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Princeton University
Chemical & Biological Engineering and Molecular Biology
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EDUCATION & TRAINING

2007 Embryology, Woods Hole Marine Biological Laboratory
2003-2007 Postdoctoral fellowship, Life Sciences, Lawrence Berkeley National Laboratory
1998-2003 Ph.D. (with high distinction), Biomedical Engineering, Johns Hopkins University
1994-1998 S.B., Chemical Engineering, Massachusetts Institute of Technology
S.B., Biology, Massachusetts Institute of Technology

POSITIONS HELD

2007- Assistant professor, Department of Chemical & Biological Engineering,
Princeton University
2008- Associated faculty, Department of Molecular Biology, Princeton University
2008- Member, Breast Cancer Research Program, The Cancer Institute of New Jersey
2010- Visiting research assistant professor, Department of Biomedical Engineering,
Boston University
2003-2007 Postdoctoral fellow, Department of Cancer Biology, Lawrence Berkeley National
Laboratory (with Mina J. Bissell)
1999-2003 Research assistant, Department of Biomedical Engineering, Johns Hopkins University
School of Medicine (with Christopher S. Chen)
1995-1998 Undergraduate research assistant, Department of Chemical Engineering,
Massachusetts Institute of Technology (with Douglas A. Lauffenburger)

HONORS & AWARDS

Allan P. Colburn Award, AIChE (2011); Technology Review TR35 Young Innovator (2010); Alfred P. Sloan Research Fellow in Molecular Biology (2010-2012); Princeton Engineering Commendation for Outstanding Teaching (2009, 2010); E. Lawrence Keyes, Jr./Emerson Electric Co. Faculty Advancement Award (2009); David & Lucile Packard Fellow (2008-2013); Burroughs Wellcome Fund Career Award at the Scientific Interface (2007-2011); LBNL Outstanding Performance Award (2007); DOD Breast Cancer Research Program Postdoctoral Fellowship (2004-2007); NIH National Research Service Award Postdoctoral Fellowship (2004; declined); Keystone Symposia Student Scholarship, Signaling via cell-cell interactions (2003); Whitaker Foundation Graduate Fellowship (1999-2003); National Science Foundation Graduate Fellowship (1999; declined); Phi Beta Kappa Graduate (1998); Biotechnology Process Engineering Center Research Grant (1998); Tau Beta Pi Engineering Honor Society (1997); James E. Cunningham Memorial Fellowship (1997); Amoco Foundation Scholarship (1997); Edward Abdun-Nur Memorial Scholarship (1995-1998); Colorado School of Mines Engineers' Days Award (1994)

PROFESSIONAL ACTIVITIES

Students advised: Qike Kyle Chen (2008-present); Nikolce Gjorevski (2008-present); Eline Boghaert (2008-present); Sriram Manivannan (2009-present)

Fellows mentored: Esther Gomez, Ph.D. (2008-2010); KangAe Lee, Ph.D. (2009-present); Jason Gleghorn, Ph.D. (2010-present); Wenting Zhu, Ph.D. (2011-present); Hye Young Kim, Ph.D. (2011-present)

Courses taught:

Princeton: Chemical Reaction Engineering (CBE 441; lecturer, 2008, 2009, 2011);

Quantitative Physiology and Tissue Design (CBE 439/539/MOL 539; lecturer, 2009, 2011);

Physical Basis of Human Disease (CBE 440/540; lecturer, 2010); Quantitative Principles in Cell and Molecular Biology (MOL/EEB/CBE 215; lecturer 2011)

UC Berkeley: Aspects of Bioengineering (BioE 24; guest lecturer, 2005)

Johns Hopkins University: Molecules and Cells (580.221; guest lecturer, 2002); Biological Transport (580.461; graduate instructor, 2001); Cell and Tissue Engineering (580.440; graduate instructor, 2000)

MIT: Experimental Biology (7.02; laboratory instructor, 1997)

Professional societies: American Association for the Advancement of Science (AAAS); American Institute of Chemical Engineers (AIChE); American Society for Cell Biology (ASCB); Biomedical Engineering Society (BMES); Society for Biological Engineers (SBE); Society for Developmental Biology (SDB); The EMT International Association (TEMTIA)

Manuscript and proposal reviews: *Acta Biomaterialia*; *Biomacromolecules*; *Biomaterials*; *Biophysical Journal*; *BioTechniques*; *Breast Cancer Research*; *Cancer Research*; *Cell*; *Cell Biochemistry & Biophysics*; *Encyclopedia of Life Sciences*; *FASEB Journal*; *In Vitro Cellular and Developmental Biology*; *Integrative Biology*; *Journal of Biological Chemistry*; *Journal of Cell Biology*; *Journal of Cell Science*; *Journal of Pathology*; *Lab on a Chip*; *Langmuir*; *Molecular Biology of the Cell*; *Nano Letters*; *Nanomedicine*; *Nature Cell Biology*; *Nature Reviews Cancer*; *Nature Reviews Molecular Cell Biology*; *Physical Biology*; *PLoS ONE*; *Proceedings of the American Thoracic Society*; *Proceedings of the National Academy of Sciences*; *Proceedings of the Royal Academy Interface*; *Science*; *Tissue Engineering*; *Trends in Biotechnology*; *WIREs Systems Biology & Medicine*; National Institutes of Health (NIH: NIBIB Special Emphasis Panels; NCI Tumor Progression & Metastasis Study Section); Netherlands Organisation for Scientific Research; Human Frontier Science Program (Research Grant Awards); Howard Hughes Medical Institute

PUBLICATIONS (*, **, and * denote those with ≥ 25 , 50, and 100 citations, respectively)**
[Total citations = 2801; Average citations per paper = 50; H-index = 23]

52. Lee K., **Nelson C.M.** New insights into the regulation of epithelial-mesenchymal transition and tissue fibrosis, *Int. Rev. Cell Dev. Biol.*, in press.
51. Gjorevski N., **Nelson C.M.** Integrated morphodynamic signalling of the mammary gland. *Nat. Rev. Mol. Cell Biol.*, 12: 581-593 (2011).

50. Gjorevski N., Boghaert E., **Nelson C.M.** Regulation of epithelial-mesenchymal transition by transmission of mechanical stress through epithelial tissues. *Cancer Microenviron.*, in press (2011).
49. Gleghorn J.P., **Nelson C.M.** Nanopatterned surfaces for exploring and regulating cell behavior. *Encyclopedia Nanotech.*, in press (2011).
48. Lee K., Gjorevski N., Boghaert E., Radisky D.C., **Nelson C.M.** Snail1, Snail2, and E47 promote mammary epithelial branching morphogenesis. *EMBO J.*, 30: 2662-2674 (2011). *highlighted in Mammary Cell News*
47. Manivannan S., Gleghorn J.P., **Nelson C.M.** Engineered tissues to quantify collective cell migration during morphogenesis. In *Kidney Development: Methods and Protocols (Methods in Molecular Biology series)* (ed. Michos O.) Springer, New York, in press (2011).
46. Pavlovich A.L., Boghaert E., **Nelson C.M.** Mammary branch initiation and extension are inhibited by separate pathways downstream of TGF β in culture. *Exp. Cell Res.*, 317: 1872-1884 (2011).
45. Gomez E.W., **Nelson C.M.** Lithographically-defined two- and three-dimensional tissue microarrays. In *Biological Microarrays (Methods in Molecular Biology, vol. 671)*, pp 107-116 (eds. Khademhosseini A., Suh K.-Y. & Zourob M.) Springer, New York (2011).
44. Raghavan S., Shen C.J., Desai R.A., Sniadecki N.J., **Nelson C.M.**, Chen C.S. Decoupling diffusional from dimensional control of signaling in 3D culture reveals a role for myosin in tubulogenesis. *J. Cell Sci.*, 123: 2877-2883 (2010).
43. Gjorevski N., **Nelson C.M.** Endogenous patterns of mechanical stress are required for branching morphogenesis. *Integr. Biol.*, 2: 424-434 (2010).
42. Pavlovich A.L., Manivannan S., **Nelson C.M.** Adipose stroma induces branching morphogenesis of engineered epithelial tubules. *Tissue Eng. Part A*, 16: 3719-3726 (2010).
41. Boghaert E., **Nelson C.M.** Tumor microenvironment and host/stroma interactions: Guidelines for physical modeling. In *Biophysical Modeling of Cancer in Silico* (ed. Cristini V.), in press (2010).
40. Gjorevski N., **Nelson C.M.** The mechanics of development: models and methods for tissue morphogenesis. *Birth Defects Res. C Embryo Today*, 90: 193-202 (2010).
- 39*. Liu Z., Tan J.L., Cohen D.M., Yang M.T., Sniadecki N.J., Ruiz S.A., **Nelson C.M.**, Chen C.S. Mechanical tugging forces regulate the size of cell-cell junctions. *Proc. Natl. Acad. Sci. USA*, 107: 9944-9949 (2010).
Selected commentary on this manuscript: Faculty of 1000 evaluations:
<http://www.f1000biology.com/article/id/3781956/evaluation>
38. Raghavan S., **Nelson C.M.**, Baranski J.D., Lim E., Chen C.S. Geometrically controlled endothelial tubulogenesis in micropatterned gels. *Tissue Eng. Part A*, 16: 2255-2263 (2010).

37. Gjorevski N., **Nelson C.M.** Branch formation in organ development. *Wiley Interdiscip. Rev. Systems Biol. Med.*, 2: 734-741 (2010).
36. Gomez E.W., Chen Q.K., Gjorevski N., **Nelson C.M.** Tissue geometry patterns epithelial-mesenchymal transition via intercellular mechanotransduction. *J. Cell. Biochem.*, 110: 44-51 (2010).
featured on cover of journal issue
35. Mori H., Gjorevski N., Inman J.L., Bissell M.J., **Nelson C.M.** Self-organization of engineered epithelial tubules by differential cellular motility, *Proc. Natl. Acad. Sci. USA.*, 106: 14890-14895 (2009).
34. Gjorevski N., **Nelson C.M.** Bidirectional extracellular matrix signaling during tissue morphogenesis, *Cytokine Growth Factor Rev.*, 20: 459-465 (2009) [Review].
33. Chen C.S., **Nelson C.M.**, Khauv D., Bennett S., Radisky E.S., Hirai Y., Bissell M.J., Radisky D.C. Homology with vesicle fusion mediator syntaxin-1a predicts determinants of epimorphin/syntaxin-2 function in mammary epithelial morphogenesis. *J. Biol. Chem.*, 284: 6877-6884 (2009).
featured on cover of journal issue
32. **Nelson C.M.** Geometric control of tissue morphogenesis. *Biochim. Biophys. Acta.*, 1793: 903-910 (2009) [Review].
- 31*. LaBarge M.A., **Nelson C.M.**, Villadsen R., Fridriksdottir A., Ruth J.R., Stampfer M.R., Petersen O.W., Bissell M.J. Human mammary progenitor cell fate decisions are products of interactions with combinatorial microenvironments. *Integr. Biol.*, 1: 70-79 (2009).
featured on cover of inaugural journal issue
- 30*. Xu R., **Nelson C.M.**, Muschler J.L., Veiseh M., Vonderhaar B.K., Bissell M.J. Sustained activation of STAT5 is essential for chromatin remodeling and maintenance of mammary-specific function. *J. Cell Biol.*, 184: 57-66 (2009).
Selected commentary on this manuscript: *Faculty of 1000* evaluations:
<http://www.f1000biology.com/article/id/1145077/evaluation>
- 29*. Alcaraz J., Xu R., Mori H., **Nelson C.M.**, Mroue R., Spencer V.A., Brownfield D., Radisky D.C., Bustamante C., Bissell M.J. Laminin and biomimetic extracellular elasticity enhance functional differentiation in mammary epithelia. *EMBO J.*, 27: 2817-2828 (2008).
Selected commentary on this manuscript: *Faculty of 1000* evaluations:
<http://www.f1000biology.com/article/id/1124575/evaluation>
28. Gray D.S., Liu W.F., Shen C.J., Bhadriraju K., **Nelson C.M.**, Chen C.S. Engineering amount of cell-cell contact demonstrates biphasic proliferative regulation through RhoA and the actin cytoskeleton. *Exp. Cell Res.*, 314: 2846-2854 (2008).
27. **Nelson C.M.**, Khauv D., Bissell M.J., Radisky D.C. Change in cell shape is required for matrix metalloproteinase-induced epithelial-mesenchymal transition of mammary epithelial cells. *J. Cell. Biochem.*, 105: 25-33 (2008).

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26. **Nelson C.M.**, Inman J.L., Bissell M.J. Three-dimensional lithographically-defined organotypic tissue arrays for quantitative analysis of morphogenesis and neoplastic progression. *Nat. Protoc.*, 3: 674-678 (2008).
- 25*. Liu W.F., **Nelson C.M.**, Tan J.L., Chen C.S. Cadherins, RhoA, and Rac1 are differentially required for stretch-mediated proliferation in endothelial versus smooth muscle cells. *Circ. Res.*, 101: e44-52 (2007).
24. Hirai Y., **Nelson C.M.**, Yamazaki K., Takebe K., Madden B., Radisky D.C. The non-classical export of epimorphin and its adhesion to αv -integrin for regulation of epithelial morphogenesis. *J. Cell Sci.*, 120: 2032-2043 (2007).
- 23*. LeBeyec J., Xu R., Moonlee S.-Y., **Nelson C.M.**, Rizki A., Alcaraz J., Bissell M.J. Cell shape regulates global histone acetylation in human mammary epithelial cells. *Exp. Cell Res.*, 313: 3066-3075 (2007).
22. Itoh M., **Nelson C.M.**, Myers C.A., Bissell M.J. Rap1 integrates tissue polarity, lumen formation, and tumorigenic potential in human breast epithelial cells. *Cancer Res.*, 67: 4759-4766 (2007).
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- 21***. **Nelson C.M.**, VanDuijn M.M., Inman J.L., Fletcher D.A., Bissell M.J. Tissue geometry determines sites of branching morphogenesis in organotypic cultures, *Science*, 314: 298-300 (2006).
Selected commentary on this manuscript: *Faculty of 1000* evaluations: <http://www.f1000biology.com/article/id/1047582/evaluation>; Hayes, S. Shaped to split. *Nat. Cell Biol.*, 8: 1325 (2006); McCarthy, N. Tissue morphology: Branching out. *Nat. Rev. Cancer*, 6: 829 (2006); Vogel, G. How developing organs do the splits. *ScienceNOW*, 1012: 2 (2006); Yarris, L. Tissue geometry plays a crucial role in breast cell invasion. *Research News Berkeley Lab*, Oct. 12, 2006.
- 20*. **Nelson C.M.**, Tien J. Microstructured extracellular matrices in tissue engineering and development. *Curr. Opin. Biotech.*, 17: 518-523 (2006) [Review].
- 19*. Liu W.F., **Nelson C.M.**, Pirone D.M., Chen C.S. E-cadherin engagement stimulates proliferation via Rac1. *J. Cell Biol.*, 173: 431-441 (2006).
- 18***. **Nelson C.M.**, Bissell M.J. Of extracellular matrix, scaffolds, and signaling: Tissue architecture regulates development, homeostasis, and cancer. *Annu. Rev. Cell Dev. Biol.*, 22: 287-309 (2006) [Review].
17. Kenny P.A., **Nelson C.M.**, Bissell M.J. The ecology of tumors. *The Scientist*, April 2006: 30-37 (2006) [Review].

- 16***. Liu H., Radisky D.C., **Nelson C.M.**, Zhang H., Fata J.E., Roth R.A., Bissell M.J. Mechanism of Akt1 inhibition of breast cancer cell invasion reveals a protumorigenic role for TSC2, *Proc. Natl. Acad. Sci. USA.*, 103: 4134-4139 (2006).
15. **Nelson C.M.**, Liu W.F., Chen C.S. Manipulation of cell-cell adhesion using bowtie-shaped microwells. *Adhesion Protein Protocols (Methods in Molecular Biology, Vol. 96)*, 1-10 (2006) [Book chapter].
- 14***. **Nelson C.M.**, Jean R.P., Tan J.L., Liu W.F., Sniadecki N.J., Spector A.A., Chen C.S. Emergent patterns of growth controlled by multicellular form and mechanics, *Proc. Natl. Acad. Sci. USA.*, 102: 11594-11599 (2005).
Selected commentary on this manuscript: *Faculty of 1000* evaluations: <http://www.f1000biology.com/article/16049098/evaluation>; Ingber, DE. Mechanical control of tissue growth: function follows form, *Proc. Natl. Acad. Sci. USA*, 102:11571-11572 (2005); Chin, G. Editor's choice: Geometry of cell proliferation, *Science*, 309: 1461 (2005); Development: geometry of cell proliferation, *Sci. STKE*, tw304 (2005).
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- 13***. Radisky D.C., Levy D.D., Littlepage L.E., Liu H., **Nelson C.M.**, Fata J.E., Leake D., Godden E.L., Albertson D.G., Nieto M.A., Werb Z., Bissell M.J. Rac1b and reactive oxygen species mediate MMP3-induced EMT and genomic instability, *Nature*, 436 (7047): 123-127 (2005).
Selected commentary on this manuscript: *Faculty of 1000* evaluations: <http://www.f1000biology.com/article/16001073/evaluation>; Chin, G. Editor's choice Biomedicine: Outside influences, *Science*, 309: 536 (2005); Lebrasseur, N. Research roundup: MMPs rearrange DNA, *J. Cell Biol.*, 170 (3): 336 (2005); Bussell, K. Cancer: A bad influence, *Nat. Rev. Mol. Cell Biol.*, 6: 596 (2005); Novak, K. Research highlights: Environmental issues, *Nat. Rev. Cancer*, 5: 585 (2005); Comoglio, PM and L. Trusolino. Cancer: the matrix is now in control, *Nat. Med.*, 11: 1156-9 (2005).
- 12**. **Nelson C.M.**, Bissell M.J. Modeling dynamic reciprocity: Engineering three-dimensional culture models of breast architecture, function, and neoplastic transformation. *Semin. Cancer Biol.*, 15 (5): 342-352 (2005) [Review].
11. Alcaraz J., **Nelson C.M.**, Bissell M.J. Biomechanical approaches for studying integration of tissue structure and function in mammary epithelia. *J. Mammary Gland Biol. Neoplasia*, 9 (4): 361-74 (2004) [Review].
- 10**. Tan J.L., Liu W., **Nelson C.M.**, Raghavan S., Chen C.S. Simple approach to micropattern cells on common culture substrates by tuning substrate wettability. *Tissue Eng.*, 10 (5-6): 865-72 (2004).
- 9**. **Nelson C.M.**, Pirone D.M., Tan J.L., Chen C.S. Vascular endothelial-cadherin regulates cytoskeletal tension, cell spreading, and focal adhesions by stimulating RhoA. *Mol. Biol. Cell*, 15 (6): 2943-53 (2004).
- 8***. McBeath R., Pirone D.M., **Nelson C.M.**, Bhadriraju K., Chen C.S. Cell shape, cytoskeletal tension, and RhoA regulate stem cell lineage commitment. *Dev. Cell*, 6 (4): 483-95 (2004).
Selected commentary on this manuscript: *Faculty of 1000* evaluations: <http://www.f1000biology.com/article/15068789/evaluation>; Ball, P. Shape dictates fate.

Nature, **428**: 907 (2004); Settleman, J. Tension precedes commitment - even for a stem cell. *Mol. Cell*, **14** (2): 148-150 (2004); Lucentini, J. Stem cell sculpting. *The Scientist*, **18** (16): 22 (2004).

- 7*. **Nelson C.M.**, Chen C.S. VE-cadherin simultaneously stimulates and inhibits cell proliferation by altering cytoskeletal structure and tension. *J. Cell Sci.*, 116 (17): 3571-81 (2003).
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6. **Nelson C.M.**, Chen C.S. Engineering cell adhesion for biotechnology applications. *Chem. Eng. Tech.*, in press (2003) [Review].
- 5**. **Nelson C.M.**, Raghavan S., Tan J.L., Chen C.S. Degradation of micropatterned surfaces by cell-dependent and -independent processes. *Langmuir*, 19 (5): 1493-99 (2003).
4. Tan J.L., **Nelson C.M.**, Gray D.S., Chen C.S. Approaches to organize cells on surfaces. *IEEE Engineering in Medicine and Biology Magazine*, 101-103 (2002) [Review].
- 3***. **Nelson C.M.**, Chen C.S. Cell-cell signaling by direct contact increases cell proliferation via a PI3K-dependent signal. *FEBS Letters*, 514 (2-3): 238-42 (2002).
- 2**. Tien J., **Nelson C.M.**, Chen C.S. Fabrication of aligned microstructures with a single elastomeric stamp. *Proc. Nat. Acad. Sci. USA*, 99 (4): 1758-62 (2002).
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- 1**. Asthagiri A.R., **Nelson C.M.**, Horwitz A.F., Lauffenburger D.A. Quantitative relationship among integrin-ligand binding, adhesion, and signaling via focal adhesion kinase and extracellular-signal regulated kinase 2. *J. Biol. Chem.*, 274 (38): 27119-27 (1999).

INVITED TALKS

41. Mechanical stress, cellular dynamics, and tissue morphogenesis. Biosystems Science and Engineering seminar series, ETH Zurich, Basel, Switzerland, October 25, 2011.
40. Substratum mechanics and tissue development. Polymer Science and Engineering seminar series, University of Massachusetts, Amherst, MA, September 9, 2011.
39. Mechanotransduction and morphodynamics of engineered tissues. Gulf Coast Consortia Collaborative Workshops for Investigators in Biosciences, Bioengineering, and Computational Sciences Seminar Series, Rice University, Houston, TX, September 6, 2011.
38. Multicellular dynamics in engineered tissues. Biomaterials & Tissue Engineering Gordon Conference, Holderness School, Plymouth, NH, August 1, 2011.
37. Mechanical stress and the initiation of epithelial branches. Mechanics of Development Symposium, 3rd Frontiers in Biomechanics Meeting, United States National Committee on Biomechanics (USNCB), Farmington, PA, June 21, 2011.

36. Building an epithelial tree branch by branch. Institute of Bioengineering and Nanotechnology (IBN), Singapore, May 18, 2011.
35. How to engineer an epithelial tree. Chemical Engineering Seminar Series, Columbia University, New York, NY, April 19, 2011.
34. Morphogenesis of engineered epithelial trees. Biomedical Engineering Seminar, Rutgers University, New Brunswick, NJ, April 4, 2011.
33. Microscale engineered tissue morphogenesis. 3rd Tissue Engineering Symposium, Sydney University Tissue Engineering Network (SuTEN), Sydney University, November 9, 2010.
32. Morphogenesis of engineered epithelial trees. Genetics and Development Seminar, Columbia University Medical Center, New York, NY, October 26, 2010.
31. Chemical and mechanical gradients in tissue development. GI Research Seminar, University of Pennsylvania, Philadelphia, PA, October 14, 2010.
30. Development of engineered tissues. 22nd Annual Packard Fellows Meeting, Monterey, CA, September 9, 2010.
29. Mechanical patterning of epithelial trees. EPFL Life Science Symposium, EPFL, Lausanne, Switzerland, September 2, 2010.
28. Patterning of epithelial tissues. Signal Transduction by Engineered Extracellular Matrices Gordon Conference, University of New England, Biddeford, ME, July 1, 2010.
27. Endogenous (tissue-generated) mechanical and chemical gradients. “Gradients and flow of soluble factors in the tumor microenvironment workshop”, Tumor Microenvironment Network, National Cancer Institute, Bethesda, MD, May 27, 2010.
26. Dynamics of normal and tumorigenic development in model tissues. Computational Biology seminar series, Memorial Sloan-Kettering Cancer Center, New York, NY, May 20, 2010.
25. How to build an epithelial tree. Cancer, complexity, and the microenvironment: A scientific symposium and celebration in honor of Mina J. Bissell, Lawrence Berkeley National Laboratory, Berkeley, CA, May 8, 2010.
24. Tissue geometry and epithelial-mesenchymal transition. 2nd International Conference on Stem Cell Engineering, Boston, MA, May 5, 2010.
23. Morphogenesis of microscale tissues. Topics in Bioengineering Seminar Series, Harvard University, Cambridge, MA, March 2, 2010.
22. Quantitative analysis of morphogenesis of engineered tissues. Biomedical Engineering Seminar Series, Rensselaer Polytechnic Institute (RPI), Troy, NY, February 19, 2010.
21. Morphogenesis of engineered tissues. Steele Laboratory Seminar Series, Harvard University, Boston, MA, February 12, 2010.

20. Development of microscale tissues. Nanobiotechnology Symposium, Cornell University, Ithaca, NY, October 19, 2009.
19. Morphogenesis of model tissues. Society for Developmental Biology Annual Meeting, San Francisco, CA, July 26, 2009.
18. Mechanisms of pattern formation in model tissues. Biomedical Engineering Seminar Series, New Jersey Institute of Technology, Newark, NJ, April 3, 2009.
17. Organ development: Insights from engineered tissues and numerical models. Program in Integrative Information, Computer, and Application Sciences (PICASso) Interdisciplinary Computational Seminar Series, Princeton University, Princeton, NJ, February 23, 2009.
16. Cellular dynamics in tissue patterning and development. Carolina Biophysics Symposium, Chapel Hill, NC, November 21, 2008.
15. Pattern formation in microfabricated tissues. Institute for Medicine & Engineering (IME) Seminar Series, University of Pennsylvania, Philadelphia, PA, October 14, 2008.
14. Pattern formation in engineered tissues. Biomedical Engineering Seminar Series, Carnegie Mellon University, Pittsburgh, PA, September 29, 2008.
13. Control of tissue architecture and dynamics. Signal Transduction by Engineered Extracellular Matrices Gordon Conference, Bates College, ME, July 8, 2008.
12. Mammary gland development. Santa Cruz Developmental Biology Meeting, Santa Cruz, CA, June 29, 2008.
11. Emergence of patterns during tissue morphogenesis. Society for Industrial and Applied Mathematics (SIAM) Conference on Mathematical Aspects of Materials Science, Philadelphia, PA, May 13, 2008.
10. Understanding the emergence of patterns during tissue morphogenesis. Biomedical Engineering Seminar Series, University of California, Irvine, CA, April 24, 2008.
9. Quantitative models of mammary gland development and disease. Cancer Center Grand Rounds seminar, The Cancer Institute of New Jersey, New Brunswick, NJ, January 16, 2008.
8. Patterning and dynamics during branching morphogenesis. Biomolecular Seminar Series, Boston University, Boston, MA, December 10, 2007.
7. Emergence of patterns during morphogenesis of microscale tissues. Biophysics seminar series, Princeton, NJ, November 26, 2007.
6. Engineering models of mammary gland development and disease. Mayo Clinic Cancer Center, Jacksonville, FL, November 2, 2007.
5. Department of Molecular Biology faculty research seminar, Princeton, NJ, October 30, 2007.

4. Competition, cooperation, and emergence during tissue morphogenesis. Engineering Cell Biology II Conference, MIT, Cambridge, MA, August 5-8, 2007.
3. Branching from engineered tubes. Engineering Vascular Cell Function Using Nanoscale Cues Symposium, Experimental Biology 2007, Washington DC, April 30, 2007.
2. Engineering culture models for quantitative analysis of tissue morphogenesis. New Directions in Quantitative Biology Symposium, Harvard University, April 21, 2007.
1. An engineered tissue model of mammary epithelial branching morphogenesis. UCSF Mouse Genetics 2nd Annual Symposium, UCSF, May 19, 2006.