters* - 40, *Proc. Roy. Soc. (Lond.)A,B*, *Interface* - 37.

Approx ~60 articles have been the subject of perspectives and press coverage.
H-index ~70. # Citations ~16000.

1. “The shape of a Möbius band,” Mahadevan, L., and J.B. Keller, *Proceedings of the Royal Society of London, Series A*, **1440**, no. 409, pp. 149-162, 1993.

2. Comment on “Behavior of a falling paper,” Mahadevan, L., H. Aref, and S.W. Jones, *Physical Review Letters*, **75**, p. 1420, 1995.

3. “Periodic folding of thin sheets,” Mahadevan, L., and J.B. Keller, *SIAM Journal on Applied Mathematics*, **55**, no. 6, pp. 1609-1624, 1995.

See also: *SIAM Review*, 41, no. 1, pp. 113-31, 1999, where this article is reprinted as the inaugural SIGEST article on the basis of “exceptional quality and potential significance to the entire SIAM community.”)

4. “Coiling of flexible ropes,” Mahadevan, L., and J.B. Keller, *Proceedings of the Royal Society of London, Series A*, **1452**, no. 1950, pp. 1679-1694, 1996.

5. “Shark-teeth patterns in coating flow inside a horizontally-rotating cylinder,” Thoroddsen, S.T., and L. Mahadevan, *Physics of Fluids*, **8**, no. 9, p. S10, 1996.

6. “Tumbling of a falling card,” Mahadevan, L., *Comptes Rendus de l’Academie des Sciences, Paris, Series II*, **t. 323**, pp. 729-736, 1996.

7. “Experimental study of instabilities in a partially-filled horizontally-rotating cylinder,” Thoroddsen, S.T., and L. Mahadevan, *Experiments in Fluids.*, **23**, pp. 1-13, 1997.

8. “Colliding waves in an excitable medium: preservation, annihilation and bifurcation,” Argentina, M., P. Coulet, and L. Mahadevan, *Physical Review Letters.*, **79**, pp. 2803-07, 1997.

9. “Fluid rope trick investigated,” Mahadevan, L., W. Ryu, and A.D.T. Samuel, *Nature*, **v. 391**, no. 6672, p. 140, 1998. Corrigendum; *ibid.*, v. 403, p. 502, 2000.

Commentaries and press reports: *The Daily Telegraph*, London, March 12, 1998; *Le Figaro*, Paris, March 24, 1998; *The New York Times*, New York, April 7, 1998; interview on “Sounds Like Science,” National Public Radio, March

- 14, 1998; *Pour la Science*, Paris, September, 1998; CHEMTALK (published by the American Chemical Society), September 1998, etc.
10. "Conical surfaces and crescent singularities in crumpled sheets," Cerda, E., and L. Mahadevan, *Physical Review Letters*, **80**, pp. 2358-61, 1998.
Commentary: *Physics World*, July, 1998, p.19-20.
11. "Tumbling cards," Mahadevan, L., W. Ryu, and A.D.T. Samuel, *Physics of Fluids*, **11**, pp. 1-3, 1999.
Commentary: *Science News*, Oct. 31, 1998, pp. 285-7.
12. "Axial instability of a free-surface front in a partially-filled horizontal rotating cylinder," Hosoi, A.E., and L. Mahadevan, *Physics of Fluids*, **11**, pp. 97-106, 1999.
13. "Propagating fronts on sandpile surfaces," Mahadevan, L. and Y. Pomeau, *Europhysics Letters*, **46**, pp. 595-601, 1999.
14. "Rolling droplets," Mahadevan, L., and Y. Pomeau, *Physics of Fluids*, **11**, pp. 2449-53, 1999.
15. "Conical dislocations in crumpling," Cerda, E., S. Chaieb, F. Melo and L. Mahadevan, *Nature*, **401**, pp. 46-49, 1999.
Commentary and press reports: *Dallas Morning News*, Sep. 6, 1999; *The Daily Telegraph* (London), Sep. 15, 1999; *Bild der Wissenschaft* (Germany), Mar. 2000; *Facts* (Switzerland), Nov. 1999; American Mathematical Society *What's new in mathematics*, Nov. 1999 etc.
16. "Elastic model of a DNA loop in the lac operon," Balaeff, A., L. Mahadevan and K. Schulten, *Physical Review Letters*, **83**, pp. 4900-03, 1999
17. "Rippling instability of a collapsing bubble" da Silveira, R., S. Chaieb and L. Mahadevan, *Science*, **287**, pp. 1468-71, 2000.
Commentary and press reports: *Canadian Discovery Channel*, Feb 25, 2000; *New Scientist*, March 2000; *Physics World*, March 2000.
18. "Motility driven by macromolecular springs and ratchets," Mahadevan, L. and P. Matsudaira, *Science*, **288**, pp. 95-99, 2000.
Commentary and press reports: Featured on "Mysteries of the Universe," MSNBC, May 2000. http://www.msnbc.com/news/myst_front.asp
19. "Chaotic dripping from a faucet," Couillet, P., L. Mahadevan and C. Riera, *Progress in Theoretical Physics Supplement*, **139**, pp. 507-516, 2000.
20. "Folding of viscous filaments and sheets," Skorobogatiy, M., and L. Mahadevan, *Europhysics Letters*, **52**, pp. 532-38, 2000.
21. "Non-stick water," Mahadevan, L., *Nature*, **411**, pp. 895-96, 2001.
22. "Shocks in sand flowing in a silo," Samadani, A., L. Mahadevan and A. Kudrolli, *Journal of Fluid Mechanics*, **452**, pp. 293-301, 2002.

23. "Four-phase merging in compound drops," Mahadevan, L., M. Adda Bedia and Y. Pomeau, *Journal of Fluid Mechanics*, **451**, pp. 411-20, 2002.
24. "How aphids lose their marbles," Pike, N., D. Richard, W. Foster and L. Mahadevan, *Proceedings of the Royal Society of London, Series (B), Biological Sciences*, **269**, pp. 1211-15, 2002.
 Commentary and press reports " *Science: random samples*", June 21, 2002, article in *American Natural History magazine*, July 2002.
25. " Wrinkling of a stretched elastic sheet," Cerda, E., K. Ravi-Chandar and L. Mahadevan, *Nature*, **419**, pp. 146-7, 2002.
26. " The viscous catenary," Teichman, J. and L. Mahadevan, *Journal of Fluid Mechanics*, **478**, pp. 71-80, 2003.
27. "Geometry and physics of wrinkling," Cerda, E. and L. Mahadevan, *Physical Review Letters*, **90** (7) 074302, 2003 (Physical Review Focus Article).
 Commentary in the following: Perspective article in *Science*, **300**, p. 441, 2003, Nature Physics Online, Science Online, New Scientist, Naturwissenschaft, Frankfurter Allgemeine Zeitung, Discover magazine, Allure magazine, Interview with German radio, Korean Broadcasting Service etc.
28. "The force-velocity relationship for the actin-based motility of *Listeria-Monocytogenes*", McGrath, J., J. Eungdamrong, C. Fisher, F. Peng, L. Mahadevan, T. Mitchison and S. Kuo, *Current Biology*, **13** (1-20), 1-6, 2003.
29. "Rings, rackets and kinks in filamentous assemblies," Cohen, A. and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **100**, 12141-46, 2003.
30. "Confined elastic developable surfaces: cylinders, cones and the elastica," Cerda, E. and L. Mahadevan, *Proceedings of the Royal Society of London (A)*, **461**, 671-700, 2005.
31. "Stored elastic energy powers the 60-micron extension of the *Limulus* polyphemus sperm actin bundle," Shin, J., L. Mahadevan, G. Waller, K. Langsmo and P. Matsudaira, *Journal of Cell Biology*, **162**(7), 1183-88, 2003.
32. "Dynamics of poroelastic filaments," Skotheim, J. and L. Mahadevan, *Proceedings of the Royal Society of London (A)*, **460**, 1995-2020 (2004).
33. "Multiscale methods for modeling protein-DNA complexes," Villa, E. , Balaeff, A., L. Mahadevan and K. Schulten, *SIAM Multiscale Modeling and Simulation*, **2**, 527-553 (2004).
34. "Structural model for cooperative DNA binding by CAP and *Lac* repressor," L. Mahadevan and K. Schulten, *Structure*, **12**, 123-32, 2004.
35. "Biomimetic ratcheting motion of lubricated hydrogel filaments," Mahadevan, L., S. Daniel and M. Chaudhury, *Proceedings of the National Academy of Sciences (USA)*, **101**, 23-26, 2004.

Commentary in the following: Science – random samples, Science News, MIT - Technology Review, Technology Research News, Frankfurter Allgemeine Zeitung, Scientific American etc.

36. “Popliteal instability of bent multi-walled elastic tubes,” Mahadevan, L., J. Bico and G. McKinley, *Europhysics Letters*, **65** (3), 323-29, 2004.

37. “Elements of Draping,” Cerda, E., L. Mahadevan and J. Passini, *Proceedings of the National Academy of Sciences (USA)*, **101** (7), 1806-10, 2004.

Commentary in: Nature – physics portal.

38. “Crack street: the cycloidal wake of a cylinder ripping through a thin solid sheet,” Ghatak, A. and L. Mahadevan, *Physical Review Letters*. **91**, 215507, 2003. Erratum, 2005.

Commentary in: Nature – physics portal.

39. “Modeling DNA loops using continuum and statistical mechanics,” Balaeff, A., C. Koudella, L. Mahadevan and K. Schulten, *Philosophical Transactions of the Royal Society of London (A)*, **362**, 1355-71, 2004.

Invited paper as part of a theme on DNA mechanics.

40. “ Bending stiffness of a crystalline actin bundle,” Shin, J., L. Mahadevan, P.T. So and P. Matsudaira, *Journal of Molecular Biology*, **337**, 255-61, 2004.

41. “Capillarity-induced zippering of a flexible train floating on an air-water interface,” Vella, D., H-Y. Kim and L. Mahadevan, *Journal of Fluid Mechanics*, **502**, 89-98, 2004.

42. “Photo-induced deformation of beams, plates and films,” Warner, M. and L. Mahadevan, *Physical Review Letters*, **92**, 134302, 2004.

43. “Elastic behavior of cross-linked and bundled networks,” Gardel, M., J. Shin, F. Mackintosh, L. Mahadevan, P. Matsudaira and D. Weitz, *Science*, **304**, 1301-5, 2004.

Commentary in: The Scientist.

44. “Relating microstructure to rheology of a bundled and cross-linked F-actin network in-vitro,” Shin, J., M. Gardel, L. Mahadevan, P. Matsudaira and D. Weitz, *Proceedings of the National Academy of Sciences (USA)*, **101** (26), 9636-41, 2004.

45. “Peeling from a patterned thin elastic film,” Ghatak, A., L. Mahadevan, J. Yun, M. Chaudhury and V. Shenoy, *Proceedings of the Royal Society of London (A)*, **460**, 2725-35, 2004.

46. “Hydrodynamical models of the dripping faucet,” L. Mahadevan and C. Riera, *Journal of Fluid Mechanics*, **526**, 1-17, 2005.

47. “Scaling of F-actin rheology to probe single filament elasticity and dynamics,” Gardel, M., J. Shin, F. Mackintosh, L. Mahadevan, P. Matsudaira and D. Weitz, *Physical Review Letters*, **93** (18), 188102, 2004.

Featured and reprinted in *Virtual J. Biological Physics*, 2004.

48. "Fluid-flow induced flutter of a flag," Argentina, M. and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **102**, 1829-34, 2005.
Press coverage in Guardian (UK), Die Zeit (Germany), ...
49. "Soft lubrication," Skotheim, J. and L. Mahadevan, *Physical Review Letters*, **92 (24)**, 245509, 2004.
50. "Elasticity of interfacial particle rafts," Vella, D., P. Aussillous and L. Mahadevan, *Europhysics Letters*, **68 (2)**, 212-18, 2004.
51. "How the Venus flytrap snaps," Forterre, Y., J. Skotheim, J. Dumais and L. Mahadevan, *Nature*, **433**, 421-25, 2005.
Press coverage in : National Public Radio (Morning Edition, Jan 27, 2005), Canadian Broadcasting Corporation (As it happens, Jan 30, 2005), Boston Globe, Guardian (UK), Daily Telegraph (UK), International Herald Tribune
52. "Peeling, healing and bursting in lubricated elastic sheets," Hosoi, A. and L. Mahadevan, *Physical Review Letters*, **93**, 137802, 2004.
Featured and reprinted in *Virtual J. Nanoscale Science and Technology*, **10(15)**, Oct. 11, 2004.
53. "Spontaneous folding of planar surfaces into three-dimensional objects by magnetic self-assembly," M. Boncheva, S. Andreev, L. Mahadevan, A. Winkelman, D. Reichman, M. Prentiss, S. Whitesides and G. Whitesides, *Proceedings of the National Academy of Sciences (USA)*, , **102**, 3924-29, 2005.
54. "Self-similar nested wrinkling patterns in skins," K. Efimenko, M. Rackaitis, E. Manias, A. Vaziri, L. Mahadevan and J. Genzer, *Nature-Materials*, **4**, 293-97, 2005.
News and Views in Nature Materials by W. Huck. Press coverage in multiple countries.
55. , "Gravitational collapse of colloidal gels," S. Manley, J.M. Skotheim, L. Mahadevan, D. Weitz, *Physical Review Letters* **94**, 218302, 2005.
56. "Using the peel test to measure the work of adhesion in a confined elastic film,"
A.
Ghatak, L. Mahadevan and M. Chaudhury, *Langmuir*, **21(4)**, 1277-81, 2005.
57. " Non-equilibration of hydrostatic pressure in blebbing cells," G. Charras, J. Yarrow, M. Horton, L. Mahadevan and T. Mitchison, *Nature*, **435**, 95-99, 2005.
58. "Buckling of drying droplets of colloidal suspensions", N. Tsapis, E. Dufresne, S. Sinha, C. Riera, J. Hutchinson, L. Mahadevan, D. Weitz, *Physical Review Letters*, **94**, 018302, 2005.
59. "Self-organized Origami," L. Mahadevan and S. Rica, *Science*, **307**, 1740, 2005.
Press coverage in : New York Times (22 Mar, 2005), Geoskop, Die Welt, National Geographic...
60. " Physical limits and design principles for plant and fungal movements," J. Skotheim and L. Mahadevan, *Science*, **308**, 1308-11, 2005.

Cover article of Science. Press coverage in a variety of sources such as : National Geographic, Christian Science Monitor, Scientific American etc. ...

61. "The 'Cheerios' effect", D. Vella and L. Mahadevan, *American Journal of Physics* **73**, 817-25, 2005.

Press coverage in: AIP Physics News, MSNBC, Die Zeit, CBS radio ...

62. "Soft lubrication: the elastohydrodynamics of conforming and non-conforming contacts," J. Skotheim and L. Mahadevan, *Physics of Fluids*, **17**, 092101, 2005.

Awarded the 2006 Francois Frenkiel Prize by the American Physical Society.

63. "Solenoids and plectonemes in stretched, twisted elastomeric filaments," A. Ghatak and L. Mahadevan, *Physical Review Letters*, **95**, 057801, 2005.

64. "Powerful curves," L. Mahadevan and T. Mitchison, *Nature*, **435**, 895-96, 2005.

65. "Non spherical bubbles," A. B. Subramaniam, M. Abkarian, L. Mahadevan and H. Stone, *Nature*, **438**, 930, 2005.

66. "A simple model for the dynamics of adhesive failure," D. Vella and L. Mahadevan, *Langmuir*, **22**, 163-66, 2006.

67. "Capillary rise between elastic sheets," H-Y Kim and L. Mahadevan, *Journal of Fluid Mechanics*, **548**, 141-50, 2006.

68. "Superficial wrinkles in stretched, drying gelatin films," R. Rizzieri, L. Mahadevan, A. Vaziri and A. Donald, *Langmuir*, **22**, 3622-26, 2006.

69. "Transitions to nematic states in homogeneous suspensions of high aspect ratio magnetic rods," A. Gopinath, L. Mahadevan and R.C. Armstrong, *Physics of Fluids*, **18**, 028102, 2006.

70. "Dynamics of surfactant-driven fracture of particle rafts," D. Vella, H-Y Kim, P. Aussillous and L. Mahadevan, *Physical Review Letters*, **96**, 178301, 2006.

71. "Microtubules can bear enhanced compressive loads in cells because of lateral reinforcement," C. Brangwynne, F.C. MacKintosh, S. Kumar, N. Geisse, L. Mahadevan, K. Parker, D. Ingber, D. Weitz, *Journal of Cell Biology*, **173**, 733-41, 2006.

Featured commentary in *Current Biology* by J. McGrath.

72. "Crack-front instability in a confined film," Adda Bedia and L. Mahadevan, *Proceedings of the Royal Society of London, series A*, **462**, 3233-51, 2006.

73. "Dynamics of fracture in drying suspensions," Dufresene, D. Stark, N. Greenblatt, J. Cheng, J. Hutchinson, L. Mahadevan and D. Weitz, *Langmuir*, **22**, 7144-47, 2006.

74. "Modeling DNA loops using the theory of elasticity," A. Balaeff, L.

Mahadevan and K. Schulten, *Physical Review E*, **73**, 031919, 2006.

75. "Fall and rise of a viscoelastic filament," A. Roy, L. Mahadevan and J-L Thiffeault, *Journal of Fluid Mechanics*, **563**, 283-92, 2006.

76. "A dynamic fate map of the forebrain shows how vertebrate eyes form and explains two causes of cyclopia," S.J. England, G. Blanchard, L. Mahadevan and R. Adams, *Development*, **133**, 4613-17, 2006.

77. "Mechanics of interfacial composite materials," A.B. Subramaniam, M. Abkarian, L. Mahadevan and H.A. Stone, *Langmuir*, **22**, 10204-08, 2006.

78. "Sensorimotor control during isothermal tracking in *Caenorhabditis Elegans*," L. Luo, D.A. Clark, D. Biron, L. Mahadevan and A. Samuel, *Journal of Experimental Biology*, **209**, 4652-62, 2006.

79. "Nonlinear mechanics of fibrous networks," A. Kabla and L. Mahadevan, *J. Roy. Soc. Interface*, **4**, 99-106, 2007.

80. "Persistence of a pinch in a pipe," L. Mahadevan, A. Vaziri and M. Das, *Europhysics Letters*, **77**, 40003, 2007.

81. "Curvature condensation and bifurcation in an elastic shell," M. Das, A. Vaziri, A. Kudrolli and L. Mahadevan, *Physical Review Letters*, **98**, 014301, 2007.

82. "Universal dynamics of cell spreading," D. Cuvelier, M. Thery, Y. Shu, S. Dufour, J-P. Thiery, M. Bornens, P. Nassoy and L. Mahadevan, *Current Biology*, **17**, 694-99, 2007.

Featured commentary in *Current Biology* by J. McGrath.

83. , "Force of an actin spring," J. Shin, B. Tam. R. Brau, M. Lang, L. Mahadevan and P. Matsudaira, *Biophysical Journal*, **92**, 3729-33, 2007.

84. "Mechanosensation and mechanical load modulate the locomotory gait of swimming *Caenorhabditis Elegans*," J. Korta, D. Clark, C. Gabel, L. Mahadevan and A. Samuel, *Journal of Experimental Biology*, **210**, 2383-89, 2007.

85. "Gravitational stability of suspensions of attractive colloidal particles," C. Kim, Y. Liu, A. Kuhnle, S. Hess, S. Viereck, T. Danner, L. Mahadevan, and D. Weitz, *Physical Review Letters*, **99**, 028303, 2007.

86. "Settling and swimming of flexible fluid-lubricated foils," M. Argentina, J. Skotheim, and L. Mahadevan, *Physical Review Letters*, **99**, 224503, 2007.

Featured and reprinted in *Virtual J. Biological Physics*, 2007. Commentary in the following: Perspective article in *Nature* by P. Ball, Nature Physics Online, Science Online, New Scientist, Naturwissenschaft, Daily Telegraph (London), Times of India etc. Radio interview on Irish radio ORTE- Dublin etc.

87. "Collective sickle cell vaso-occlusion and rescue in a microfluidic device,"

J. Higgins, D. Eddington, S. Bhatia and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **104**, 20496-500, 2007.

88. "Power-limited contraction of *Vorticella convallaria*: an ultrast biological spring," A. Upadhyaya, M. Baraban, J. Wong, P. Matsudaira, A. van Oudenaarden and L. Mahadevan, *Biophysical Journal*, **94**, 265-72, 2008.
Perspective article in *Biophysical Journal*, **94**, 4, 2008.

89. "Life and times of a cellular bleb," G. Charras, M. Coughlin, T. Mitchison, and L. Mahadevan, *Biophysical Journal*, **94**, 1836-53, 2008.

90. "Limbleless undulatory propulsion on land," Z.V. Guo and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **105**, 3179-84, 2008.

91. "A quantitative analysis of contractility in active cytoskeletal protein networks," P. Bendix, G. Koenderink, D. Cuvelier, Z. Dogic, D. Koelman, W. Briehner, C. Field, L. Mahadevan and D. Weitz," *Biophysical Journal*, **94**, 3126-36, 2008.

92. "Elasticity of floppy and stiff random networks," M. Wyart, H. Liang, A. Kabla and L. Mahadevan, *Physical Review Letters*, **101**, 215501, 2008.

93. , "Equilibrium of an elastically confined drop," H-M Kwon, H-Y. Kim, J. Puell and L. Mahadevan, *J. Applied Physics*, **103**, 093519, 2008.

94. "Signal processing by the HOG MAP Kinase pathway," Hersen, M. McClean, L. Mahadevan and S. Ramanathan, *Proceedings of the National Academy of Sciences (USA)*, **105**, 7165-70, 2008.

95. "Optimal vein density in real and artificial leaves," X. Noblin, L. Mahadevan, I. Coomaraswamy, D. Weitz, N. Holbrook, M. Zwienecki, *Proceedings of the National Academy of Sciences (USA)*, **105**, 9140-44, 2008.

96. "Localized and extended deformations of elastic shells," A. Vaziri and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **105**, 7913-18, 2008.

97. "Dynamics of chromatin decondensation reveals the structural integrity of a mechanically prestressed nucleus," A. Mazumder, T. Roopa, A. Basu, L. Mahadevan, G. V. Shivashankar,, *Biophysical Journal*, **95**, 3028-35, 2008.

98. "How kelp produce blade shapes suited to different flow regimes: a new wrinkle," M. Koehl, W. Silk, H. Liang and L. Mahadevan, *Integrative and Comparative Biology*, **48**, 834-51, 2008.

99. "Implications of a poroelastic cytoplasm for the dynamics of animal cell shape," T. Mitchison, G. Charras and L. Mahadevan, *Seminars in Cell and*

Developmental Biology, **19**, 215-23, 2008.

100. "Polymer science and biology: structure and function at multiple scales," L. Mahadevan, *Faraday Discussions*, **139**, 9-19, 2008.

Inaugural/Opening lecture of the Faraday Discussions on Polymer Science and Biology.

101. "Quantifying the relation between bond number and myoblast proliferation," T. Boonthuekul, H-J Kong, S. Hsiong, Y-C Huang, L. Mahadevan, H. Vandenburg and D. Mooney," *Faraday Discussions*, **139**, 53-70, 2008.

102. "Non-equilibrium scale selection mechanism for columnar jointing," L. Goehring, L. Mahadevan and S. Morris, *Proceedings of the National Academy of Sciences (USA)*, **106**, 387-92, 2009.

Cover article – Jan 13, 2009 issue. Subject of various articles and interviews in popular press, e.g. U. Toronto press release, National Post-Canada, BBC-Ireland service etc.

103. "Self-organization of a meso-scale bristle into ordered hierarchical helical assemblies," B. Poakroy, S. Kang, L. Mahadevan and J. Aizenberg, *Science*, **323**, 237-40, 2009.

Subject of various articles and interviews in popular press, e.g. Harvard University press release, NPR – Science Friday, etc.

104. "Statistical mechanics of flowing blood via morphological image processing," J. Higgins, D. Eddington, S. Bhatia and L. Mahadevan, *PLoS Computational Biology*, **5(2)**, e1000288, 2009.

105. "Botanical ratchets," I. Kulic, M Mani, H Mohrbach, R Thaokar and L Mahadevan *Proceedings of the Royal Society (B)*, **276**, 2243-47, 2009.

Subject of various articles and interviews in popular press, e.g. commentary in Current Biology, Natural History Magazine etc.

106. "Tissue tectonics: morphogenetic strain rates, cell shape change and intercalation," G. Blanchard, A. Kabla, N. Schultz, L. Butler, B. Sanson, N. Gorfinkiel, L. Mahadevan and R. Adams, *Nature Methods*, **6(6)**, 458-64, 2009.

107. "Cell shape changes cause the fast phase of *Drosophila* germ-band extension," L. Butler, G. Blanchard, A. Kabla, N. Lawrence, D. Welchman, L. Mahadevan, R. Adams and B. Sanson, *Nature Cell Biology*, **11(6)**, 859-64, 2009.

108. "Strain-induced alignment in collagen gels," D. Vader, A. Kabla, D. Weitz, L. Mahadevan, *PLoS One*, **4(6)**, e5902, 2009.

109. "Hygromorphs: from pine cones to biomimetic bilayers," E. Reyssat and L. Mahadevan, *Journal of the Royal Society-Interface*, **6**, 951-57, 2009.

Cover article.

110. "Calcium regulation of an actin spring," B. Tam, J. Shin, E. Pfeiffer, P. Matsudaira and L. Mahadevan *Biophysical Journal*, **97**, 1125-29, 2009.

111. "Animal cell hydraulics," G. Charras, T. Mitchison, and L. Mahadevan, *Journal of Cell Science*, **122**, 3233-41, 2009.
112. "Infochemistry: encoding information as optical pulses using droplets in a microfluidic device," M. Hashimoto, J. Feng, R. York, A. Ellerbee, G. Morrison, S. Thomas, L. Mahadevan and G. Whitesides, *Journal of the American Chemical Society*, **131**, 12420-25, 2009.
113. "A generalized theory of viscous and inviscid flutter," S. Mandre and L. Mahadevan, *Proceedings of the Royal Society of London (A), Mathematical, Physical and Engineering Sciences*, **466**, 141-56, 2009.
114. "The shape and motion of a ruck in a rug," J. Kolinski, P. Aussillous and L. Mahadevan, *Physical Review Letters*, **103**, 174302, 2009.
Subject of various articles and interviews in popular press – CBS, le Figaro, CNN etc.
115. "Controlling the orientation and synaptic differentiation of myotubes with micropatterned surfaces," J. Gingras, R. Rioux, D. Cuvelier, N. Geisse, J. Lichtman, G. Whitesides, L. Mahadevan, J. Sanes, *Biophysical Journal*, **97**, 2771-78, 2009.
116. "Flip-flop induced relaxation of bending energy: implications for membrane remodeling," R. Bruckner, S. Mansy, A. Ricardo, L. Mahadevan, J. Szostak, *Biophysical Journal*, **97**, 3113-17, 2009.
117. "The shape of a long leaf," H. Liang and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **106**, 22049-54, 2009.
Subject of various articles and interviews in popular press – Science Daily, etc.
118. "Shape and dynamics of tip-growing cells," O. Campas and L. Mahadevan, *Current Biology*, **19**, 2102-06, 2009.
119. "Influence of feedback on the stochastic evolution of simple climate systems," L. Mahadevan and J. Deutch, *Proceedings of the Royal Society of London (A), Mathematical, Physical and Engineering Sciences*, **466**, 993-1001, 2010.
120. "Cooperative adhesion and friction of compliant nanohairs," L. Ge, A. Goyal, R. Shi, L. Mahadevan, P. Ajayan and A. Dhinojwala, *Nanoletters*, **10**, 4509-12, 2010.
121. "Statistical mechanics of developable ribbons," L. Giomi and L. Mahadevan, *Physical Review Letters*, **104**, 238104, 2010.
122. "Nanopottery: coiling of electrospun nanofibers," H-Y Kim, M Lee, K Park, S Kim and L. Mahadevan, *Nanoletters*, **10**, 2138-41, 2010.
123. "The Foppl-von Karman equations for plates with incompatible strains" M.

Lewicka, L. Mahadevan and M. Pakzad, , *Proceedings of the Royal Society of London ser. (A)*, **467**, 402-26, 2010.

124. "Why subduction zones are curved," L. Mahadevan, R. Bendick and H. Liang, *Tectonics*, **29**, TC6002, 2010.

125. "Control of shape and size of nanopillar assembly by adhesion-mediated elastocapillary interaction," S Kang, B Pokroy, L Mahadevan and J. Aizenberg, *American Chemical Society Nano*, **4**, 6323-28, 2010.

126. "Physiological and pathological population dynamics of circulating red blood cells," J. Higgins and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **107**, 20587-91, 2010.

Perspective in *New England Journal of Medicine* by Sir David Weatherall, January 2011.

127. "Geometry, mechanics and electronics of singular structures and wrinkles in graphene," V. Periera, A. Castro-Neto, H Liang and L Mahadevan, *Physical Review Letters*, **105**, 156603, 2010.

128. "The shallow turn of the worm," D. Kim, S Park, L. Mahadevan, and J. Shin, *Journal of Experimental Biology*, **214**, 1554-59, 2011.

129. "Elastohydrodynamics of bristles and brushes," A. Gopinath and L. Mahadevan, *Proceedings of the Royal Society, Lond. Ser. A*, **467**, 1665-85, 2011.

130. "Unfolding the sulcus," E. Hohlfeld and L. Mahadevan, *Physical Review Letters*, **106**, 105702, 2011.

Physical Review Focus Article + Cover. Commentary by C. Santangelo.

131. "Structural dynamics of an actin spring," L. Mahadevan, C. Riera and J. Shin, *Biophysical Journal*, **100**, 839-45, 2011.

132. "Growth, geometry and mechanics of the blooming lily," H. Liang and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **108**, 5516-21, 2011.

Subject of various articles and interviews in popular press, e.g. Nature Physics, New Scientist etc.

133. "Network connectivity using weighted harmonic averages," G. Morrison and L. Mahadevan, *Europhysics Letters*, **93**, 40002, 2011.

134. "How wet paper curls," E. Reyssat and L. Mahadevan, *Europhysics Letters*, **93**, 54001, 2011.

135. "Excitable patterns in active nematics," L. Giomi, L. Mahadevan, B. Chakraborty, M. Hagan, *Physical Review Letters*, **106**, 105702, 2011.

136. "Dynamic instability of a growing adsorbed polymorphic filament," S. Zapperi and L. Mahadevan, *Biophysical Journal*, **101**, 267-75, 2011.

137. "Painting with drops, jets and sheets," A. Hercyznski, C. Cernuschi and L. Mahadevan, *Physics Today*, 31-36, June 2011.

Subject of various articles and interviews in popular and scientific press, e.g. CBS, Science Daily, American Mathematical Association, etc

138. "Probability, physics and the coin toss," L. Mahadevan and E-H Yong, *Physics Today*, 66-67, July 2011.

139. "On the growth and form of the gut," T. Savin, N. Kurpios, A. Shyer, P. Florescu, H. Liang, L. Mahadevan and C. Tabin, *Nature*, **476**, 57-62, 2011.

News and Views in Nature Reviews-Gastroenterology, Current Biology. Subject of various articles and interviews in popular press, e.g BBC, La Recherche, New Scientist etc.

140. "Probability, geometry and dynamics in the toss of an inelastic coin," E-H Yong and L. Mahadevan, *American Journal of Physics*, **79**, 1195-1201, 2011.

141. " Shock driven jamming and periodic fracture of particulate rafts," M. Bandi, T. Tallinen and L. Mahadevan, *Europhysics Letters*, **96**, 36008, 2011.

142. "Buckling instability of a thin-layer Couette flow," A. Slim, J. Teichman and L. Mahadevan, *Journal of Fluid Mechanics*, **694**, 5-28, 2012.

Journal of Fluid Mechanics "Focus on Fluids" article by N. Ribe.

143. "Planar controlled gliding, tumbling and descent," P. Paoletti and L. Mahadevan, *Journal of Fluid Mechanics*, **689**, 489-516, 2011.

144. "Robust error correction in infofuses," G. Morrison, S. Thomas, C. LaFratta, J. Guo, M. Palacios, S. Sonkusale, D. Walt, G. Whitesides, and L. Mahadevan," *Proceedings of the Royal Society, Lond. Ser. (A)*, **2138**, 361-77, 2012.

145. "New encoding schemes with infofuses," K. Park, C. Kim, S. Thomas, H Yoon, G. Morrison, L. Mahadevan and G. Whitesides, *Advanced Materials*, **23**, 4851-56, 2011.

146. "Soft catenaries," K. Kamrin and L. Mahadevan, *Journal of Fluid Mechanics*, **691**, 165-177, 2012.

147. "A simple model for nanofiber formation by rotary jet spinning," P. Mellado, H. McIlwee, M. Badrossamay, J. Goss, L. Mahadevan and K. Parker, *Applied Physics Letters*, **99**, 203107, 2011.

148. "Multistability of free spontaneously curved anisotropic strips," L. Giomi and L. Mahadevan, *Proceedings of the Royal Society of London (A)- Phys. Sci.*, **468**, 511-30, 2012.

149. "Evolution of spur length diversity in *Aquilegia* petals is achieved solely through cell shape anisotropy," J. Puszey, S. Gerbode, S. Hodge, E. Kramer and

L. Mahadevan, *Proceedings of the Royal Society of London (B) – Biol. Sci.*, **279**, 1640-45, 2012.

Subject of various articles and interviews in popular press, e.g. New Scientist etc.

150. “Forced tearing of ductile and brittle thin sheets,” T. Tallinen and L. Mahadevan, *Physical Review Letters*, **107**, 245502, 2011.

151. “Hydrodynamics of writing with ink,” J. Kim, M-W Moon, K-R Lee, L. Mahadevan, H-Y Kim, *Physical Review Letters*, **107**, 264501, 2011.

Subject of various articles and interviews in popular press, e.g. PEN etc.

152. “The branch with the longest reach,” Z. Wei, S. Mandre and L. Mahadevan, *Europhysics Letters*, **97**, 14005, 2012.

153. “A biophysical marker of severity in sickle cell disease,” D. Wood, A. Soriano, L. Mahadevan, J. Higgins, S. Bhatia, *Science Translational Medicine*, **4**, 123-27, 2012.

Subject of various articles and interviews in popular press, e.g. ScienceNow etc

154. “Actin network growth under load,” O. Campas, L. Mahadevan, J-F. Joanny, *Biophysical Journal*, **102**, 1049-58, 2012.

155. “Skating on a film of air: drops impacting on a surface,” J. Kolinski, S. Rubinstein, S. Mandre, M. Brenner, D. Weitz, L. Mahadevan, *Physical Review Letters*, **108**, 074503, 2012.

156. “Minimal surfaces bounded by elastic lines,” L. Giomi and L. Mahadevan, *Proceedings of the Royal Society (London), series A*, **468**, 1851-64, 2012.

157. “Geometric control of rippling in supported nanolines,” V. Tirumala, C. Stafford, L. Ocola, J. Douglas and L. Mahadevan, *Nanoletters*, **12**, 1516-21, 2012.

158. “Twisting graphene nanoribbons into carbon nanotubes,” O.O. Kit, T. Tallinen, L. Mahadevan, J. Timonen, P. Koskinen, *Physical Review B*, **85**, 085428, 2012.

159. “Balancing on tightropes and slacklines,” P. Paoletti and L. Mahadevan, *Proceedings of the Royal Society-Interface*, **9**, 2097-2108, 2012.

Subject of various articles and interviews in popular press, e.g. Science Magazine etc.

160. “A method for tensile tests of biological tissues at the mesoscale,” T. Savin, A. E. Shyer, and L. Mahadevan, *Journal of Applied Physics*, **111**, 074704, 2012.

161. “Flow-induced channelization in a porous medium,” A. Mahadevan, A. Orpe, A. Kudrolli and L. Mahadevan, *Europhysics Letters*, **98**, 58003, 2012.

162. “How things get stuck: kinetics, elasto-hydrodynamics and adhesion,” M. Mani, A. Gopinath and L. Mahadevan, *Physical Review Letters*, **108**, 226104, 2012.

163. "Detecting communities through friendship," G. Morrison and L. Mahadevan, *PloS One*, **7**(7): e38704, 2012.
164. "The nature and scale of sulcification patterns," E. Hohlfeld and L. Mahadevan, *Physical Review Letters*, **109**, 025701, 2012.
165. "Banding, excitability and chaos in nematic suspensions," L. Giomi, L. Mahadevan, B. Chakraborty and M. Hagan, *Nonlinearity*, **25**, 2245-61, 2012.
166. "Strategies for cell shape control in tip-growing cells," O. Campas, E. Rojas, J. Dumais and L. Mahadevan, *American Journal of Botany*, **99**, 1577-82, 2012.
167. "Deformation and capillary self-repair of carbon nanotubes," V. Pushparaj, L. Mahadevan, R. Nalamasu, P. Ajayan, *Carbon*, **50** (15), 5618-20, 2012.
168. "How the cucumber tendrils coils and overwinds," S. Gerbode, J. Puzey, A. McCormick and L. Mahadevan, *Science*, **337**, 1087-91, 2012.
 Subject of various articles and interviews in popular press, e.g. BBC, NPR, Guardian, ScienceNow, etc.
169. "Geometric mechanics of curved crease origami," M. Dias, L. Dudte, L. Mahadevan, C. Santangelo, *Physical Review Letters*, **109**, 114301, 2012.
170. "Elastic configurations of self-supported oxide membranes for fuel cells," K. Kerman, T. Tallinen, S. Ramanathan and L. Mahadevan, *J. Power Sources*, **222**, 359-66, 2012.
171. "Physical basis for adaptability of bacterial spore coats," O. Sahin, E-H Yong, A. Driks and L. Mahadevan, *Proceedings of the Royal Society-Interface*, **9**, 3156-60, 2012.
172. "Slicing softly with shear," E. Reyssat, T. Tallinen M. Le Merrer and L. Mahadevan *Physical Review Letters*, **109**, 244301, 2012.
 Perspective by M.K. Chaudhury, "A cut above the rest," *Physics*, **5**, 139 (2012).
173. "Macroscopic magnetic frustration," P. Mellado, A. Concha and L. Mahadevan, *Physical Review Letters*, **109**, 257203, 2012.
 Perspective by P. Ball, "Watching ice spin" in *Natural Materials*, **12**, 100 (2013).
174. "The size, shape and dynamics of cellular blebs," F-Y. Lim, K-H. Chiam, and L. Mahadevan, *Europhysics Letters*, **100**, 28004, 2012.
175. "And the Ignobel goes toJoe Keller," L. Mahadevan, *SIAM News*, Dec. 2012.
176. "Watching paint dry," L. Mahadevan, Op-Ed, *The Harvard Undergraduate Research Journal*, **5**, 64, 2012.
177. " Surface sulci in squeezed soft solids," T. Tallinen, J.S. Biggins and L.

Mahadevan, *Physical Review Letters*, **110**, 024302, 2013.

Cover article.

178. "Swarming, swirling and stasis in sequestered bristle-bots," L. Giomi, N. Hawley-Weld and L. Mahadevan, *Proceedings of the Royal Society-A*, **469**, 20120637, **2013**.

Subject of commentary in New Scientist, BBC etc.

179. "Dissolution driven convection in a Hele-Shaw cell," A. Slim, M. Bandi, J. Miller and L. Mahadevan, *Physics of Fluids*, **25**, 024101, 2013.

180. "The cytoplasm of living cells behaves as a poroelastic material," A. Moeendarbary, L. Valon, M. Fritzsche, A. Harris, D. Moulding, A. Thrasher, E. Stride, L. Mahadevan and G. Charras, *Nature Materials*, **12**, 253-61, 2013.

Perspective article in the same issue of Natural Materials by J. Fredberg.

181. "Hydrodynamics of hemostasis in sickle-cell disease," S. Cohen and L. Mahadevan, *Physical Review Letters*, **110**, 138104, 2013.

182. "Adaptive fluid-infused porous films with tunable transparency and wettability," X. Yao, Y. Hu, A. Grinthal, T. Wong, L. Mahadevan, J. Aizenberg, *Nature Materials*, **12**, 529-34, 2013.

183. "Planar morphometry, shear and optimal quasi-conformal maps," G. Wyn Jones, L. Mahadevan, *Proceedings of the Royal Society (A)*, **469**, 20120653, 2013.

184. "Rationally designed complex, hierarchical microarchitectures," W. Noordium, A. Grinthal, L. Mahadevan, J. Aizenberg, *Science*, **340**, 832-37, 2013.

Perspective article in same issue of Science by Elias Vlieg. Wide coverage in media including NPR, BBC etc.

185. "Geometric mechanics of periodic pleated origami," Z. Wei, Z. Guo, L. Dudte, H. Liang, L. Mahadevan, *Physical Review Letters*, **110**, 215501, 2013.

186. "A pendulum in a flowing soap film," M. Bandi, A. Concha, R. Wood and L. Mahadevan, *Physics of Fluids*, **25**, 041702, 2013.

187. "Digital instability in an elastic meniscus," J. Biggins, B. StYves, Z. Wei, E. Bouchaud, L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **110**, 12545-548, 2013.

188. "Villification: how the gut gets its villi," A. Shyer, T. Tallinen, N. Nerurkar, Z. Wei, E-S. Kim, D. Kaplan, C. Tabin, L. Mahadevan, *Science*, **342**, 212-218, 2013.

Perspective article in same issue of Science by Benjamin Simons.

189. "How a tick gets under the skin," D. Richter, F.M. Rainer, A. Spielman, L. Mahadevan, *Proceedings of the Royal Society, Biol. Sci. (B)*, **280**, 20131758, 2013.

Vast coverage in media including a video in New York Times, interviews in BBC, Frankfurter Algeimer etc.

190. "Elastic Platonic shells," E.H. Yong, D.R. Nelson and L. Mahadevan, *Physical Review Letters*, **111**, 177801, 2013.
191. "Quantifying cell-generated mechanical forces within living embryonic tissues," O. Campas, T. Mammoto, S. Hasso, R. Sperling, D. O'connell, A. Gibbs, R. Maas, D. Weitz, L. Mahadevan, D. Ingber, *Nature Methods*, **11**, 183-89, 2014.
192. "Biased migration of confined neutrophil-like cells in asymmetric hydraulic environments," H. Prentice-Mott, C-H Chang, L. Mahadevan, T. Mitchison, D. Irimia, J.V. Shah, *Proceedings of the National Academy of Sciences (USA)*, **110**, 21006-21110, 2013.
193. "How a blister heals," J. Longley, L. Mahadevan and M. Chaudhury, *Europhysics Letters*, **104**, 46002, 2013.
194. "Flagellar dynamics of a connected chain of active, polar, Brownian particles," R. Chellakot, A. Gopinath, L. Mahadevan and M. Hagan, *Journal of the Royal Society- Interface*, **11**, 20130884, 2014.
195. "Collective thermoregulation in bee clusters," S. Ocko and L. Mahadevan, *Journal of the Royal Society- Interface*, **11**, 20131033, 2014.
196. "Bacillus spores as building blocks for stimuli-responsive materials and nanogenerators, X. Chen, L. Mahadevan, A. Driks, O. Sahin, *Nature Nanotechnology*, **9**, 137-141, 2014.
197. "Intermittent locomotion as an optimal control strategy," P. Paoletti and L. Mahadevan, *Proceedings of the Royal Society, Math. Phys. and Engg. Sci. (A)*, **470**, 20130535, 2014.
198. "Statistical mechanics and shape transitions in microscopic plates," E. H. Yong and L. Mahadevan, *Physical Review Letters*, **112**, 048101, 2014.
199. "Dynamics of a water droplet under a transmission electron microscope," F.Y. Leong, U. Mirsaidov, P. Matsudaira and L. Mahadevan, *Physics of Fluids*, **26**, 012003, 2014.
200. "Increased network interdependency leads to aging," D. can Vural, G. Morrison and L. Mahadevan, *Physical Review E*, **89**, 022881, 2014.
201. "Lift-off instability during the impact of a drop on a solid surface," J.M. Kolinski, L. Mahadevan, and S.M. Rubinstein, *Physical Review Letters* **112**, 1334501, 2014.

202. "Models for elastic shells with incompatible strains," M. Lewicka, L. Mahadevan and M.R. Pakzad, *Proceedings of the Royal Society , Math. Phys. and Engg. Sci (A)*, 470, 20130604, 2014.
203. "Density-gradient-free microfluidic centrifugation for analytical and preparative separation of nanoparticles," P. Arosio, T. Müller, L. Mahadevan, and T.P.J. Knowles, *Nano Letters*, **14 (5)**, 2365-71, 2014.
204. "Continuum dynamics of elastocapillary coalescence and arrest," Z. Wei and L. Mahadevan, *Europhysics Letters* 106, 14002, 2014.
205. "The dynamics of sperm cooperation in a competitive environment," H. Fisher, L. Giomi, H. Hoekstra, and L. Mahadevan, *Proceedings of the Royal Society Biological Sciences (B)*, **281**, 20140296, 2014.
Vast coverage in media including National Geographic, interviews in BBC, etc.
206. "Gyrification from constrained cortical expansion," T. Tallinen, J-Y Chung, J.S. Biggins and L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **111**, 12667-672, 2014.
Coverage in media including New Scientist, BBC, etc
207. "A proprioceptive neuromechanical theory of crawling," P. Paoletti and L. Mahadevan, *Proceedings of the Royal Society Biological Sciences (B)*, **281**, 20141092, 2014.
208. "Scaling macroscopic aquatic locomotion," M. Gazzola, M. Argentina, and L. Mahadevan, *Nature Physics*, **10**, 758-61, 2014.
Perspective article in same issue of Nature Physics by Friedrichs et al, press coverage in media.
209. "Evaporative microclimate-driven hygrometers and hygromotors," J-Y. Chung, H. King and L. Mahadevan, *Europhysics Letters*, **107**, 64002, 2014.
210. "Air-mediated rebound of a drop from a hydrophilic surface," J. Kolinski, L. Mahadevan and S. Rubinstein, *Europhysics Letters*, **108**, 24001, 2014.
211. "Neuromimetic circuits with synaptics devices based on strongly correlated electron systems," S.D. Ha, J Shi, Y. Meroz, L. Mahadevan, and S. Ramanathan, *Physical Review Applied*, **2**, 064003, 2014.
212. "Exactly isochoric deformations of soft solids," *Europhysics Letters*, **108**, 64001, 2014.
213. "Elastocapillary coalescence of plates and pillars," Z. Wei, T. Schneider, J. Kim, H_y. Kim, J. Aizenberg, and L. Mahadevan, *Proceedings of the Royal Society , Math. Phys. and Engg. Sci (A)*, 470, 20130604, 2015.
214. "Feedback induced phase transitions in active heterogeneous conductors," S. Ocko and L. Mahadevan, *Physical Review Letters*, **114**, 134501, 2015.

215. "Solid friction between soft filaments," A. Ward, F. Hilitski, W. Schwenger, D. Welch, V. Vitelli, L. Mahadevan and Z. Dogic, *Nature Materials*, **14**, 583-88, 2015.

216. "How the velvet worm squirts slime," A. Concha, P. Mellado, B Morera-Brenes, C. Costa, L. Mahadevan, J. Monge-Najera, *Nature Communications*, **6**, 6292, 2015.

Coverage in media including NYTimes, CNN, BBC, etc

217. "Gait and speed selection in slender inertial swimmers," M. Gazzola, M. Argentina and L. Mahadevan, *Proceedings of the National Academy of Sciences(USA)*, **112**, 3874-79, 2015.

218. "Bending gradients: how the intestinal stem cell gets its home," A. Shyer, T. Huycke, C. Lee, L. Mahadevan, and C. Tabin, *Cell*, **161**, 569-80, 2015.

219. "Fluid-driven fingering instability of a confined elastic meniscus," J. Biggins, Z. Wei, L. Mahadevan, *Europhysics Letters*, **110**, 34001, 2015.

220. "Protein-mediated membrane adhesion," A. Carlson, L. Mahadevan, *Physics of Fluids*, **27**, 051901, 2015.

221. "The organization and control of an evolving interdependent population," D. can Vural, A. Isakov, L. Mahadevan, *Proceedings of the Royal Society-Interface*, **12**, 20150044, 2015.

222. "Optimal control of plates using incompatible strains," G. Jones and L. Mahadevan, *Nonlinearity*, **28**, 3153-74, 2015.

223. "Elastohydrodynamics of a sliding, spinning and sedimenting cylinder near a soft wall," T. Salez, L. Mahadevan, *Journal of Fluid Mechanics*, **779**, 181-96, 2015.

224. "Termite mounds harness diurnal temperature oscillations for ventilation," H. King, S. Ocko, L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **112**, 11589-93, 2015.

Coverage in media including BBC, Canadian Radio, Danish, Finnish TV etc

225. "Dynamics of evaporative colloidal patterning," C. Kaplan, N. Wu, S. Mandre, J. Aizenberg, L. Mahadevan, *Physics of Fluids*, **27**, 092105, 2015.

Coverage in media including AIP (American Institute of Physics), Eureka-Alert etc

226. "Evaporation-driven ring and film deposition from colloidal droplets," C. Kaplan, L. Mahadevan, *Journal of Fluid Mechanics*, **781**, R2, doi:10.1017/jfm.2015.496, 2015.

227. "Elastohydrodynamics and kinetics of protein patterning in the immunological synapse," A. Carlson, L. Mahadevan, *PloS Computational Biology*, DOI: 10.1371/journal.pcbi.1004481, 2015.

228. "The Monge-Ampere constraint: matching of isometries, density and regularity, and elastic theories of shallow shells," M. Lewicka, L. Mahadevan, R. Pakzad, *Ann. Inst. Henri Poincare*, **34**, 45-67, 2015.

229. "Pressure-driven occlusive flow of a confined red blood cell," T. Savin, M. Bandi and L. Mahadevan, *Soft Matter*, **12**, 562-73, 2016.

230. "Elastic Cheerios effect: self assembly of cylinders on a soft solid," A. Chakrabarti, L. Ryan, M. Chaudhury and L. Mahadevan, *Europhysics Letters*, **112**, 54001, 2015.

231. "A geometric model for the periodic undulation of a confined adhesive crack," Z. Wei and L. Mahadevan, *Soft Matter*, **12**, 1778-82, 2015.

232. "Directional memory arises from long-lived cytoskeletal asymmetries in polarized chemotactic cells," H. Prentice-Mott, Y. Meroz, A. Carlson, M. Levin, M. Davidson, D. Irimia, G. Charras, L. Mahadevan and J. Shah, *Proceedings of the National Academy of Sciences (USA)*, **113**, 1267-72, 2016.

233. "Similarity and singularity in adhesive elastohydrodynamic touchdown," A. Carlson and L. Mahadevan, *Physics of Fluids*, **28**, 011702, 2016.

234. "On the growth and form of cortical convolutions," T. Tallinen, J-Y. Chung, F. Rosseau, N. Girard, J. Lefevre, L. Mahadevan, *Nature Physics*, **12**, 588-93, 2016.

Subject of various articles and interviews in popular press, e.g. commentary in *Nature Physics*, articles in BBC, LA Times, CNBC, Canadian BC etc.

235. "Biomimetic 4D printing," A. S. Gladman, E. Matsumoto, R. Nuzzo, L. Mahadevan and J. Lewis, *Nature Materials*, **15**, 413-18, 2016.

Subject of various articles and interviews in popular press, e.g. commentary in *Nature Materials*, articles in BBC, LA Times, etc.

236. "Programming curvature using origami tessellations," L. Dudte, E. Vouga, T. Tachi and L. Mahadevan, *Nature Materials*, **15**, 583-88, 2016.

Subject of various articles and interviews in popular press, e.g. *Popular Science*, *Wired* etc.

237. "Buckling of wet paper," M. Lee, S. Kim, H-Y. Kim, L. Mahadevan, *Physics of Fluids*, **28**, 042101, 2016.

238. "Recovery of locomotion after injury in *D. melanogaster* depends on proprioception," A. Isakov, S. Buchanan, B. Sullivan, A. Ramachandran, S. Chapman, L. Mahadevan, B. deBivort, *Journal of Experimental Biology*, **219**, 1760-71, 2016.

239. "Self-sustained lift and low friction via soft lubrication," B. Styves, T. Jules, T. Salez, L. Mahadevan, *Proceedings of the National Academy of Sciences (USA)*, **113**, 5847-49, 2016.

240. "Phototactic guidance of a tissue-engineered soft-robotic ray," S-J Park, M. Gazzola, ..., L. Mahadevan, K.K. Parker, *Science*, **353**, 158-162, 2016.

Subject of various articles and interviews in popular press, e.g. articles in NYTimes, BBC, LA Times, etc.

241. "Integrative neuromechanics of crawling in *D. melanogaster* larvae," C. Pehlevan, P. Paoletti, L. Mahadevan, *E-Life*, 2016; 5:e11031.

242. "Elastic instability-mediated actuation by a supramolecular polymer," A. Levian, T. Michaels, L. Adler, T. Mason, T. Mueller, L. Mahadevan, E. Gazit, T. Knowles, *Nature Physics*, **12**, 926-30, 2016.

243. "Optimal switching between geocentric and egocentric strategies in navigation," O. Peleg and L. Mahadevan, *Royal Society Open Science*, **3**, 160128, 2017.

244. "Spontaneous exfoliation of a drying gel, J. Y. Chung, I. Regev and L. Mahadevan," *Soft Matter*, **12**, 7855-62, 2016.

245. "Grasping with a soft glove: intrinsic impedance control in pneumatic actuators," P. Paoletti, G. W. Jones and L. Mahadevan, *Journal of the Royal Society Interface* **14**, 20160867, 2017

246. "BMP signaling controls buckling forces to modulate looping morphogenesis of the gut," N. L. Nerurkar, L. Mahadevan, and C.J. Tabin, *Proceedings of the National Academy of Sciences (USA)*, **114**, 2277-82, 2017.

247. "Controlled growth and form of precipitating microsculptures," C. N. Kaplan, W. L. Noorduin, L. Li, R. Sadza, L. Folkertsma, J. Aizenberg, L. Mahadevan, *Science* **355**, 1395-99, 2017.

248. "On the growth and form of shoots," R. Chelakkot and L. Mahadevan, *Journal of the Royal Society Interface*, **14**, 20170001, 2017.

Selected Invited Lectures (of more than 120 in the last decade)

January 2001, "Buckling phenomena in fluids," G I Taylor Lecture, Cambridge Philosophical Society, Cambridge, UK

May 2002, "A search for structure: from molecules to morphogenesis" Inaugural Lecture of the Schlumberger Professor of Complex Physical Systems, Cambridge University, UK.

February 2003, "Size, shape and structure: mechanics of macromolecular assemblies", Frontiers in Science Seminar, Whitehead Institute for Biomedical Research, Cambridge, USA

May 2003, "Geometry and physics in biology," Inaugural lecture on the opening of the Corfield Institute of Applied Mathematics, Cambridge University, UK.

November 2003, "Physical packing problems: from DNA to origami," Alan Tayler Lecture, Oxford University, UK.

March 2004, 4 lectures on "Physics of the cell," International Winter School, Les Houches, France.

January, 2005, "Shape, flow, motion and locomotion," 3 lectures at the MIT Center for Theoretical Physics Retreat – Common Man Inn, NH

May 2005, "Mechanics in extreme geometries," Exxon-Mobil Frontiers in Soft Matter Conference, Clinton, NJ

July 2005, "Draping, wrinkling and crumpling: geometry and physics," Plenary Lecture, Society for Industrial and Applied Mathematics Annual Meeting, New Orleans, LA

April 2006, "Mathematics, mechanics and motility," DARPA DSRC Outlook speaker, Washington, D.C.

September 2006 – April 2007, Midwest Mechanics Lecturer. Lectures on 5 different topics at 10 Universities (Illinois, Wisconsin, Iowa, IIT, Northwestern, Purdue, Notre Dame, Michigan, MSU, Minnesota)

February 2007, "Mathematics, mechanics and motility," NIH Director's Lecture Series, National Institutes of Health, Bethesda, MD.

July 2007, "Soft Hydraulics: physics and physiology," Invited Speaker, StatPhys 21, International Conference on Statistical Physics, Genoa, Italy.

December 2007, "Cellular hydraulics," Invited lecture, American Society of Cell Biology Symposium on "Building a cell", Washington, DC

July 2008, "Mechanochemistry and motility," Plenary lecture, Society for Mathematical Biology Annual Meeting, Toronto, CA.

April 2009, "Motility: mathematics, mechanics, mimetics," German-American Frontiers in Engineering Symposium sponsored by the US National Academy of Engineering, Potsdam, Germany.

July 2009, "Extending the material," Inauguration of the Oxford Center for Collaborative Applied Mathematics, Oxford, UK.

April 2010, "Morphogenesis," Plenary Lecture, British Mathematics Colloquium, British Applied Mathematics Colloquium, Edinburgh, UK.

Nov 2010, "Geometry and the brain," Singleton lectures, Department of Brain and Cognitive Sciences, MIT, Cambridge, MA, USA.

May 2011, "Soft interfaces and morphogenesis," Amick Lectures, Department of Mathematics, University of Chicago, IL, USA

April 2012, "Continuum and statistical mechanics of ribbons," Colloquium Ehrenfestii, Institut Lorentz, Leiden, Netherlands.

November 2012, "On growth and form: mathematics, physics and biology," Young Lecture, University of Maryland.

September 2013, "On growth and form: mathematics, physics and biology," Simons Foundation Lecture, Brown University.

July 2014, "Gilding the lily: morphogenesis in plants," Clay Institute Lecture, IAS Summer School, Park City, Utah.

Doctoral and post-doctoral students

Trained ~20 graduate students, ~50 postdoctoral fellows. Many have gone on to faculty positions in a variety of science/ engineering departments e.g. mathematics, physics, biology, mechanical, chemical engineering and medicine, and industry e.g. Wall Street, Google, Amazon and various startups.

Doctoral theses (at MIT)

1. Teichman, J. "Wrinkling and sagging of viscous sheets," 2002. Currently at Institute for Defense Analysis, Washington D.C.
2. Eungdamrong, J. (jointly with T. Mitchison, Harvard Medical School) "Polymerization-driven force generation in *Listeria*", 2002. Later M.D. Columbia University.
3. Shin, J. (with P. Matsudaira, Biology, MIT) "Statics and dynamics of actin assemblies," 2003. Currently Associate Professor of Mechanical Engineering, KAIST, Korea.

Doctoral theses (at Cambridge)

1. Skotheim, J. "Some poroelasticity problems in biomechanics," 2004. Currently Associate Professor of Biological Sciences, Stanford University.

2. Cohen, A. (with M Pepper, Cavendish) "Nanoscale mechanics," 2003. Currently Professor of Chemistry, Harvard University.
3. Vella, D. (with H Huppert, DAMTP) "Interfacial failure," 2007. Currently Associate Professor of Mathematics, Oxford University.

Doctoral theses (at Harvard)

1. Hohlfeld, E. "Creases, point bifurcations and the spontaneous breakdown of scale invariance," 2008. Currently working in private industry (Wall Street).
2. Guo, Z. (with S. Ramanathan, Molecular and Cell Biology) "Some problems in biomechanics and neurobiology," 2010. Currently Assistant Professor of Biology, Tsinghua University, Beijing, China.
3. Mani, M. (with M. Brenner, SEAS) "Dynamics at soft interfaces," 2010. Currently Assistant Professor of Applied Mathematics, Northwestern University.
4. Yong, E-H, "Elasticity and biophysics," 2012. Currently Assistant Professor of Physics, Nanyang Institute of Technology, Singapore.
5. Mukherjee, A. "Studies in elasto-hydrodynamics: singing and swimming," 2012. Currently postdoc in Physics, OIST, Okinawa, Japan.
6. Kolinski, J. "Interfacial dynamics," Dec. 2013. Currently postdoc in Physics at Hebrew University, Israel.
7. Wei, Z. "Discrete and continuum mechanics," Aug. 2014. Currently postdoc in Biology at Stanford University.
8. McCormick, A. "Discrete differential geometry and physics of curves," Aug. 2013. Currently in private industry (Google).
9. Ocko, S. "Active porous media," Aug. 2015. Currently Duboc postdoc in Physics at Stanford University.
10. Isakov, I. "Studies in collective action," May 2016. Currently postdoc at Yale University.
11. Dudte, L. "Origami mathematics and mechanics," May 2017.
12. Salcedo, M. "Dynamics of wing inflation in insects," started in 2013.
13. Marantan, A. "Probabilistic learning about the physical world," May 2017.
14. Peters, J., "Collective behavior in honey bees," started in 2012.

Post-doctoral associates and senior visitors (at MIT)

1. Dr. E. Cerda, Topic: Nonlinear Physics. February, 1997 – June, 1998.
Currently Professor of Physics, U. de Santiago de Chile, Santiago, Chile.
2. Dr. S. Chaieb (with G. McKinley). Topic: Experimental nonlinear physics.
September
1998- December 1999. Currently Assistant Professor of Mechanical Science
and Engineering, KAUST, Saudi Arabia.
3. Dr. A. Upadhyaya (with R. Kamm) Topic: Pattern formation in adherent and
motile cells. January 2000-December 2001. Currently Assistant Professor of
Physics, University of Maryland.
4. Professor Martine Ben Amar, Universite de Paris VI, sabbatical 1998-99.
5. Professor Yves Pomeau, Ecole Normale Superieure, Paris, April 2000.

Post-doctoral associates and senior visitors (at Cambridge)

1. Dr. D. Richard, Topic: Experimental soft matter physics. Aug. 2001 – June
2002. Dr. Richard is with Vivendi Water, Stockholm.
2. Dr. J. Dumais, Topic: Plant cell morphogenesis. Sep. 2001 – July 2003. Dr
Dumais is currently an Associate Professor of Biology at Harvard University.
3. Dr. E. Cerda, Professor of Physics, U. Santiago de Chile, Chile. July 2001 – Dec
2003.
4. Dr. M. Adda-Bedia. CNRS, LPS, ENS, Paris, France. February 2002 – February
2003. Currently Charge de Recherche, Laboratoire de Physique Statistique, Ecole
Normale Superieure, Paris.
6. Dr. Y. Forterre, Topic: Experimental soft matter physics, Aug. 2002 – present.
Currently Charge de Recherche, IUSTI, Universite de Provence, Marseilles.

Post-doctoral associates and senior visitors (at Harvard)

1. Dr. C. Riera, Topic: Nonlinear physics. Sep 2002 – Sep 2004. Currently a private
entrepreneur.
2. Dr. M. Argentina, Topic: Elastohydrodynamics and animal locomotion, Sep
2002 – Aug. 2004. Currently a Maitre d'Conference (Asst. Prof.) of Physics at
the Univ. of Nice, France.

3. Dr. A. Ghatak, Topic: Experimental studies on adhesion, March 2002 – May 2004. Currently Associate Professor of Chemical Engineering IIT, Kanpur, India.
4. Dr. C. Koudella, Topic: Computational molecular mechanics, Sep 2002 – Aug 2004. Currently on Wall Street.
5. Dr. M. Das, Topic: Physics of soft membranes, Sep 2004 – Oct 2005. Currently Asst. Prof. of Physics, U. Rochester, NY.
6. Dr H-Y Kim, Topic: Capillarity and elasticity, Sep 2004 – Dec 2004. Currently Asst Prof. of Mechanical Engineering at Seoul National University, Korea.
7. Dr. A. Kabla, Topic: Physical mechanics, Dec 2004 – Jan 2007. Currently Lecturer (Asst Prof.) of Engineering, Cambridge University, UK..
8. Dr. A. Gopinath, Topic: Physiology and materials, Jan 2005 – Aug 2007. Currently postdoctoral fellow in Physics, Brandeis University.
9. Dr. D. Cuvelier, Topic: Experimental Biophysics, Sep 2005 – Aug 2007. Currently Maitre d'Conference at the Institut Curie and the University of Paris, France.
10. Dr. M. Wyart (with M. Brenner, D. Fisher, D. Nelson), Aug. 2005- July 2006. Currently Asst. Professor of Physics, New York University, New York.
11. Dr. I. Kulic, Topic: Biophysics, Nov 2006 – April 2008. Currently Charge de recherch e at CNRS, Laboratoire de Physiochimie polymeres, Strasbourg, France.
12. Dr. J. Higgins, MD. Topic: Sickle cell disease. Jan. 2006 – Aug. 2009. Currently Asst. Prof. of Systems Biology, Harvard Medical School, Boston, MA.
13. Dr. E. Reyssat, Topic: Elastohydrodynamics, Oct. 2007 – July 2009. Currently Charge de Recherche, Lab. de Physique et Mecanique Milieux Heterogenes, ESPCI, Paris, France.
14. Dr. S. Mandre (with M. Brenner), Topic: Elastohydrodynamics. Aug. 2006 –June 2010. Currently Asst. Prof. of Engineering, Brown University, Providence, RI.
15. Dr. H. Liang, Topic: Surfaces and interfaces, April 2007 – April 2010. Currently Prof. of Mechanics, University of Science and Technology, Hefei, China.
16. Dr. T. Savin, Topic: Soft matter physics, Oct. 2007 – Dec. 2009. Currently Asst. Prof. of Engineering, Cambridge University, UK.

17. Dr. O. Campas (with M. Brenner), Topic: Biophysics of morphogenesis, Oct 2007 –2011. Currently Asst. Prof. of Mechanical Engineering, U C Santa Barbara.
18. Dr. M. Venkadesan (with D. Lieberman), Topic: Human biomechanics, Oct 2008 – Dec 2010. Currently Asst Prof. of Engineering, Yale University, CT.
19. Dr. A. Slim, Topic: Flow in and deformation of porous media, Oct 2009 – Jan 2011. Currently Lecturer in Mathematics and Geosciences, Monash University, Australia.
20. Dr. K. Kamrin, Topic: Plasticity in thin geometries (NSF fellow), Sep 2008-Jan 2010. Currently Asst Prof. of Mech. Engg., MIT.
21. Dr. G. Morrison, Topic: Statistical mechanics of networks, Oct. 2008 – May 2013. Currently Asst. Prof. of Economics, Lucca, Italy.
22. Dr. M. Bandi, Topic: Soft matter physics, Oct. 2009 – Oct. 2011. Currently Asst. Prof. of Physics, Okinawa Institute of Science and Technology, Japan.
23. Dr. L. Giomi, Topic: Geometry and statistical physics, July 2010 – Aug 2012. Currently Asst. Prof. of Physics, Lorentz Institut, Leiden, Amsterdam.
24. Dr. A. Concha (with R. Wood), Topic: Fluid physics and locomotion, Mar 2010 – May, 2012. Currently Asst. Prof. of Physics, U. Adolfo Ibanez, Chile.
25. Dr. P. Paoletti, Topic: Optimization and control in biological systems, July 2010 – July 2012. Currently Asst. Prof. of Engineering, U. Liverpool, UK.
26. Dr. P. Mellado, Topic: Collective dynamics in fluid and spin systems, Aug 2010 – May 2012. Currently Asst. Prof. of Physics, U. Adolfo Ibanez, Chile.
27. Dr. S. Gerbode, Topic: Tendril and flower morphogenesis, Sep 2010 – Nov. 2011. Currently Asst Prof. of Physics, Harvey Mudd College, CA.
28. Dr. T. Tallinen, Topic: Mechanical aspects of morphogenesis, Sep 2010 – April 2012. Currently Asst. Prof. of Physics, Jyvaskyla University, Finland.
29. Dr. G. Wyn Jones, Topic: Inverse problems in soft matter, Jan 2010 – Dec. 2011. Currently Lecturer in Mathematics, U. Manchester, UK.
30. Dr. J. Biggins, Topic: Elasticity and morphogenesis, Oct 2010 – Oct 2012. Currently Research Fellow at Trinity Hall, and Cavendish Lab., Cambridge University, UK.
31. Dr. Dervis can Vural, Topic: Dynamics of and in complex networks, July 2012 – December 2013. Currently Asst. Prof. of Physics, U. Notre Dame, IN.

32. Dr. Eliran Boksenbojm, Topic: Statistical mechanics of nonequilibrium systems, Sep 2012 – Aug 2013. Currently in private industry.
33. Dr. Nadir Kaplan, Topic: Multiphase flow, Oct 2012 – August 2016. Currently, postdoc in Materials Science, Harvard University.
34. Dr. Hunter King, Topic: Collective dynamics of social insects and bristlebots, Oct 2012 – July 2016. Asst. Prof. of Polymer Science and Biology, U. Akron, Ohio.
35. Dr. Jun Chung, Topic: Active soft matter, Oct. 2012 – present.
36. Dr. Etienne Vouga, Topic; Discrete differential geometry and mechanics, Oct 2013 – Aug 2014. Currently Asst. Prof. of Comp. Sci., U-T. Austin, TX
37. Dr. Andreas Carlson, Topic: Interfacial fluid mechanics, Sep 2012 – Aug 2015. Currently Asst. Prof. of Mathematics, U. Oslo, Norway.
38. Dr Renaud Bastien, Topic: Proprioceptive biophysics, Nov. 2012 – Dec 2014. Currently postdoc at Max Planck Institute- Cologne.
39. Dr. Yasmine Meroz, Topic: Statistical mechanics of decision making in cells and organisms, Oct 2013 – present.
40. Dr. Raghu Chelakkot, Topic: Physics and dynamics of strings and ropes, Sep 2013 – May 2015. Currently Asst. Prof. of Physics, IIT- Mumbai, India.
41. Dr. Mattia Gazzola, Topic: Neurodynamics of swimming, Oct. 2013 – July 2016. Currently Asst. Prof. of Mech. Engg., U. Illinois, Urbana-Champaign.
42. Dr. Teresa Ruiz, Topic: Cellular biophysics, Oct 2013 – present.
43. Dr. Orit Peleg, Topic: Collective dynamics in biophysics, Jan 2014 – present.
44. Dr. Baudouin Styves, Topic: Collective dynamics of robots, Jan 2014 – September 2016. Currently postdoc at MIT.
45. Dr. Ido Regev, Topic: Morphogenesis and pattern formation in biology and physics, Feb 2014 – Jan 2016. Currently Asst. Prof. of Physics, Ben Gurion University, Israel.
46. Dr. Elisabetta Matsumoto (with M. Brenner), Topic: Geometry and mechanics of soft matter, Sep 2014- July 2016. Asst. Prof. of Physics, Georgia Tech.
47. Dr. Siddharth Srinivasan, Topic: Hydrodynamics of thin viscous sheets and biofilms, Jan 2015 – present.

48. Dr. Wim van Rees, Topic: Neuromechanics of locomotion, May 2015 – present.
49. Dr Yuval Hart, Topic: Psychophysics and geometry, Aug 2015 – present.
50. Dr Chon U Chan, Topic: Chemotaxis of cells, February 2016 – present.
51. Dr. Manasvi Lingam, Topic: Mathematics of active fluids, November 2016 – present.