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Assistant Professor, Department of Biomedical Engineering, Columbia University
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EDUCATION

2005-2010	Ph.D. University of Pennsylvania Mechanical Engineering & Applied Mechanics, School of Engineering & Applied Sciences
2003-2005	M.S. Washington University in St. Louis Biomedical Engineering, School of Engineering & Applied Sciences
1999-2003	B.S. University of Maryland at College Park Biological Engineering, A. James Clark School of Engineering

PROFESSIONAL EXPERIENCE

2018 – Present	Assistant Professor (Primary), Department of Biomedical Engineering, Columbia University, New York, NY
2018 – Present	Assistant Professor (Affiliate), Department of Genetics and Development, Columbia University Medical Center, New York, NY
2011 – 2017	Postdoctoral Fellow, Department of Genetics, Harvard Medical School, Boston, MA

AWARDS AND HONORS

2019	SEAS Research Equipment Assistant Program Award, Columbia University
2016	Travel award, Society for Developmental Biology 75 th Annual Meeting
2014	Best short talk, Gordon Research Conference: FGFs in Development and Disease
2012 – 2015	Awardee, AAAS/Science Program for Excellence in Science
2009	2 nd Place poster, Biomechanics, Penn Center for Musculoskeletal Disorders Symposium
2009	Finalist, PhD Student Paper Competition in Cell & Tissue Mechanics, Imaging, ASME Summer Bioengineering Conference
2008	ISSLS Prize in Biomechanics, International Society for the Study of Lumbar Spine
2007	1 st Place poster, Biomechanics, Penn Center for Musculoskeletal Disorders Symposium

FUNDING

2017 – 2018	Avery's Angels Gastroschisis Foundation Research Funding support: The role of BMP signaling in intestinal retraction. Role: PI.
2011 – 2014	Ruth L. Kirschstein National Research Service Award, NICHD (HD069074): Mechanical and molecular factors underlying morphogenesis of the intestinal villi. Role: PI.

PEER REVIEW ACTIVITIES

ACS Biomaterials Science & Engineering, Biomaterials, Biomechanics in Modeling and Mechanobiology, Cell Health and Cytoskeleton, Colloids and Surfaces B: Biointerfaces, European Cells and Materials, Engineering Science & Technology: an Int'l Journal, IEEE Life Sciences Letters, Journal of the Mechanical Behavior of Biomedical Materials, Journal of Biomechanical Engineering, Journal of Cellular and Molecular Medicine, Journal of Orthopaedic Research, Journal of the Royal Society Interface, Materials Today Magazine, Philos Trans Royal Soc B, PLoS One, Proc Natl Acad Sci, Stem Cell Research & Therapy, Tissue Engineering, American Society for Mechanical Engineering (ASME) Summer Bioengineering Conference, Summer Biomechanics Bioengineering and Biotransport Conference (SB3C), Wellcome Trust

MEMBERSHIPS AND PROFESSIONAL ACTIVITIES

2016 – Present	Member , Summer Biomechanics, Bioengineering, and Biotransport, Conference Foundation (SB3C)
2016 – Present	Member , International Society of Differentiation
2016 – Present	Member , Biomedical Engineering Society
2013 – Present	Member , Society for Developmental Biology
2012 – Present	Subtheme Chair/Organizer , Organs Morphogenesis and Development, Bioengineering Division, American Society of Mechanical Engineers/SB3C
2012 – Present	Judge , PhD Student Paper/Poster Competition, ASME/SB3C
2011 – 2014	Member , American Society of Mechanical Engineers, Bioengineering Division

TEACHING EXPERIENCE

<i>Spring 2019</i>	Fluid Biomechanics Module, BMEN3020: Introduction to Biomedical Engineering II Columbia University, New York, NY
<i>Fall 2018</i>	Solid Biomechanics Module, BMEN3010: Introduction to Biomedical Engineering I Columbia University, New York, NY
<i>Fall 2016</i>	Guest lecturer, “Sensory Organs and Endocrine Biology”, BIO203: Anatomy/Physiology Bunker Hill Community College, Boston, MA
Spring 2008	Teaching Assistant, MEAM333: Heat and Mass Transfer University of Pennsylvania, Philadelphia, PA
Fall 2007	Teaching Assistant, MEAM 302: Fluid Mechanics University of Pennsylvania, Philadelphia, PA
Spring 2007	Teaching Assistant, MEAM 333: Heat and Mass Transfer University of Pennsylvania, Philadelphia, PA
Spring 2005	Teaching Assistant, BME 240: Biomechanics Washington University in St. Louis, St. Louis, MO
Spring 2003	Teaching Assistant, ENES 100: Intro to Engineering Design University of Maryland, College Park, MD
Fall 2002	Tutor, Academic Support and Career Development Unit University of Maryland, College Park, MD
Fall 2001	Teaching Assistant, ENES 100: Intro to Engineering Design University of Maryland, College Park, MD

INVITED LECTURES

1. “Biomechanics of Development: how molecular cues specify mechanical forces to shape the embryo.” Department of Biomedical Engineering, Rensselaer Polytechnic Institute, Troy, NY, Nov 29 2018.
2. “Molecular control of forces driving morphogenesis of the vertebrate gut.” Department of Biological Science, Columbia University, New York, NY, Nov 5, 2018.
3. “Molecular control of physical forces driving morphogenesis of the vertebrate gut.” Department of Biology, City College of New York, New York, NY, Oct 15, 2018.
4. “Morphogenesis and Developmental Biomechanics.” Department of Biomedical Engineering, Columbia University, New York, NY, Sept 14, 2018.
5. “Molecular control of forces driving morphogenesis of the vertebrate gut.” Department of Genetics & Development, Columbia University Medical Center, New York, NY, May 29, 2018.

6. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Orthopaedic Research, Icahn School of Medicine, Mount Sinai, New York, NY, March 10, 2017.
7. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biomedical Engineering, Columbia University, New York, NY, March 09, 2017.
8. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, Feb 16, 2017.
9. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biomedical Engineering, Boston University, Boston, MA, Jan 09, 2017.
10. "Molecular control of forces during morphogenesis of the vertebrate gut." Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA, Feb 02, 2017.
11. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biology, Tufts University, Medford, MA, Jan 27, 2017.
12. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biomedical Engineering, Washington University in St. Louis, St. Louis, MO, Jan 19, 2017.
13. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Molecular Biology, Princeton University, Princeton, NJ, Jan 11, 2017.
14. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biological Sciences, University of Delaware, Newark, DE, Nov 30, 2016.
15. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biological Sciences, Union College, Schenectady, NY, Oct 27, 2016.
16. "BMP signaling modulates differential growth to drive buckling morphogenesis of the small intestine." Biophysics in Development Discussion Group. Cambridge MA, June 21, 2016.
17. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Mahadevan Group Meeting, School of Engineering and Applied Sciences, Harvard University, Cambridge MA, April 22, 2016.
18. "Electroporation-based gene transfer to study morphogenesis in the chick embryo" Biocompare Webinar Series: Effective Means to Transfect and Immunoprecipitate GFP-Fusion Constructs, Sept. 29, 2014.
19. "Molecular control of physical forces during morphogenesis of the vertebrate gut." University of Massachusetts, Amherst, MA Aug 13, 2014.
20. "Morphogenesis of the vertebrate gut tube." Mechanical Forces in Development Seminar Series, Boston MA Jan 26, 2012.
21. "Nanofibrous biologic laminates replicate the form and function of the annulus fibrosus." Department of Genetics, Harvard Medical School, Boston MA, Feb. 11, 2010.
22. "ISSLS Prize in Biomechanics: Integrating theoretical and experimental methods for functional tissue engineering of the annulus fibrosus." 35th Annual Meeting of the International Society for the Study of Lumbar Spine, Geneva, Switzerland, May 28-31, 2008.

PATENTS

Mauck RL, Elliott DM, **Nerurkar NL**. Disc-like angle-ply structures for intervertebral disc tissue engineering and replacement (pending, US12911166).

PUBLICATIONS (h-index 21, times cited 1,616 as of 03/01/19)

1. **Nerurkar NL**[#], Lee CH, Mahadevan L, Tabin CJ[#]. Molecular control of macroscopic forces drives formation of the vertebrate hindgut. *Nature*, 565(7740), 2019. [#]Corresponding authors.
2. Huycke TR, Miller BM, **Nerurkar NL**, Mahadevan L, Tabin CJ. Genetic and mechanical regulation of intestinal smooth muscle development *Cell* (in press).

3. **Nerurkar NL**, Mahadevan L, Tabin CJ. BMP signaling controls buckling forces to modulate looping morphogenesis of the gut. *Proceedings of the National Academy of Science*, 114(9), 2017.
4. Heo SJ, Driscoll TP, Thorpe SD, **Nerurkar NL**, Baker BM, Yang MT, Chen CS, Lee DA, Mauck RL. Differentiation alters stem cell nuclear architecture, mechanics, and mechano-sensitivity. *eLife*, 5:e18207, 2016.
5. Shah RS⁺, **Nerurkar NL**^{##}, Wang C, Galloway JL[#]. Tensile properties of craniofacial tendons in the mature and aged zebrafish. *Journal of Orthopaedic Research*, 33(6), 2015. ⁺authors contributed equally, [#]co-corresponding authors.
6. Shyer AE, Tallinen T, **Nerurkar NL**, Wei Z, Gil E, Kaplan DL, Tabin CJ, Mahadevan L. Villification: How the gut gets its villi. *Science*, 342(6155), 2013.
7. Han WJ, **Nerurkar NL**, Jacobs NT, Smith LJ, Mauck RL, Elliott DM. Multi-scale structural and tensile mechanical response of annulus fibrosus to osmotic loading. *Annals of Biomedical Eng*, 40(7), 2012.
8. Smith LJ, Chiaro JA, **Nerurkar NL**, Cortes DH, Horava S, Hebel N, Mauck RL, Dodge GR, Elliott DM. Nucleus pulposus cells synthesize a functional extracellular matrix and respond to inflammatory cytokine challenge following long term agarose culture. *European Cells & Materials*, 20(22), 2011.
9. Heo SC, **Nerurkar NL**, Baker BM, Mauck RL. Microstructure dictates stretch-induced cell and nucleus reorganization on aligned nanofibrous scaffolds. *Annals of Biomedical Engineering*, 39(11), 2011. Cover article.
10. Driscoll TP, **Nerurkar NL**, Jacobs NT, Elliott DM, Mauck RL. Fiber angle and aspect ratio influence the shear mechanics of oriented electrospun nanofibrous scaffolds. *Journal of the Mechanical Behavior of Biomedical Materials* 4(8), 2011.
11. **Nerurkar NL**, Mauck RL, Elliott DM. Modeling inter-lamellar interactions in angle-ply biologic laminates for annulus fibrosus tissue engineering. *Biomechanics and Modeling in Mechanobiology*, 10(6), 2011.
12. Smith LJ, **Nerurkar NL**, Harfe BD, Elliott DM. Degeneration and regeneration of the intervertebral disc: lessons from development. *Disease Models and Mechanisms*, 4(1), 2011.
13. **Nerurkar NL**, Mauck RL, Elliott DM. Homologous structure-function relationships between native fibrocartilage and tissue engineered from MSC-seeded nanofibrous scaffolds. *Biomaterials*, 32(2), 2011.
14. **Nerurkar NL**, Sen S, Baker BM, Elliott DM, Mauck RL. Dynamic culture enhances stem cell infiltration and modulates extracellular matrix production on aligned electrospun nanofibrous scaffolds. *Acta Biomaterialia* 7(2), 2011.
15. Nathan AS, Baker BM, **Nerurkar NL**, Mauck RL. Mechano-topographic modulation of stem cell nuclear shape on nanofibrous scaffolds. *Acta Biomaterialia*, 7(1), 2011.
16. **Nerurkar NL**, Sen S, Huang AH, Elliott DM, Mauck RL. Engineered disc-like angle-ply structures for intervertebral disc replacement. *Spine*, 35(8), 2010. Invited for Special Issue.
17. **Nerurkar NL**, Elliott DM, Mauck RL. Mechanical design criteria for intervertebral disc tissue engineering. *Journal of Biomechanics*, 43(6), 2010.
18. **Nerurkar NL**, Baker BM, Sen S, Wible EE, Elliott DM, Mauck RL. Nanofibrous biologic laminates replicate the form and function of the annulus fibrosus. *Nature Materials*, 8(12), 2009. Cover article; Highlighted in News & Views.
19. Baker BM, **Nerurkar NL**, Burdick JA, Elliott DM, Mauck RL. Fabrication and modeling of multi-polymer nanofibrous scaffolds. *Journal of Biomechanical Engineering*, 131 (10), 2009. Cover article.
20. Mauck RL, Baker BM, **Nerurkar NL**, Burdick JA, Li WJ, Tuan RS, Elliott DM. Engineering on the straight and narrow: the mechanics of nanofibrous assemblies for fiber-reinforced tissue regeneration. *Tissue Engineering B: Reviews*, 15(2), 2009.

21. Ramasubramanian A, **Nerurkar NL**, Achtien KH, Filas BA, Voronov DA, Taber LA. On modeling morphogenesis of the looping heart following mechanical perturbation. *Journal of Biomechanical Engineering*, 130 (6), 2008.
22. **Nerurkar NL**, Mauck RL, Elliott DM. ISSLS prize winner: Integrating theoretical and experimental methods for functional tissue engineering of the annulus fibrosus. *Spine*, 33 (25), 2008.
23. **Nerurkar NL**, Elliott DM, Mauck RL. Mechanics of oriented electrospun nanofibrous scaffolds for annulus fibrosus tissue engineering. *Journal of Orthopaedic Research*, 25(8), 2007. Cover article; most referenced JOR paper in 2008.
24. **Nerurkar NL**, Ramasubramanian A, Taber LA. Morphogenetic adaptation of the looping embryonic heart to altered mechanical loads. *Developmental Dynamics*, 235(7), 2006.
25. Wagenseil JE, **Nerurkar NL**, Knutsen RH, Okamoto RJ, Li DY, Mecham RP. Effects of elastin haploinsufficiency on the mechanical behavior of mouse arteries. *Am J Phys Heart Circ Phys*, 289(3), 2005.
26. Anderson GP, **Nerurkar NL**. Improved fluoroimmunoassays using the dye Alexa Fluor 647 with the RAPTOR, a fiber optic biosensor. *Journal of Immunological Methods*, 271 (1-2), 2002.

CONFERENCE ABSTRACTS

1. Mathur A, **Nerurkar NL**. Transfection of the chick neural tube to study the mechanics of midbrain-hindbrain boundary morphogenesis. 2019 Scientista Symposium: Science without borders, Boston, MA, March 29 – 31, 2019.
2. **Nerurkar NL**. BMP signaling modulates differential growth to control buckling morphogenesis of the small intestine. Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 17 – 20, 2018.
3. Galloway JL, Niu XB, Shah RR, **Nerurkar NL**, Noedi M. Tendon development plasticity and functional regeneration. Annual Meeting of the American Association of Anatomists, San Diego, CA, April 21 – 25, 2018.
4. **Nerurkar NL**, Mahadevan L, Tabin CJ. BMP signaling regulates differential growth to drive buckling during looping morphogenesis of the small intestine. Sumer Biomechanics, Bioengineering, and Biotransport Conference, Tuscon, AZ, June 21 – 24, 2017 (podium).
5. **Nerurkar NL**, Mahadevan L, Tabin CJ. FGF-Mediated Tensional Gradients Drive Morphogenesis of the Avian Hindgut. Sumer Biomechanics, Bioengineering, and Biotransport Conference, Tuscon, AZ, June 21 – 24, 2017 (podium).
6. **Nerurkar NL**, Mahadevan L, Tabin CJ. BMP signaling modulates differential growth to control mechanical buckling morphogenesis of the small intestine. Workshop: The Biological Challenges in Morphogenesis. Mathematical Biology Institute, Ohio State University, Columbus, Ohio, Feb 20 – 24, 2017.
7. Shah RS, Noedi M, **Nerurkar NL**, Niu X, Galloway JL. Establishment of a Tendon And Tendon-bone Attachment Site Regeneration Model In The Zebrafish. Orthopaedic Research Society 2017 Meeting , San Diego, CA, March 19 – 22, 2017.
8. **Nerurkar NL**, Mahadevan L, Tabin CJ. FGF8-mediated tensional gradients drive collective cell movements during early endoderm morphogenesis. Biomedical Engineering Society 2016 Annual Meeting, Minneapolis, MN, October 5 – 8, 2016 (podium).
9. **Nerurkar NL**, Mahadevan L, Tabin CJ. FGF-mediated tensional gradients drive collective cell movements to form the avian hindgut. 75th Meeting of the Society for Developmental Biology Satellite Symposium Collective Cell Migration: Biomechanics to Organogenesis, Boston, MA, Aug 4, 2016 (podium).
10. **Nerurkar NL**, Tabin CJ. Molecular control of differential growth during looping of the embryonic small intestine. Sumer Biomechanics, Bioengineering, and Biotransport Conference, National Harbor, MD, June 29 – July 2, 2016 (podium).

11. **Nerurkar NL**, Tabin CJ. BMP signaling modulates physical forces to control intestinal coiling. 74th Meeting of the Society for Developmental Biology, Snowbird, UT, July 9 -13, 2015 (podium).
12. Huycke T, **Nerurkar NL**, Tabin CJ. Generating morphological variation in the gut. 74th Meeting of the Society for Developmental Biology, Snowbird, UT, July 9 -13, 2015.
13. Schwartz M, Young J, **Nerurkar NL**, Tabin CJ. Determining skeletal element number in the avian forelimb zeugopod. 74th Meeting of the Society for Developmental Biology, Snowbird, UT, July 9 -13, 2015.
14. **Nerurkar NL**, Tabin CJ. Fgf8 establishes a contractile gradient to drive directed cell movements in the developing avian gut. Summer Biomechanics, Bioengineering, and Biotransport Conference, Snowbird, UT, Jun 17 – 20, 2015 (podium).
15. **Nerurkar NL**, Tabin CJ. FGF-mediated tension gradients drive antero-posterior endoderm movements to form the avian hindgut. Keystone Symposium: Endoderm in Development and disease, Keystone, CO, Feb 8 – 13, 2015 (podium).
16. **Nerurkar NL**, Tabin CJ. FGF signaling establishes a contractile gradient to drive polarized endoderm movements underlying morphogenesis of the avian hindgut. Society for Developmental Biology 73rd Annual Meeting, Seattle, WA, July 17 – 21, 2014 (podium).
17. **Nerurkar NL**, Tabin CJ. FGF-mediated contractile gradients drive polarized cell movements to form the avian hindgut. World Congress of Biomechanics, Boston, MA, July 6 – 11, 2014 (podium).
18. **Nerurkar NL**, Tabin CJ. FGF-mediated mechanical force gradients drive antero-posterior endoderm cell flows to form the avian hindgut. Gordon Research Conference and Seminar: Fibroblast Growth Factor in Development and Disease, Ventura, CA, March 1 – 7, 2014 (podium).
19. **Nerurkar NL**, Tabin CJ. Polarized collective cell movements underlie antero-posterior folding during formation of the avian hindgut. ASME Summer Bioengineering Conference, Sun river, OR, June 26 – 29, 2013 (podium).
20. **Nerurkar NL**, Tabin CJ. Polarized collective cell movements drive antero-posterior folding to form the avian hindgut. 17th International Congress of Developmental Biology, Cancun, Mexico, June 16 – 20, 2013.
21. **Nerurkar NL**, Tabin CJ. Cell velocity gradients underlie early morphogenesis of the avian gut tube. ASME Summer Bioengineering Conference, Fajardo, Puerto Rico, June 19 – 23, 2012 (podium).
22. Han WJ, **Nerurkar NL**, Smith LJ, Jacobs NT, Mauck RL, Elliott DM. Multiscale structural and mechanical response of the annulus fibrosus to osmotic loading. ASME Summer Bioengineering Conference, Fajardo, Puerto Rico, June 19 – 23, 2012.
23. Heo SC, Driscoll TP, **Nerurkar NL**, Mauck RL. Dynamic tensile stretch promotes lamin a/c reorganization and chromatin condensation in adult stem cells. 58th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, January 4 – 7, 2012.
24. Han WJ, **Nerurkar NL**, Jacobs NT, Smith LJ, Mauck RL, Elliott DM. Differential structure-function mechanisms of the inner and outer annulus fibrosus in tension. International Society for the Study of Lumbar Spine Annual Meeting, Gothenburg, Sweden, June 14 – 18, 2011.
25. Heo SC, **Nerurkar NL**, Driscoll TP, Mauck RL. Dynamic tensile loading alters nuclear mechanics and mechanoreception. Proceedings of the ASME 2010 Summer Bioengineering Conference, Farmington, PA, June 22 – 25, 2011.
26. Driscoll TP, **Nerurkar NL**, Jacobs NT, Elliott DM, Mauck RL. Fiber angle and aspect ratio influence the shear mechanics of electrospun nanofibrous scaffolds. Proceedings of the ASME 2010 Summer Bioengineering Conference, Farmington, PA, June 22 – 25, 2011.

27. Han WJ, Jacobs NT, **Nerurkar NL**, Smith LJ, Mauck RL, Elliott DM. Differential tensile mechanical behavior of the inner and outer annulus fibrosus following treatment with chondroitinase ABC and buffer solutions. 6th Annual Philadelphia Spine Symposium, Philadelphia, PA, December 14, 2010.
28. Driscoll TP, **Nerurkar NL**, Jacobs NT, Mauck RL, Elliott DM. Shear mechanics of electrospun scaffolds for annulus fibrosus tissue engineering. 6th Annual Philadelphia Spine Symposium, Philadelphia, PA, December 14, 2010.
29. Kluge JA, **Nerurkar NL**, Martin JT, Amaniera FA, Pampati RA, Elliott DM, Mauck RL. Functional enhancement of disc-like angle-ply structures via dynamic culture. 6th Annual Philadelphia Spine Symposium, Philadelphia, PA, December 14, 2010.
30. Heo SC, **Nerurkar NL**, Mauck RL. Differentiation and deformation modulate nuclear mechanics during mesenchymal stem cell fibrochondrogenesis. The Society for Physical Regulation in Biology and Medicine 29th Scientific Conference, Miami, FL, January 4 – 8, 2011.
31. Han WJ, **Nerurkar NL**, Jacobs NT, Smith LJ, Mauck RL, Elliott DM. Differential structure-function mechanisms of the inner and outer annulus fibrosus in tension. International Society for the Study of Lumbar Spine Annual Meeting, Gothenburg, Sweden, June 14 – 18, 2011.
32. Driscoll TP, **Nerurkar NL**, Jacobs NT, Mauck RL, Elliott DM. Shear mechanics of electrospun scaffold for annulus fibrosus tissue engineering. 57th Annual Meeting of the Orthopaedic Research Society, Long Beach, CA, January 13 – 16, 2011.
33. Heo SC, **Nerurkar NL**, Baker BM, Mauck RL. Microstructure dictates stretch-induced cell and nucleus reorganization on aligned nanofibrous scaffolds. 57th Annual Meeting of the Orthopaedic Research Society, Long Beach, CA, January 13 – 16, 2011.
34. Heo SC, **Nerurkar NL**, Baker BM, Mauck RL. Fibrochondrogenesis attenuates stretch-induced nuclear deformation on aligned nanofibrous electrospun scaffolds. 57th Annual Meeting of the Orthopaedic Research Society, Long Beach, CA, January 13 – 16, 2011.
35. Smith LJ, **Nerurkar NL**, Cortes DH, Horava SD, Dodge GR, Hebel NM, Mauck RL, Elliott DM. Functional matrix degradation and inhibition in a cytokine-mediated in-vitro model of nucleus pulposus degeneration. 57th Annual Meeting of the Orthopaedic Research Society, Long Beach, CA, January 13 – 16, 2011.
36. Kluge JA, Martin JT, **Nerurkar NL**, Amaniera FA, Pampati RA, Elliott DM, Mauck RL. Functional enhancement of disc-like angle-ply structures via dynamic culture. 57th Annual Meeting of the Orthopaedic Research Society, Long Beach, CA, January 13 – 16, 2011.
37. Farrell MJ, Comeau ES, **Nerurkar NL**, Mauck RL. Depth-dependent mechanical properties of MSC-laden engineered cartilage constructs. 57th Annual Meeting of the Orthopaedic Research Society, Long Beach, CA, January 13 – 16, 2011.
38. Han WJ, Jacobs NT, **Nerurkar NL**, Smith LJ, Mauck RL, Elliott DM. Differential tensile mechanical behavior of the inner and outer annulus fibrosus following treatment with chondroitinase ABC and buffer solutions. 57th Annual Meeting of the Orthopaedic Research Society, Long Beach, CA, January 13 – 16, 2011.
39. Elliott DM, **Nerurkar NL**, O'Connell GD, Vresilovic EJ, Mauck RL. Tissue engineering from the ground up: building an annulus fibrosus that has mechanical function at each scale. The 25th Annual Research Meeting of the Japanese Orthopaedic Association, Kyoto, Japan, October 14 – 15, 2010.
40. Elliott DM, **Nerurkar NL**, Huang AH, Kluge JA, Smith LJ, Martin JT, Hebel N, Mauck RL. Disc Tissue Engineering – Can We Make it Stick? 6th World Congress on Biomechanics, Singapore, August 1 – 6, 2010.
41. **Nerurkar NL**, Mauck RL, Elliott DM. Modeling inter-lamellar interactions in engineered nanofibrous biologic laminates for annulus fibrosus tissue engineering. Proceedings of the ASME 2010 Summer Bioengineering Conference, Naples, FL, June 16 – 19, 2010 (podium).

42. **Nerurkar NL**, Sen S, Baker BM, Zachry TL, Elliott DM, Mauck RL. Dynamic culture enhances stem cell ingress and extracellular matrix deposition on electrospun nanofibrous scaffolds. 56th Annual Meeting of the Orthopaedic Research Society, New Orleans, March 6 – 9, 2010.
43. **Nerurkar NL**, Sen S, Huang AH, Elliott DM, Mauck RL. Functional maturation of composites that mimic the hierarchical organization of the intervertebral disc. 56th Annual Meeting of the Orthopaedic Research Society, New Orleans, March 6 – 9, 2010 (podium, Spotlight Session: Tissue Engineering).
44. **Nerurkar NL**, Sen S, Mauck RL, Elliott DM. Selective removal of extracellular matrix components reveals homologous structure-function relationships between engineered and native fibrocartilage. 56th Annual Meeting of the Orthopaedic Research Society, New Orleans, March 6 – 9, 2010 (podium).
45. Nathan AS, Baker BM, **Nerurkar NL**, Mauck RL. Time-dependent and anisotropic nuclear deformations on aligned nanofibrous scaffolds. 56th Annual Meeting of the Orthopaedic Research Society, New Orleans, March 6 – 9, 2010.
46. **Nerurkar NL**, Mauck RL, Elliott DM. Alternating Fiber Orientation Enhances the Functional Growth of Nanofibrous Laminates for Annulus Fibrosus Tissue Engineering. BMES 2009 Fall Scientific Meeting, Pittsburgh PA, October 7-10, 2009.
47. **Nerurkar NL**, Elliott DM, Mauck RL. Functional maturation of engineered composites that mimic the hierarchical organization of the intervertebral disc. 5th Annual Philadelphia Spine Symposium, Philadelphia, PA, December 9, 2009.
48. Mauck RL, Baker BM, Ionescu LC, **Nerurkar NL**, Burdick JA. Multi-functional and dynamic fibrous scaffolds for tissue engineering and controlled release. Materials Research Society Conference, Boston, MA, November 30 –December 4, 2009.
49. **Nerurkar NL**, Sen S, Wible EE, Stambough JB, Elliott DM, Mauck RL. Mesenchymal Stem Cell Seeded Nanofibrous Laminates Mimic the Multi-scale Form and Function of the Annulus Fibrosus. Proceedings of the ASME 2009 Summer Bioengineering Conference, Lake Tahoe, CA, June 17 – 21, 2009 (podium).
50. **Nerurkar NL**, Sen S, Mauck RL, Elliott DM. Bilamellar Engineered Constructs Mimic Form and Function of the Native Annulus Fibrosus. Annual Meeting of the International Society for the Study of Lumbar Spine, Miami, FL, May 4-9, 2009 (podium).
51. **Nerurkar NL**, Sen S, Wible EE, Stambough JB, Elliott DM, Mauck RL. MSC-Seeded Nanofibrous Laminates Mimic Multi-Scale Form and Function of the Annulus Fibrosus. 55th Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, 0209; February 22-25, 2009 (podium).
52. Baker BM, **Nerurkar NL**, Burdick JA, Elliott DM, Mauck RL. Instilling Time-Dependent Behavior in Electrospun, Multi-Polymer Nanofibrous Composites. 55th Annual Meeting of the Orthopaedic Research Society, Las Vegas, NV, 0473; February 22-25, 2009.
53. Baker BM, **Nerurkar NL**, Burdick JA, Mauck RL. The Temporal Behavior of Electrospun, Multi-Polymer Nanofibrous Composites. Proceedings of TERMIS-NA 2008 Conference, San Diego, CA, December 7-11, 2008.
54. **Nerurkar NL**, Sen S, Wible EE, Stambough JB, Elliott DM, Mauck RL. "MSC-Seeded Nanofibrous Laminates Mimic Multi-Scale Form and Function of the Annulus Fibrosus." Philadelphia Spine Research Symposium, Philadelphia, PA, November 13, 2008.
55. Baker BM, **Nerurkar NL**, Burdick JA, Elliott DM, Mauck RL. "Fabrication and Modeling of an Electrospun Tri-Polymer Composite for the Engineering of Fibrous Tissues," Proceedings of ASME 2008 Summer Bioengineering Conference, Marco Island, FL, June 25-29, 2008.
56. **Nerurkar NL**, Nguyen AM, Mauck RL, Elliott DM. Functional evolution of engineered annulus fibrosus using constitutive modeling. 54th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, 0292; March 2-5, 2008 (podium).

57. **Nerurkar NL**, Orlansky AS, Sen S, Elliott DM, Mauck RL. Multi-scale tissue engineering of the intervertebral disc. 54th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, 0340; March 2-5, 2008 (podium).
58. Lake SP, **Nerurkar NL**, Mauck RL, Kaldowec JA, Elliott DM, Soslowsky LJ. Development of a Nonlinear Anisotropic Fiber Dispersion Model to Quantify and Predict Mechanics of Normal and Injured Tendon. 54th Annual Meeting of the Orthopaedic Research Society, San Francisco, CA, p. 0824; March 2-5, 2008.
59. **Nerurkar NL**, Elliott DM, Mauck RL. Architecture of nanofibrous scaffolds influences fibrocartilaginous gene expression of annulus fibrosus and mesenchymal stem cells. 6th Combined meeting of the Orthopaedic Research Society, Honolulu, Hawaii, p. 0388; October 20-24, 2007.
60. **Nerurkar NL**, Nguyen AM, Tsing P, Mauck RL, Elliott DM. A hyperelastic fiber-reinforced continuum model to assay functional evolution of tissue engineered annulus fibrosus. 6th Combined meeting of the Orthopaedic Research Society, Honolulu, Hawaii, p. 0389; October 20-24, 2007.
61. Taber LA, **Nerurkar NL**, Ramasubramanian A. Finite element modeling of the looping embryonic heart including mechanical feedback. 9th US National Congress on Computational Mechanics, San Francisco, CA, July 22-26, 2007.
62. Ramasubramanian A, **Nerurkar NL**, Taber LA. Role of mechanical feedback in restoration of normal cardiac c-looping following perturbed loading. 2007 Summer Bioengineering Conference, Keystone, CO, June 20-24, 2007.
63. **Nerurkar NL**, Nguyen AM, Elliott DM, Mauck RL. Annulus Fibrosus tissue engineering with aligned electrospun nanofibrous scaffolds. 53rd Annual Meeting of the Orthopaedic Research Society, San Diego, CA, p. 0249; February 11-14, 2007 (podium).
64. **Nerurkar NL**, Baker BM, Elliott DM, Mauck RL. Engineering of fiber-reinforced tissues with anisotropic biodegradable nanofibrous scaffolds. 2006 IEEE-EMBS Meeting, New York, NY, Aug 30-Sept 3, 2006 (podium).
65. **Nerurkar NL**, Ramasubramanian A, Taber LA. Morphogenetic adaptation of the embryonic heart to perturbed loading. 2006 ASME Summer Bioengineering Conference, Amelia Island, FL, June 21-25, 2006 (podium).