Nandan L. Nerurkar, PhD
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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, Department of Biomedical Engineering, Columbia University, New York, NY. Affiliate Member: Department of Genetics and Development, Columbia University Medical Center Affiliate Member: Zuckerman Mind Brain Behavior Institute, Columbia University.
2011 – 2017	Postdoctoral Fellow, Department of Genetics, Harvard Medical School, Boston, MA

Awards and Honors

2021	SEAS Research Equipment Assistant Program Award, Columbia University
2020	National Science Foundation CAREER Award
2019	SEAS Research Equipment Assistant Program Award, Columbia University
2016	Travel award, Society for Developmental Biology 75th 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	2nd 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	1st Place poster, Biomechanics, Penn Center for Musculoskeletal Disorders Symposium

Teaching Activities

Columbia University

Spring 2021	BMEN4350: Biomechanics of Developmental Biology
Spring 2021	Fluid Biomechanics Module, BMEN3020: Intro to Biomedical Engineering II
Fall 2020	Solid Biomechanics Module, BMEN3010: Introduction to Biomedical Engineering I
Spring 2020	Fluid Biomechanics Module, BMEN3020: Intro to Biomedical Engineering II
Fall 2019	Solid Biomechanics Module, BMEN3010: Introduction to Biomedical Engineering I
Spring 2019	Fluid Biomechanics Module, BMEN3020: Intro to Biomedical Engineering II
Fall 2018	Solid Biomechanics Module, BMEN3010: Introduction to Biomedical Engineering I

2020 – 2021	Advisor, BME Senior Design Team: Nicolas Acosta, Vincent Guo, Rachel Park, Brian Ross, Ashley Rosenberg
2019 – 2020	Advisor, BME Senior Design Team: Hilme Athar, Elisa Fang, Alex Kim, Lillian Wang
2019 – 2020	Advisor, BME Senior Design Team: Steven Bessler, Jonathon Kapilian, Michael Kirschner, Moshe Willner, Lekha Yesantharao

Outside Columbia University

Fall 2016	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

Trainees

Postdoctoral

2021 – Present	Pamela Mancini, PhD

Doctoral

2020 – Present	Panagiotis Oikonomou, Biomedical Engineering
2019 – Present	Olivia Powell, Biomedical Engineering
2019 – Present	Anna Schoonen, Biomedical Engineering
2018 – Present	John Durel, Biomedical Engineering

Rotation

Summer 2021	Julia Mo, Department of Genetics & Development, Columbia University Irving Medical Center
Fall 2019	Corey Hansen, Department of Genetics & Development, Columbia University Irving Medical Center

Undergraduate

2020 – Present	Vanshika Sriram, Biomedical Engineering
2020 – Present	Elizabeth Caso, Biomedical Engineering
2019 – Present	Hyunjee Lim, Biomedical Engineering
2019 – Present	Ruoyi Gong, Biological Sciences, Columbia College
2019 – 2020	Panagiotis Oikonomou, Biomedical Engineering
2019 – 2020	Hunter Hasley, Biomedical Engineering
2018 – 2020	Michael Anne Bolene, Biomedical Engineering
2018 – 2019	Anubhuti Mathur, Biological Sciences (now Staff Scientist, Arbor Biotechnologies, Cambridge, MA)

High School

Summer 2021	Kenia Delgado, Hypothekids Bioforce Program, New York City, NY
Summer 2021	Brianna Leung, Stuyvesant High School, New York City, NY

Summer 2020	Brianna Leung, Stuyvesant High School, New York City, NY
Summer 2019	Liana Hitts, Academy of American Studies, Long Island City, NY
Summer 2019	Daniela Plaza, Bard High School, Queens, NY
Summer 2019	Eben Hess, Trinity High School, New York City, NY

Outreach

2019 Research mentor, HYPOTHEkids Bioforce Program, New York City Scientific Research Mentorship Consortium
2019 Guest speaker, HYPOTHEkids Hk Makers Program
2020 Guest speaker, HYPOTHEkids Bioforce Program, New York City Scientific Research Mentorship Consortium
2020 Guest speaker, HYPOTHEkids Hk Makers Program

Institutional Service

Committees:

2019 – 2020	Faculty Search Committee, Open Rank/Field, Department of Biomedical Engineering
2019 – 2020	Co-Chair, Poster Chair, and Member, Planning Committee, 2020 Engineering in Medicine Symposium
2020	Faculty Retreat Subcommittee, Department of Biomedical Engineering
2018 – Present	Graduate Committee, Department of Biomedical Engineering
2020 – Present	Under-represented Minority (URM) Advocate, Graduate Committee, Department of Biomedical Engineering

Qualifying Exams:

02/06/19	Andrew Basilio, Biomedical Engineering, Columbia University (PI: Barclay Morrison III)
02/04/20	Richard Yan, Biomedical Engineering, Columbia University (PI: Elizabeth Hillman)
12/23/20	Corey Hansen, Genetics & Development, Columbia University Medical Center (PI: Mijo Simunovic)
09/10/21	Daniella Fodera, Biomedical Engineering, Columbia University (PI: Kristin Myers)

Thesis Proposal Committee:

09/26/19	Joanne Lee, Biomedical Engineering, Columbia University (PI: Lance Kam)
10/21/19	Dennis Yuan, Biomedical Engineering, Columbia University (PI: Lance Kam)
06/16/20	Philip Brudnicki, Biomedical Engineering, Columbia University (PI: Helen Lu)

Thesis Defense Committee:

12/04/19	Neda Kazeruni, Biomedical Engineering, Columbia University (PI: Henry Hess)
05/20/20	Sam Robinson, Biomedical Engineering, Columbia University (PI: X. Ed Guo)
09/18/20	Joanne Lee, Biomedical Engineering, Columbia University (PI: Lance Kam)
09/22/20	Stanislav Tsitkov, Biomedical Engineering, Columbia University (PI: Henry Hess)
01/22/21	Dennis Yuan, Biomedical Engineering, Columbia University (PI: Lance Kam)
04/19/21	Yizhong Jenny Hu, Biomedical Engineering, Columbia University (PI: X. Ed Guo)
04/19/21	Dantong Danielle Huang, Biomedical Engineering, Columbia University (PI: Kam Leong)
05/28/21	Michael Duffy, Biomedical Engineering, Columbia University (PI: Christopher Jacobs)

Review Activities:

2019	Revson Senior Fellows
2019 – Present	Research Initiatives in Science and Engineering (RISE) Award

External Service

Journal Editorial Activities

2021	Guest Editor, Special Issue on Synthetic Developmental Biology, Seminars in Cell & Developmental Biology

Conference Organizing Activities

2020	Judge, M.S. Student Paper competition, ASME/SB3C
2019	Organizer and Chair, Biomechanics of Morphogenesis, 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering
2019	Judge, Student Poster competition, 80th Annual Meeting of the Society for Developmental Biology
2012 – Present	co-Chair, Morphogenesis & Development track, Bioengineering Division, American Society of Mechanical Engineers/SB3C
2016 – Present	Solid Mechanics and Cell & Tissue Engineering Technical Committee, SB3C
2012 – 2017	Judge, PhD Student Paper/Poster Competition, ASME/SB3C

Other

2021	Panelist, NIH Centers for Scientific Review Listening Session on Reviewer Training

Professional Society Memberships

2016 – Present	International Society of Differentiation
2016 – Present	Biomedical Engineering Society
2014 – Present	Summer Biomechanics, Bioengineering, and Biotransport, Conference (SB3C) Foundation
2013 – Present	Society for Developmental Biology
2011 – 2014	American Society of Mechanical Engineers, Bioengineering Division

Patents

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

Grant Support

Active:

2021 – 2026	National Institutes of Health R35GM142995: Investigation of a neuromesendodermal progenitor population in the posterior avian endoderm (PI, $1,250,000 Direct)
2020 – 2025	National Science Foundation CAREER Award: Mechanobiology of vertebrate morphogenesis (PI, $357,000 Direct)
2019 – 2022	National Institutes of Health R21 HD099529: Morphogenesis and patterning of the vertebrate gut tube. (PI, $275,000 Direct; no cost extension).

Completed:

2020	Digestive Disease Research Core Pilot Grant, Columbia University Irving Medical Center: Molecular and cellular basis of intestinal morphogenesis (PI).
2017 – 2018	Avery's Angels Gastroschisis Foundation Research Funding support: The role of BMP signaling in intestinal retraction (PI).
2011 – 2014	National Institutes of Health, F32 HD069074: Mechanical and molecular factors underlying morphogenesis of the intestinal villi (PI).

Review Activities

Peer-reviewed Journals

Proc Natl Acad Sci, eLife, Developmental Cell, Biophysical Journal, ACS Biomaterials Science & Engineering, Biomaterials, Biomechanics in Modeling and Mechanobiology, Cell Health and Cytoskeleton, Colloids and Surfaces B: Biointerfaces, Communications Biology, European Cells and Materials, Engineering Science & Technology: an Int'l Journal, IEEE Life Sciences Letters, Integrative Biology, 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, Stem Cell Research & Therapy, Tissue Engineering

Grant Review

2018	Wellcome Trust
2020	NIH Study Section: 10/05/20 Intercellular Interactions (ICI), Early Career Reviewer
2020	United Kingdom Research & Innovation Medical Research Council (MRC)
2021	NSF Review Panel: 03/29/21 – 03/30/21
2021	Wellcome Trust

Conference Abstract Review

2011 – Present	Summer Biomechanics Bioengineering and Biotransport Conference (SB3C)
2020	Biomedical Engineering Society Stem Cell Engineering Track
2019	Biomedical Engineering Society Tissue Engineering Track
2019	Biomedical Engineering Society Undergraduate Submissions

Invited Talks

1. "Buckling morphogenesis of the small intestine." Developmental Mechanics International Seminar Series. Apr 15, 2021. Virtual.
2. "Molecular control of physical forces in amniote gut morphogenesis." Program in Developmental Biology, Vanderbilt University, Nashville, TN. Mar 26, 2021. Virtual.
3. "Molecular and cellular basis of intestinal looping morphogenesis." Columbia University Digestive & Liver Diseases Research Center Annual Retreat. Sept 21st, 2020.
4. "Mechanobiology of gut morphogenesis." *BME Breaks* Virtual Seminar Series hosted by Department of Biomedical Engineering, Columbia University. June 5, 2020. Virtual.
5. "Mechanobiology of gut morphogenesis." University of Minnesota Developmental Biology Symposium, Minneapolis, MN Oct 5, 2020. Postponed due to COVID19 pandemic
6. "FGFs regulate tissue-scale forces to drive morphogenesis of the vertebrate gut." Gordon Research Conference on FGFs in Development and Disease, Lucca, Italy May 10, 2020. Postponed due to COVID19 pandemic.
7. "Mechanobiology of vertebrate morphogenesis." Physics Engineering Biology Program, Yale University, New Haven, CT Apr 20, 2020. Postponed due to COVID19 pandemic
8. "Mechanobiology of vertebrate morphogenesis." Department of Cell, Developmental, and Regenerative Biology, Icahn School of Medicine at Mount Sinai, New York, NY Feb 27, 2020.
9. "Mechanobiology of vertebrate morphogenesis." Penn Institute for Regenerative Medicine, Stem Cell Club. University of Pennsylvania, Philadelphia, PA Nov 20, 2019.
10. "Mechanobiology of vertebrate morphogenesis." Department of Biomedical Engineering, University of Utah, Salt Lake City, UT, Nov 8, 2019.
11. "Mechanobiology of vertebrate morphogenesis." College of Dental Medicine, Columbia University Medical Center, New York, NY Oct 11, 2019.
12. "Mechanobiology of vertebrate morphogenesis." Department of Molecular Biology and Biochemistry, Rutgers University, Piscattaway, NJ Oct 8, 2019.

13. "Molecular control of forces driving vertebrate morphogenesis." 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, New York, NY Aug 14, 2019.
14. "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.
15. "Molecular control of forces driving morphogenesis of the vertebrate gut." Department of Biological Science, Columbia University, New York, NY, Nov 5, 2018.
16. "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.
17. "Morphogenesis and Developmental Biomechanics." Department of Biomedical Engineering, Columbia University, New York, NY, Sept 14, 2018.
18. "Molecular control of forces driving morphogenesis of the vertebrate gut." Department of Genetics & Development, Columbia University Medical Center, New York, NY, May 29, 2018.
19. "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.
20. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biomedical Engineering, Columbia University, New York, NY, March 09, 2017.
21. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, Feb 16, 2017.
22. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biomedical Engineering, Boston University, Boston, MA, Feb 09, 2017.
23. "Molecular control of forces during morphogenesis of the vertebrate gut." Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA, Feb 02, 2017.
24. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biology, Tufts University, Medford, MA, Jan 27, 2017.
25. "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.
26. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Molecular Biology, Princeton University, Princeton, NJ, Jan 11, 2017.
27. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biological Sciences, University of Delaware, Newark, DE, Nov 30, 2016.
28. "Molecular control of physical forces during morphogenesis of the vertebrate gut." Department of Biological Sciences, Union College, Schenectady, NY, Oct 27, 2016.
29. "BMP signaling modulates differential growth to drive buckling morphogenesis of the small intestine." Biophysics in Development Discussion Group. Cambridge MA, June 21, 2016.
30. "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.
31. "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.
32. "Molecular control of physical forces during morphogenesis of the vertebrate gut." University of Massachusetts, Amherst, MA Aug 13, 2014.
33. "Morphogenesis of the vertebrate gut tube." Mechanical Forces in Development Seminar Series, Boston MA Jan 26, 2012.
34. "Nanofibrous biologic laminates replicate the form and function of the annulus fibrosus." Department of Genetics, Harvard Medical School, Boston MA, Feb. 11, 2010.

35. "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.

Publications *(h-index 24 and 3,412 total citations; Google Scholar 05/24/2021)*

1. Powell OC, Oikonomou P, **Nerurkar NL**. Morphogenesis of the amniote gut tube *(in preparation)*.
2. Durel JF, **Nerurkar NL**. Mechanobiology of vertebrate gut morphogenesis. *Current Opinions in Genetics & Development,* 12(63), 2020.
3. Huycke TR, Miller BM, **Nerurkar NL**, Mahadevan L, Tabin CJ. Genetic and mechanical regulation of intestinal smooth muscle development. *Cell*, 179(1), 2019.
4. **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.
5. **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.
6. 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.
7. 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.
8. 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.
9. 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.
10. Smith LJ, Chiaro JA, **Nerurkar NL**, Cortes DH, Horava S, Hebela 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.
11. 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.
12. 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.
13. **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.
14. 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.
15. **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.
16. **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.

17. Nathan AS, Baker BM, **Nerurkar NL**, Mauck RL. Mechano-topographic modulation of stem cell nuclear shape on nanofibrous scaffolds. *Acta Biomaterialia*, 7(1), 2011.

18. **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.

19. **Nerurkar NL**, Elliott DM, Mauck RL. Mechanical design criteria for intervertebral disc tissue engineering. *Journal of Biomechanics*, 43(6), 2010.

20. **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.

21. 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.

22. 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.

23. 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.

24. **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.

25. **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.

26. **Nerurkar NL**, Ramasubramanian A, Taber LA. Morphogenetic adaptation of the looping embryonic heart to altered mechanical loads. *Developmental Dynamics*, 235(7), 2006.

27. 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.

28. 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. Durel JF, **Nerurkar NL**. Actomyosin contractility contributes to organ-scale buckling morphogenesis of the small intestine. From Molecular to Organs: The Mechanobiology of Morphogenesis Virtual Conference, October 28 – 30, 2020.
2. Gill H, Yin S, **Nerurkar NL**, Huycke TR, Mahadevan L, Tabin CJ. Morphogenesis of Distinct Lumen Wrinkling Patterns Along the Developing Intestinal Tract. Society for Developmental Biology 79th Annual Meeting, Virtual meeting, July 7 – 13, 2020.
3. Gill H, Yin S, **Nerurkar NL**, Huycke TR, Mahadevan L, Tabin CJ. Morphogenesis of Distinct Lumen Wrinkling Patterns Along the Developing Intestinal Tract. Society for Developmental Biology 79th Annual Meeting, Virtual meeting, July 7 – 13, 2020.
4. Durel JF, **Nerurkar NL**. Acto-myosin activity drives organ scale buckling morphogenesis of the small intestine. Sumer Biomechanics, Bioengineering, and Biotransport Conference, Virtual meeting, June 17 – 20, 2020.
5. Gill H, Huyck TR, **Nerurkar NL**, Yin S, Tabin CJ. Compartments along the developing intestinal tract have distinct lumen wrinkling patterns and tissue mechanics. Sumer Biomechanics, Bioengineering, and Biotransport Conference, Virtual meeting, June 17 – 20, 2020.
6. Durel JF, **Nerurkar NL**. Investigating a Role for Cell Contraction in Buckling Morphogenesis of the Small Intestine. Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 16 – 19, 2019.

7. Durel JF, **Nerurkar NL**. Active cell forces contribute to organ-scale buckling morphogenesis of the avian small intestine. Society for Developmental Biology 78th Annual Meeting, Boston, MA, July 26 – 30, 2019.
8. Gill H, Huycke TR, **Nerurkar NL**, Tabin CJ. Variation in tissue mechanical properties along the developing chick gut. Society for Developmental Biology 78th Annual Meeting, Boston, MA, July 26 – 30, 2019.
9. 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.
10. **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 (podium).
11. Galloway JL, Niu XB, Shah RR, **Nerurkar NL**, Noedl M. Tendon developmetal placticity and functional regeneration. Annual Meeting of the American Association of Anatomists, San Diego, CA, April 21 – 25, 2018.
12. **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).
13. **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).
14. **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.
15. Shah RS, Noedl 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 – 122, 2017.
16. **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).
17. **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 Biologys Satellite Symposium Collective Cell Migration: Biomechanics to Organogenesis, Boston, MA, Aug 4, 2016 (podium).
18. **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).
19. **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).
20. 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.
21. 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.
22. **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).
23. **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).
24. **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).
25. **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).
26. **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).
27. **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).

28. **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.
29. **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).
30. 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.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.
37. 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.
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