

James H. Henderson

PROFESSIONAL PREPARATION

Rice University, Houston, TX	Mechanical Engineering	B.S. 1999
Stanford University, Palo Alto, CA	Mechanical Engineering	M.S. 2001
Stanford University, Palo Alto, CA	Mechanical Engineering	Ph.D. 2004
Case Western Reserve University, Cleveland, OH	Biology & Orthopaedics	Postdoc 2004-2008

APPOINTMENTS

- 5/14–pres. *Associate Professor (by courtesy)*, Dept. of Biology, Syracuse University, Syracuse, NY
- 5/14–pres. *Associate Professor*, Dept. of Biomedical and Chemical Engineering and Syracuse Biomaterials Institute, Syracuse University, Syracuse, NY
- 1/12–pres. *Bioengineering Graduate Program Director*, Dept. of Biomedical & Chemical Engineering, Syracuse University, Syracuse, NY
- 5/10–pres. *Member*, SUNY Upstate Medical University Cancer Research Institute, Syracuse, NY
- 1/09–5/14 *Assistant Professor (by courtesy)*, Dept. of Biology, Syracuse University, Syracuse, NY
- 4/08–5/14 *Assistant Professor*, Dept. of Biomedical and Chemical Engineering and Syracuse Biomaterials Institute, Syracuse University, Syracuse, NY
- 9/06–3/08 *Arthritis Foundation Postdoctoral Fellow*, Depts. of Biology and Orthopaedics, Case Western Reserve University, Cleveland, OH
- 8/99–4/04 *Hertz Foundation Fellow and Burt and Deedee McMurtry Stanford Graduate Fellow*, Dept. of Mechanical Eng., Stanford University, Palo Alto, CA

RELATED PUBLICATIONS

1. Baker RM, Brasch ME, Manning ML, and **Henderson JH**. Automated, contour-based tracking and analysis of cell behaviour over long timescales in environments of varying complexity and cell density. *J R Soc Interface*, 11(97), 20140386, 2014. <http://dx.doi.org/10.1098/rsif.2014.0386>
2. Wormer DB, Davis KA, **Henderson JH**, Turner CE. The Focal Adhesion-Localized CdGAP Regulates Matrix Rigidity Sensing and Durotaxis. *PLoS ONE*, 9(3): e91815, 2014. <http://dx.doi.org/10.1371/journal.pone.0091815>
3. Tseng L, Mather PT, and **Henderson JH**. Shape-memory actuated change in scaffold fiber alignment directs stem cell morphology. *Acta Biomaterialia*, 9:8790-8801, 2013. <http://dx.doi.org/10.1016/j.actbio.2013.06.043>
4. Baker RM, Yang P, **Henderson JH**, and Mather PT. *In vitro* wrinkle formation via shape memory dynamically aligns adherent cells. *Soft Matter*, 9:4705–4714, 2013. <http://dx.doi.org/10.1039/c3sm00024a>
5. Davis KA, Burke KA, Mather PT, and **Henderson JH**. Dynamic cell behavior on shape memory polymer substrates. *Biomaterials*, 32:2285-2293, 2011. <http://dx.doi.org/10.1016/j.Biomaterials.2010.12.006>

OTHER SIGNIFICANT PUBLICATIONS

1. Baker RM, Tseng L., Iannolo MT, Oest ME, and **Henderson JH**. Self-deploying shape memory polymer scaffolds for grafting and stabilizing complex bone defects: a mouse femoral segmental defect study. *Biomaterials*, *in press*.
2. Baker RM, **Henderson JH**, and Mather PT. Shape memory poly(ϵ -caprolactone)-co-poly(ethylene glycol) foams with body temperature triggering and two-way actuation. *Journal of Materials Chemistry B*, 1:4916-4920, 2013. <http://dx.doi.org/10.1039/C3TB20810A>
3. Xu X, Davis KA, Yang P, Gu X, **Henderson JH**, and Mather PT. Shape memory RGD-containing hydrogels: synthesis, characterization, and application in cell culture. *Macromolecular Symposia*, 309-310: 162-172, 2011. <http://dx.doi.org/10.1002/masy.201100060>

4. Davis KA, Luo X, Mather PT, and **Henderson JH**. Shape memory polymers for active cell culture. *J Vis Exp* (53):e2903, 2011. <http://www.jove.com/details.php?ID=2903>
5. **Henderson JH** and Carter DR. Mechanical induction in limb morphogenesis: the role of growth-generated strains and pressures. *Bone*, 31, 645–653, 2002. [http://dx.doi.org/10.1016/S8756-3282\(02\)00911-0](http://dx.doi.org/10.1016/S8756-3282(02)00911-0)

SYNERGISTIC ACTIVITIES

1. **Mentor to Women and Minorities Underrepresented in Engineering (last 5 years): Undergraduate Researchers:** **Joyrie Dickerson** and **Donmanique Hardy**, NSF SMAART participants from Hampton University, 2015. **Miracle Rogers**, McNair Scholars Program; Gates Millennium Scholars Program, 2014–pres. **Stephen C. Benn**, NSF Louis Stokes Alliance for Minority Participation (LSAMP) 2015 Undergraduate Research Assistantship, 2014–pres. **Alyssa Seunarine** and **Brandyn White**, NSF SMAART participants from Hampton U., 2014. **Brenda E. Argueta**, 2013–pres. **Alexis N. Peña**, 2012–pres. **Sierra C. Houston**, Dean’s Leadership Grant Awardee, 2012–2013. **Kristina M. Arauz**, Dean’s Leadership Grant Awardee, 2012–2013. **Falin Jones**, **Joalene Mason**, **Simone Summers**, and **Marisa Tukpah**, NSF SMAART participants from Hampton U., 2012. **Kathryn D. Moore**, Syracuse Biomaterials Institute REU, 2012. **Katrina A. Keegan**, 2011–2013. **Anita Patrick**, SBI REU, 2011. **Christine Cespedes**, 2010–2012. **R. Casey Edwards**, 2010–2011. **Cassandra G. Gorman**, SBI REU, 2009–2010. **PhD Students:** **Michelle E. Pede**, 2014–pres. **Shelby L. Buffington**, 2012–pres. **Ariel Ash-Shakoor**, 2012–pres. **Megan E. Brasch**, 2011–pres. SBI REU, 2010. **Ling-Fang Tseng**, 2009–pres. **Jing Wang**, 2009–pres. **MS Students:** **Ye He**, 2013–2015. **Chi-Yu Sun**, 2008–2012. **Postdoctoral Scholars:** **Shelley L. Kummer**, 2008–2010. **High School Researchers:** **Elena Marchetti-Bowick**, 2011–2013.
2. **Educational Initiatives:** Director, NSF REU Site: Interactive Biomaterials, 2015–pres. NSF Soft Interfaces IGERT Ethics & Science Policy Faculty Coordinator, 2011–pres; College of Eng. & Computer Science Faculty Excellence Award “Launching a Career of Collaborative PK-20 Stem Education,” 2010.
3. **Conference and Workshop Organization:** Conference Chair, 39th Annual Northeast Bioengineering Conference, Syracuse University, 2013; Organizer, Workshop on “Smart Material Advances and Advanced Research Training (SMAART),” Syracuse University, 2012, 2014, and 2015; Co-organizer, two ICAM Workshops “Active and Smart Matter: A New Frontier for Science and Engineering,” 2016, and “Soft Active Materials: From Granular Rods to Flocks, Cells and Tissues,” 2009, both Syracuse U.
4. **Editorial Positions:** Editorial Advisory Board Member, *International Journal of Polymeric Materials*, 2012–pres.; Special Issue Editor, *International Journal of Molecular Sciences*, Special issue on “Programmable Materials for Mechanobiology,” 2011–2012.
5. **Peer Reviewer:** Biomaterials, Nature Nanotechnology, and 25 others

COLLABORATORS AND CO-EDITORS

1. Collaborators and Co-Editors (8)
Syracuse University: **Manning ML**; **Mather PT**; **Hosein ID**. **SUNY Upstate Medical University:** **An J**; **Damron TA**; **Oest ME**; **Turner CE**. **Hampton University:** **Samuel RE**.
2. Graduate and Postdoctoral Advisors
Caplan AI, Case Western Reserve U. (CWRU); **Carter DR**, Stanford U.; **Dennis JE**, CWRU
3. Thesis Advisor and Postgraduate-Scholar Sponsor
2 postdoctoral scholars sponsored and 13 graduate (thesis) students advised. **Postdoctoral:** **Kummer**, Shelley L., now Syracuse University; **Amos**, Jennifer R. Amos, now University of Illinois at Urbana-Champaign. **PhD:** **Pede**, Michelle, 2014–pres.; **Bishop**, Kyle, 2014–pres.; **Sawyer**, Stephen W., 2013–pres.; **Passucci**, Giuseppe, 2013–pres.; **Buffington**, Shelby L., 2013–pres.; **Ash-Shakoor**, Ariel, 2012–pres.; **Donelson**, Fred J., 2012–pres.; **Brasch**, Megan E., 2011–pres.; **Baker**, Richard M., 2009–2015.; **Wang**, Jing, 2009–pres.; **Tseng**, Ling-Fang, 2009–2015.; **Davis**, Kevin A., 2008–pres. **MS:** **He**, Ye, 2013–2015.