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EDUCATION & PROFESSIONAL EXPERIENCE

Assistant Professor, Mechanical Engineering Boston University, Boston, MA	2014 – Present
Assistant Professor, Engineering Science & Mechanics Virginia Tech, Blacksburg, VA	2011 – 2014
Postdoctoral Research Associate Princeton University, Princeton, NJ	2009 – 2011 Advisor – <i>Howard A. Stone</i>
Ph.D. in Polymer Science & Engineering University of Massachusetts, Amherst, MA	2009 Advisor – <i>Alfred J. Crosby</i>
M.S. in Polymer Science & Engineering University of Massachusetts, Amherst, MA	2005
B.S. in Chemistry University of New Hampshire, Durham, NH	2004 Advisor – <i>Donald C. Sundberg</i>

VISITING POSITIONS

4U Summer School “Complex Motion in Fluids”, Copenhagen	Visiting Lecturer	2015
École Supérieure de Physique et de Chimie Industrielles (ESPCI)	Visiting Professor	2015
Aalto University, School of Science	Visiting Professor	2015
Sapienza Università di Roma	Visiting Lecturer	2015
University Pierre and Marie Curie	Visiting Professor	2013
Oxford University – OCCAM	Visiting Scholar	2011, 2013
Oxford University – Collaborative Workshop Initiative (CWI)	Participant	2011–2014

AWARDS & HONORS

NSF CAREER Award – CMMI: Mechanics of Materials	2015
ASEE Ferdinand P. Beer and E. Russell Johnston, Jr. Outstanding New Mechanics Educator	2013
PACAM – NSF Travel Scholarship	2013
Best Poster Prize at the <i>WE-Heraeus Seminar</i> , Bad Honnef, DE	2010
ICAM Scientist Travel Award: <i>Dynamics in Soft Condensed Matter: Dynasoft 2010</i> , Corsica, FR	2010
NSF Travel Fellowship - Short Course on <i>Mechanics of Soft Materials</i>	2010
APS Padden Award Finalist	2009
Adhesion Society Peebles Award	2009
Distinguished Best Paper at the Adhesion Society	2008
UNH College of Engineering & Physical Sciences <i>Douglas R. Woodward Award</i>	2004
UNH College of Engineering & Physical Sciences <i>Wilfred F. Langelier Award</i>	2004
Summer Undergraduate Research Fellowship for Polymer Research at the University of Sydney, AU	2003
UNH Chemistry <i>Vernon Lerch Award</i>	2001

PUBLICATIONS & PATENTS

1. B. Tavakol, G. Froehlicher, **D.P. Holmes**, and H.A. Stone. “Extended Lubrication Theory: Estimation of Fluid Flow in Channels with Variable Geometry,” *Under Review: Physics of Fluids*, (2015). (also: *arXiv:1403.2343*)
2. R.H. Plaut, A.D. Borum, **D.P. Holmes**, and D.A. Dillard, “Falling vertical chain of oscillators, including collisions, damping, and pretensioning,” *Accepted: Journal of Sound and Vibration*, (2015).
3. **D.P. Holmes**, A. Borum, B. F. Moore III, D. A. Dillard, R. H. Plaut, “Equilibria and Instabilities of a Slinky: Discrete Model,” *International Journal of Non-Linear Mechanics*, **65**, 236–244, (2014). (also: *arXiv:1403.6809*)
4. B. Tavakol, M. Bozlar, G. Froehlicher, H.A. Stone, I.A. Aksay, and **D.P. Holmes**, “Buckling Instability of Dielectric Elastomeric Plates for Flexible Microfluidic Pumps,” *Soft Matter*, **10**(27), 4789–4794, (2014).
5. A. Pandey, D. Moulton, D. Vella, and **D.P. Holmes**. “Dynamics of snapping beams and jumping poppers” *EPL (Europhysics Letters)*, **105**, 24001, (2014). (also: *arXiv:1310.3703*)

6. A.J. Crosby, **D.P. Holmes**, K. Kalaitzdou, E.P. Chan, C.J. Rand. *Stimuli-Responsive Surfaces and Related Methods of Use*, U.S. Patent 8,906,283, (December 9, 2014).
7. **D.P. Holmes**, B. Tavakol, G. Froehlicher, and H.A. Stone. "Control and Manipulation of Microfluidic Flow via Elastic Deformations," *Soft Matter*, **9**, 7049, (2013). (**Special Issue: Emerging Investigators**)
8. A. Pandey and **D.P. Holmes**. "Swelling-Induced Deformations: A Materials-Defined Transition from Structural Instability to Surface Instability," *Soft Matter*, **9**, 5524, (2013).
9. **D.P. Holmes**, "Elastic Instabilities for Form and Function." *iMechanica - Journal Club*, February, (2012). (**Invited Review**)
10. M. Staykova, **D.P. Holmes**, C. Read, and H.A. Stone. "Mechanics of Surface Area Regulation of Cell Membranes," *Proceedings of the National Academy of Sciences*, **108**, 22, 9084, (2011).
11. **D.P. Holmes**, M. Roché, T. Sinha, and H.A. Stone. "Bending and Twisting of Soft Materials by Non-Homogenous Swelling," *Soft Matter*, **7**, 5188, (2011).
12. **D.P. Holmes** and A.J. Crosby. "Draping Films: A Wrinkle to Fold Transition," *Physical Review Letters*, **105**, 038303, (2010).
13. **D.P. Holmes**, M. Ursiny and A.J. Crosby. "Crumpled Surface Structures," *Soft Matter*, **4**, 82-85 (2008).
14. **D.P. Holmes** and A.J. Crosby. "Snapping Surfaces," *Advanced Materials*, **19**, 21, 3589-3593, (2007).

INVITED PRESENTATIONS

1. *Upcoming*: Massachusetts Institute of Technology, Physical Mathematics Seminar, *Morphing of Slender Structures by Swelling*, 2015.
2. *Upcoming*: University of California, Santa Barbara, Mechanical Engineering, *Morphing of Slender Structures by Swelling*, 2015.
3. *Upcoming*: National Institute for Standards and Technologies (NIST), *Morphing of Slender Structures by Swelling*, 2015.
4. Purdue University, Center for Materials Processing and Tribology, *Morphing of Slender Structures by Swelling*, 2015.
5. Harvard University, SEAS Applied Mechanics Colloquia, *Buckling and Snapping Structures for Advanced Functionality*, 2014.
6. Boston University, Mechanical Engineering, *Buckling and Snapping Structures for Advanced Functionality*, 2014.
7. Boston University, Mechanical Engineering, *Morphing of Slender Structures by Swelling*, 2013.
8. Brown University, Applied Mathematics, *Morphing of Slender Structures by Swelling*, 2013.
9. James Madison University, Physics and Astronomy, *Toy Mechanics: Popping Poppers and Slinking Slinkys*, 2013.
10. University Pierre and Marie Curie, *Toy Mechanics: Popping Poppers and Slinking Slinkys*, 2013.
11. APS March Meeting, Focus Session: *Soft Matter, Biology, & Bioinspiration* - Baltimore, MD, *Swelling Structures*, 2013.
12. New England Complex Fluids Workshop, Yale University - New Haven, CT, *Using Thin Films of Rubber to Move Thin Films of Fluid*, 2013.
13. Princeton University, CWI Seminar, *Mechanics and Dynamics of Snapping Structures*, 2013.
14. California Institute of Technology, GALCIT Seminar - Pasadena, CA, *Swelling Structures: Bending, Twisting, and Snapping to Functionality*, 2012.
15. Oxford University, OCCAM Seminar, *Control and Manipulation of Fluid Flow using Elastic Deformations*, 2012.
16. Oxford University, OCCAM Seminar, *Dancing Discs: Bending and Twisting of Soft Materials by Non-Homogenous Swelling*, 2011.
17. Virginia Tech, Engineering Science & Mechanics, *Mechanics of Soft Materials: Elasticity, Dynamics, and Geometry*, 2011.
18. Princeton University, Mechanical and Aerospace Engineering, *Crumpling, Folding, and Snapping Films*, 2009.
19. APS March Meeting: **Padden Award Symposium** - Pittsburgh, PA, *Responsive Polymer Surfaces: Crumpling, Folding, and Snapping Films*, 2009.
20. Adhesion Society: **Peebles Award Talk** - Savannah, GA, *Responsive Polymer Surfaces*, 2009.