

RESUME – Delphine M.D. Dean

PERSONAL DATA

Current Rank: Gregg-Graniteville Associate Professor

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EDUCATION

Ph.D., Massachusetts Institute of Technology, 2005, Electrical Engineering and Computer Science

M. Eng., Massachusetts Institute of Technology, 2001, Electrical Engineering and Computer Science

S.B., Massachusetts Institute of Technology, 2001, Electrical Engineering and Computer Science

PROFESSIONAL EXPERIENCE

Clemson University, 2014- , Gregg-Graniteville Associate Professor of Bioengineering

Clemson University, 2013- 2014, Associate Professor of Bioengineering

Clemson University, 2007-2013, Assistant Professor of Bioengineering

Clemson University, 2005-2006, Postdoctoral Fellow in Bioengineering

Massachusetts Institute of Technology, 2005, Postdoctoral Associate in Bioengineering

MEMBERSHIPS

American Chemical Society, ACS (2002-)

American Physical Society, APS (2002-)

Materials Research Society, MRS (2004-)

Biomedical Engineering Society, BMES (2005-)

Society for Biomaterials, SFB (2007-)

American Society for Engineering Education, ASEE (2008-)

Orthopaedics Research Society, ORS (2012-)

PUBLICATIONS

Books and Monographs

- J. G. Goldsmith, H. L'Ecuyer, D. Dean, E.C. Goldsmith, *Application of Gold Nanorods in Cardiovascular Science* Chapter in *Anisotropic and Shape-Selective Nanomaterials*, 1st Edition, H. Murph, S.E. Larsen, G.K. Coopersmith (eds), (2017), Springer, Cham, Switzerland. (pg 427-442) , ISBN-13: 978-3319596617
- J. I. Rodriguez-Devora, C. Moody, A. Desai, D. Dean, *Chapter 6: 3D Cancer Spheroid Biofabrication Using Thermal Inkjet-Based Bioprinting for Rapid Screening*, Chapter in *Engineering 3D Tissue Test Systems* (2017), K.J.L. Burg, D. Dréau, T. Burg (eds), CRC Press, Boca Raton, FL, USA. (pg 91-104) ISBN 9781138745674

Refereed Journal Publications

1. Datko Williams, L., Farley, A., Cupelli, M., Alapati, S., Kennedy, M.S., Dean, D., "Effects of substrate stiffness on dental pulp stromal cells in culture", *Journal of Biomedical Materials Research A*, 106(7):1789-97, 2018
2. Fellows, B. D., Ghobrial, N., Mappus, E., Hargett, A., Bolding, M., Dean, D., Mefford, O.T., "In vitro studies of heparin-coated magnetic nanoparticles for use in the treatment of neointimal hyperplasia", *Nanomedicine*, 14(4):1191-1200, 2018
3. Truong, K., Bradley, S., Baginski, B., Wilson, J.R., Medlin, D., Zheng, L., Wilson, R.K., Rusin, M., Takacs, E., Dean, D., "The effect of well-characterized, very low-dose x-ray radiation on fibroblasts". *PLoS One*. 13(1):e0190330, (2018).
4. Chen, R., Dean, D. "Mechanical properties of stem cells from different sources during vascular smooth muscle cell differentiation", *Molecular and Cellular Biomechanics*, 14(3):153-169, 2017.
5. Hafner K, Montag D, Maeser H, Peng C, Marcotte WR Jr, Dean D, Kennedy MS. Evaluating adhesion and alignment of dental pulp stem cells to a spider silk substrate for tissue engineering applications. *Materials Science and Engineering C*. 1;81:104-112, (2017).
6. Dean D, Hafner K, Chen X, Kirkland B, Hafner T, Kennedy, MS. The Influence of Cellular Debris on Cell Guidance and Implications for Incorporating Silicon Based Micropatterns. *MRS advances*. 2017 June 15; 2(57):3537-3546.
7. A.N. Chowdhury, H.T. Vo, S. Olang, E. Mappus, B. Peterson, N. Hlavac, T. Harvey, D. Dean, "A customizable chamber for measuring cell migration" *Journal of Visualized Experimentation*, 12(121), (2017).
8. TA Lyda, EL Wagner, AX Bourg, C Peng, GN Tomaraei, D Dean, MS Kennedy, WR Marcotte Jr. "A Leishmania secretion system for the expression of major amputate spidroin mimics". *PLoS One*. 12(5):e0178201, (2017).

9. D. Dean, J. DesJardins, M. McCullough, C. Brewer, I. DeMass, K. Guion, C. Young, "Designing medical devices for developing countries", *Medical Design Technology*, [Sep/Oct 2016](#): 8-9, (2016)
10. S.M. Kawano, D.R. Economy, M.S. Kennedy, D. Dean, R.W. Blob, "Comparative limb bone loading in the humerus and femur of the tiger salamander: testing the 'mixed-chain' hypothesis for skeletal safety factors", *Journal of Experimental Biology*, 219(Pt 3): 341-53, (2016)
11. Lance, C.-C. Yang, M. Swamydas, D. Dean, S. Deitch, K. Burg, D. Dreau, "Increased extracellular matrix density decreases MCF10A breast cell acinus formation in 3D culture conditions", *Journal of Tissue Engineering and Regenerative Medicine*, 10(1):71-80, 2016
12. K. Gainey, P. T. Ovington, D. Dean, "A Low-Cost Ink-Jet Printed Glucose Test Strip System for Resource-Poor Settings", *Journal of Diabetes Science and Technology*, 9(6):1275-81, (2015)
13. D Medlin, W Heffron, A Siegel, K Wilson, A Klingenberger, A Gall, M Rusin, D Dean, E Takacs, "Development of an x-ray irradiation port for biomedical applications at the CUEBIT facility", *Journal of Physics: Conference Series*, 583(1): 12048-52, (2015)
14. H. Liu, R. Chen, H. Yang, W. Qin, T.K. Borg, D. Dean, M. Xu, B.Z. Gao, "Enzyme-etching technique to fabricate micropatterns of aligned collagen fibrils", *Biotechnology Letters*, 36(6): 1245-52, (2014)
15. F.P. Rojas, M.A. Batista, C.A. Lindburg, D. Dean, A.J. Grodzinsky, C. Ortiz, L. Han, "Molecular adhesion between cartilage extracellular matrix macromolecules", *Biomacromolecules*, 15(3): 772-780, (2014)
16. B. Faugas, M. Ellison, D. Dean, M. Kennedy, "Surface Characterization of As-spun and Supercontracted Nephila clavipes Dragline Silk", *Journal of Surface Engineered Materials and Advanced Technology*, 3(3A):18-26, (2013)
17. C.A. Lindburg, J. Willey, D. Dean, "Effects of Low Dose X-Ray Irradiation on Porcine Articular Cartilage Explants", *Journal of Orthopedic Research*, 31(11): 1780-5, (2013)
18. H. Tang, S. Biechler, L. Junor, M. J. Yost, D. Dean, J. Li, J. D. Potts, "Fluid flow forces and rhoA regulate fibrous development of the atrioventricular", *Developmental Biology*, 374(2):345-56, (2013)
19. S.T. Wood, B.C. Dean, D. Dean, "A Linear Programming Approach to Reconstructing Subcellular Structures from Confocal Images for Automated Generation of Representative 3D Cellular Models", *Medical Image Analysis*, 17(3): 337-47, (2013)
20. S.T. Wood, B.C. Dean, D. Dean, "A Computational Approach to Understand Phenotypic Structure and Constitutive Mechanics Relationships of Single Cells", *Annals of Biomedical Engineering*, 41(3):630-44, (2013) (*selected as cover)

21. D. Dean, J.D. DesJardins, M. Halsey, K. Harfmann, A. Dicks. T. Youngman “Inside a Porcupine Quill”, *NAUKA iz pervykh ruk (SCIENCE First Hand, in Russian)*, 6 (48): 130-131, (2012).
22. S. Deitch, B.Z. Gao, D. Dean, “Effect of Matrix on Cardiomyocyte Viscoelastic Properties in 2D Culture“, *Molecular and Cellular Biomechanics*, 205(1):1-24, (2012)
23. G. V. White, P. Kerscher, J. Morella, R. Brown, W. McAllister, D. Dean, K.L. Kitchens, “Green Synthesis of Robust, Biocompatible Silver Nanoparticles using Garlic Extract” *Journal of Nanomaterials*, 2012: 730746, 2012.
24. Owczarczak, S. Shuford, S. T. Wood, S. Deitch, D. Dean, "Transient Cell Membrane Pores Using a Standard Inkjet Printer" *Journal of Visualized Experimentation*, 61:e3681, 2012 (*2nd most downloaded JoVE article in 2013)
25. Zimmerman, J. Chow, B. Abbott, M. Ellison, M. Kennedy, D. Dean, “Variation of Surface Charge Along the Surface of Wool Fibers Assessed by High-Resolution Force Spectroscopy”, *Journal of Engineered Fibers and Fabrics*, 6(2): 61-66, (2011)
26. Dean, J. Hemmer, A. Vertegel, M. LaBerge, "Frictional Behavior of Individual Vascular Smooth Muscle Cells Assessed By Lateral Force Microscopy", *Materials*, 3(9): 4668-4680 (2010).
27. X. Cui, D. Dean, Z. M. Ruggeri, T. Boland, “Cell Damage Evaluation of Thermal Inkjet Printed Chinese Hamster Ovary Cells”, *Biotechnology and Bioengineering*, 106(6): 963-9, (2010).
28. B. Zimmerman, L. Datko, S. Alapati, D. Dean, M. Kennedy, “Alteration of Dentin-Enamel Mechanical Properties Due to Dental Whitening”, *Journal of the Mechanical Behavior of Biomedical Materials* 3: 339-346, (2010).
29. J. D. Hemmer, J. Nagatomi, S. T. Wood, A. A. Vertegel, D. Dean, M. LaBerge, “Role of Cytoskeletal Components in Stress Relaxation Behavior of Adherent Vascular Smooth Muscle Cells”, *ASME Journal of Biomechanical Engineering* 131(4):041001 (2009).
30. L. Han, D. Dean, L. A. Daher, A. J. Grodzinsky, C. Ortiz, “Cartilage Aggrecan Can Undergo Self-Adhesion” *Biophysical Journal* (10):4862-4870, (2008)
31. J. D. Hemmer, D. Dean, A. Vertegel, E. Langan, M. LaBerge, “Effects of serum deprivation on the mechanical properties of adherent vascular smooth muscle cells.” *Proceedings of the IMechE Part H: Journal of Engineering in Medicine* **222**(H5): 761-772, (2008)
32. S. Deitch, C. Kunkle, X. Cui, T. Boland, D. Dean, “Collagen Matrix Alignment Using Inkjet Printer Technology.” *Mater. Res. Soc. Symp. Proc.* **1094**: DD07-16, (2008).
33. Han, L., Dean, D., Mao, P., Ortiz, C., Grodzinsky, A. J., “Nanoscale Shear Deformation Mechanisms of Opposing Cartilage Aggrecan Macromolecules” *Biophysical Journal*, 2007 93(5):L23-25, 2007.

34. Han, L., Dean, D., Ortiz, C., Grodzinsky, A. J., "Lateral Nanomechanics of Cartilage Aggrecan Macromolecules", *Biophysical Journal* **92**:1384-1398 (2007)
35. Pirlo, R. K., Dean, D., Knapp, D. R., Gao, B. Z., "Cell Deposition System Based on Laser Guidance", *Biotechnology Journal* **1**(9):1007-13 (2006)
36. Dean, D., Han, L., Grodzinsky, A. J., and Ortiz, C., "Compressive Nanomechanics of Opposing Aggrecan Macromolecules," *Journal of Biomechanics* **39**(14): 2555-2565 (2006)
37. Vandiver, J., Dean, D., Patel, N., Botelho, C., Best, S., Santos, J., Lopes, M., Bonfield, W., and Ortiz, C., "Silicon addition to hydroxyapatite increases nanoscale electrostatic, van der Waals, and adhesive interactions," *Journal of Biomedical Materials Research A* **78A**(2):352-363 (2006).
38. Dean, D., Han, L., Ortiz, C., and Grodzinsky, A. J., "Nanoscale Conformation and Compressibility of Cartilage Aggrecan using Microcontact Printing and Atomic Force Microscopy," *Macromolecules* **38**(10): 4047-4049 (2005)
39. Seog, J., Dean, D., Rolauffs, B., Wu, T., Genzer, J., Plaas, A.H.K., Grodzinsky, A. J., and Ortiz, C. "Nanomechanics of Opposing Glycosaminoglycan Macromolecules," *Journal of Biomechanics*.**38**(9); 1789-1797 (2005)
40. Vandiver, J., Dean, D., Patel, N., Bonfield, W., and Ortiz, C., "Nanoscale Variation in Surface Charge of Synthetic Hydroxyapatite Detected by Chemically and Spatially Specific High Resolution Force Spectroscopy," *Biomaterials*, **26**(3): 271-283 (2005)
41. Fitzgerald, J., Jin, M., Dean, D., Wood, D., Zheng, M., Grodzinsky, A. "Mechanical Compression of Cartilage Explants Induces Multiple Time-Dependent Gene Expression Patterns and Involves Intracellular Calcium and Cyclic AMP," *Journal of Biological Chemistry*, **279**(19): 19502 (2004).
42. Seog, J., Dean, D., Frank, E., Ortiz, C., Grodzinsky, A. "Preparation of End-Grafted Polyelectrolytes On Nanoscale Probe Tips Using An Electric Field," *Macromolecules* **37**(3) 1156-1158 (2004)
43. Rixman, M. A., Dean, D., and Ortiz, C. "Nanoscale Intermolecular Interactions between Human Serum Albumin and Low Grafting Density Surfaces of Poly(ethylene oxide)" *Langmuir* **19** (22); 9357-9372 (2003)
44. Dean, D., Seog, J., Ortiz, C., and Grodzinsky, A.. "Molecular Level Theoretical Model for Electrostatic Interactions Within Polyelectrolyte Brushes Using Glycosaminoglycans as a Model System" *Langmuir*, **19**(13): 5526-5539 (2003)
45. Rixman, M. A., Dean, D., Mathias, C. E., Ortiz, C. "Nanoscale Intermolecular Interactions between Human Serum Albumin and Alkanethiol Self-Assembled Monolayers," *Langmuir*, **19**(15) 6202-6218 (2003)
46. Seog, J., Dean, D., Plaas, A, Wong-Palms, S., Grodzinsky, A., and Ortiz, C., "Direct Measurement of Glycosaminoglycan Intermolecular Interactions via High-Resolution Force Spectroscopy," *Macromolecules*, **35**(14):5601-5615 (2002)

Conference Proceedings (Reviewed)

1. Cash, H., Willey, J., Dean, D., "The Effects of Moderate Gamma Irradiation on Mechanical Properties of Articular Cartilage" 64th Annual Meeting of the Orthopaedics Research Society in New Orleans, LA, March 2018
2. Cash, H., Willey, J., Dean, D., "The Effects of Low Dose Radiation on Porcine Articular Cartilage" 63rd Annual Meeting of the Orthopaedics Research Society in San Diego, CA, March 2017
3. Cash, H., Willey, J., Dean, D., "The Effects of Low Dose Radiation on Articular Cartilage", 62th Annual Meeting of the Orthopaedics Research Society in Orlando, FL, March 2016.
4. Dean, D., "Nanomechanics of Aggrecan", World Biomechanics Congress, July 2014, Boston, MA.
5. Rusin, M., Dean, D., "Effect of X-Ray Radiation on Adult Stem Cell Differentiation", Society for Biomaterials Annual Meeting, April 2014, Denver, CO.
6. Luedicke, N., Burghardt, E., Hodge, J., Barrett, A., Thomas, R., Dean, D., Nagatomi, J., "Novel central venous catheterization simulation for medical training", 29th IEEE Southern Biomedical Engineering Conference (2013).
7. Trent, E. A., Bailey, L., Mefleh, F. N., Raikar, V. P., Shanley, E., Thigpen, C. A., Dean, D. and Kwartowitz, D. M., "Assessment and Characterization of in Situ Rotator Cuff Biomechanics," SPIE Medical Imaging, 86721M, (2013).
8. M. Rusin, Y. Mei, D. Dean, "Adhesion of Vitronectin to Microfabricated Polymer Arrays" Society for Biomaterials, April 2013, Boston, MA.
9. R. Chen, D. Dean, "Mechanical properties of stem cells from different sources during vascular smooth muscle cell differentiation" Society for Biomaterials Annual Meeting, April 2013, Boston, MA
10. Desai, S. Deitch, D. Dean, "Effects of Blocking Cell-Cell and Cell-Matrix Interactions on Cardiac Cell Mechanical Properties" Society for Biomaterials, April 2013, Boston, MA
11. Desai, S. Deitch, D. Dean, "Effects of Substrate Stiffness on Vascular Smooth Muscle Cell Mechanical Properties" Society for Biomaterials, Oct. 2012, New Orleans, LA.
12. R. Chen, D. Dean, "Mechanical Properties of Stem Cells from Different Sources during Vascular Smooth Muscle Cell Differentiation", Society for Biomaterials, Oct. 2012, New Orleans, LA
13. M. Kennedy, G. Chen, J. Sharp, T. Bruce, D. Dean "Response of mice 7F2 osteoblast and porcine dental pulp stem cells to substrate topography" TMS 2012 Annual Meeting - Biological Materials Science Symposium in Orlando, FL, March 2012
14. Farley, L. Datko, M. Kennedy, D. Dean, "Addition of Apatite Microparticles to Cell Cultures- Effects on Differentiation" TMS 2012 Annual Meeting Biological Materials Science Student Poster Contest in Orlando, FL, March 2012 (*Winner of Best Poster Award)

15. C.A. Lindburg, J. Willey, S. Bielby, J. DesJardins, D. Dean, "Effect of X-Ray Irradiation on Porcine Articular Cartilage Using an Explant Model", 58th Annual Meeting of the Orthopaedic Research Society in San Francisco, CA, #1814, Feb. 2012
16. F. Rojas, C.A. Lindburg, D. Dean, A.J. Grodzinsky, C. Ortiz, L. Han, "Molecular Adhesion between Cartilage Extracellular Matrix Constituents", 58th Annual Meeting of the Orthopaedic Research Society in San Francisco, CA, #692, Feb. 2012.
17. S.T. Wood, B.C. Dean, S. Kanetkar, D. Dean, "Structural Modeling of Vascular Smooth Muscle Cell Mechanics using Marc", MSC 2011 Users Conference Technical Papers, 11-046, 24, October 2011 (*Winner of Best University Research Technical Paper Award)
18. L. Datko, M. Cupelli, S. Alapati, M. Kennedy, D. Dean, "Effects of substrate elasticity on human pulp cells" Journal of Dental Research, 90A 1876 , 2011
19. C.A. Lindburg, S. A. Bielby, J. S. Willey, J. D. DesJardins, D. Dean, "Effect of X-Ray Irradiation on Porcine and Murine Cartilage Modulus" Society for Biomaterials Annual Meeting, Orlando, FL, April 14, 2011
20. C-C. Yang, M. Swamydas, D. Dean, S. Deitch, D. Dréau, K. Burg, "Matrix Modulus Influences the Development of Breast Acini and Ducts in 3D Cultures", Society for Biomaterials Annual Meeting, Orlando, FL April 14, 2011.
21. W. McAllister, L. Wiles, P. Kerscher, J. Turbeville, C., Kitchens, D. Dean, "Vascular Smooth Muscle Cell Mechanics in Response to Gold Nanoparticles", Society for Biomaterials Annual Meeting, Orlando, FL, April 14, 2011
22. S. Deitch, D. Dean, "Effects of Cell-Cell and Cell-Matrix Interactions on Vascular Smooth Muscle Cell Mechanical Properties" Society for Biomaterials Annual Meeting, Orlando, FL, April 14, 2011,
23. S. T. Wood, S. Deitch, D. Dean, "Concurrent Visualization and Characterization of Single Cell Mechanical Properties", Society for Biomaterials Annual Meeting, Orlando, FL, April 14, 2011
24. Lindburg, C. A., Elpers, M., Willey, J., Bateman, T, Dean, D., "Effect of Radiation on Articular Cartilage Mechanical Properties", Society for Biomaterials Annual Meeting, Seattle, WA, April 21-24, 2010.
25. McAllister, W., Wiles, L., Drennon, E., Turbeville, J., Kerscher, P., Kitchens, C., Dean, D., "The Effect of Metallic Nanoparticles on Vascular Smooth Muscle Cells" Society for Biomaterials Annual Meeting, Seattle, WA, April 21-24, 2010.
26. Wood, S. T., Dean, B. C., Dean, D., "Towards a Representative Phenotypic Representation of Structural Components of Vascular Smooth Muscle Cells", Society for Biomaterials Annual Meeting, Seattle, WA, April 21-24, 2010.
27. Datko, L. C., Cupelli, M., Kennedy, M., Alapati, S., Dean, D., "The Effects of Microenvironment on the Growth and Differentiation of Human Pulpal-derived Stem Cells", Society for Biomaterials Annual Meeting, Seattle, WA, April 21-24, 2010.

28. Datko, LC, Zimmerman, B, Alapati, S, Kennedy, M., Dean, D. "Mechanical Properties of Human Teeth Subjected to Common Clinical Whitening Agents and Etchants", Society for Biomaterials Annual Meeting, San Antonio, TX, April 22-25, 2009.
29. Hemmer, JD, Wood, ST, J Nagatomi, D Dean, CJ Wright-Walker, M LaBerge, poster. "Effects of OxLDL on the Viscoelastic Properties of Vascular Smooth Muscle Cells." Society for Biomaterials Annual Meeting, San Antonio, TX, April 22-25, 2009.
30. Hemmer, JD, Dean, D, CJ Wright-Walker, M LaBerge. "Frictional Property Measurement of Individual Vascular Smooth Muscle Cells." Society for Biomaterials Annual Meeting, San Antonio, TX, April 22-25, 2009.
31. Dean, D., Vertegel, A., Borg, T, Gao, B.Z., "Effects of substrate composition and structure on the mechanical properties of cardiomyocytes in 2D culture", Annual Meeting of the Society for Biomaterials in Chicago, IL, (Apr. 2007).
32. McRae, J, Dean, D., Borg, T., Gao, B.Z., "Polyacrylamide Gels with Various Stiffness for the Study of the Cardiac Fibroblast Migration", Annual Meeting of the Society for Biomaterials in Chicago, IL, (Apr. 2007).
33. D. Dean, R. Gourdie, T. Borg, L. Dooley, B.Z. Gao. "AFM Investigation of Fibroblast-Fibroblast Interactions on Collagen Substrates" Annual Meeting of the Society for Biomaterials in Pittsburg, PA, (Apr 2006)
34. D. Dean, L. Han, L. Daher, C. Ortiz, A. Grodzinsky. "Cartilage Aggrecan Exhibits a Reduction in Nanoscale Compressibility with Age" 52nd Annual Meeting of the Orthopaedic Research Society in Chicago, IL, (Mar 2006)
35. Han, L., Dean, D., Daher, L., Grodzinsky, A., Ortiz, C. "Biomolecular Adhesive Interactions Between Cartilage Aggrecan Macromolecules" 52nd Annual Meeting of the Orthopaedic Research Society in Chicago, IL, (Mar 2006)
36. Han, L., Dean, D., Daher, L., Grodzinsky, A., Ortiz, C. "Shear Nanomechanics of Opposing Cartilage Aggrecan via Lateral Force Microscopy" 52nd Annual Meeting of the Orthopaedic Research Society in Chicago, IL, (Mar 2006)
37. Dean, D., Han, L., Ortiz, C., Grodzinsky, A. J., "Aggrecan-Aggrecan Interaction Forces Assessed via High Resolution Force Spectroscopy of End-Grafted Macromolecules Compressed Between a Planar Substrate and Probe Tip"; 51st Annual Meeting of the Orthopaedic Research Society in Washington DC, (Feb. 2005)
38. Han, L., Dean, D., Plaas, A. H., Grodzinsky, A. J., Ortiz C., "Lateral Deformability and Nanomechanical Behavior of Cartilage Aggrecan via Lateral Force Microscopy Imaging and Micro-Contact Printing"; 51st Annual Meeting of the Orthopaedic Research Society in Washington DC, (Feb 2005)
39. Dean, D., Ng, L., Seog, J., Ortiz, C., Grodzinsky, A.J., "Measurement of Nano-Mechanical and Electrical Interaction Forces within Intact Aggrecan Molecules Using High Resolution Force Spectroscopy"; 50th Annual Meeting of the Orthopaedic Research Society in San Francisco, CA, (Mar 2004)

40. Dean, D., Seog, J., Ortiz, C. Grodzinsky A. J., “Modeling of Electrostatic Forces between Chondroitin Sulfate GAG Molecules” 48th Annual Meeting of the Orthopaedic Research Society in Dallas, TX. (Feb 2002)
41. Seog, J., Frank, E, Dean, D., Plaas, A, Wong-Palms, S., Grodzinsky, A., Ortiz, C., 48th Annual Meeting of the Orthopaedic Research Society in Dallas, “Measurement of GAG-GAG Nano-Electromechanical Interaction Using High Resolution Force Spectroscopy”; TX. (Feb 2002)
42. Seog, J., Dean, D., Plaas, A., Wong-Palms, S., Lee, I., Laibinis, P, Grodzinsky, A., Ortiz, C., “Cartilage Molecular Mechanics: Detection of GAG Electrostatic Interactions by High-Resolution Force Spectroscopy”; 47th Annual Meeting of the Orthopaedic Research Society in San Francisco, CA. (Feb 2001)

Conference Proceedings (Unreviewed) (Publications not listed in presentation section and based on review of abstract only.)

1. M.J. Been, S. Bradley, D. Medlin, D. Dean, “The Effect of Varying Doses and Sources of Radiation on Endothelial Cells”, Biomedical Engineering Society, Phoenix, AZ, Oct. 2017
2. P. Tharp, S. McKain, J. Kerley, L. Schmidt, D. Dean, “Developing Pressure-Adaptive Shoes”, Biomedical Engineering Society, Phoenix, AZ, Oct. 2017
3. H. Leslie, S. Flannery, M. Copeland, S. Kaul, S. Zoeller, L. Schmidt, M. McCullough, and D. Dean, “The Pressure Pointe: Assessing Forces on Young Dancers’ Feet during Ballet”, Biomedical Engineering Society, Phoenix, AZ, Oct. 2017
4. N. Ghobrial, B. Fellows, O.T. Mefford, D. Dean, “Heparin-Coated Magnetic Nanoparticles Uptake by Fibroblasts and Vascular Cells”, Biomedical Engineering Society, Phoenix, AZ, Oct. 2017
5. G. Hefter, M. Warner, D. Kwartowitz, D. Dean, “Ultrasound Elastography Probe Design for Rotator Cuff Diagnosis”, Biomedical Engineering Society, Phoenix, AZ, Oct. 2017
6. T. Harvey, B. Dean, D. Dean, “Computational Approaches to Understanding Single Cell Structure-Function Relationships”, Biomedical Engineering Society, Phoenix, AZ, Oct. 2017
7. K. Truong, S. Bradley, B. Baginski, E. Takacs, D. Dean, “Effect of Low Dose X-ray Radiation on Cells In Vitro”, Biomedical Engineering Society, Phoenix, AZ, Oct. 2017
8. H. Cash, J. Wiley, D. Dean, “The Effects of Low Dose Radiation on Porcine Articular Cartilage”, Biomedical Engineering Society, Phoenix, AZ, Oct. 2017
9. C. Young, I. DeMass, C. Brewer, R. Gilbert, K. Guion, M. McCullough, J. DesJardins, D. Dean, “Assessment of Medical Equipment in Kisarawe, Tanzania”, Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
10. J. Rohde, A. Cobb, R. Gilbert, Z. Hawks, J. DesJardins, D. Dean, “Development of Low-cost Impedimetric Biosensors for Clinical Diagnostics and Water Testing”, Biomedical Engineering Society, Minneapolis, MN, Oct. 2016

11. M. Navarro, J. Rodriguez Devora, D. Dean, "3D Printed Brain Model Resembling Mechanical Properties of Brain Matter for Preoperative Planning and Practice", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
12. K. Hafner, O. Ross, H. Maeser, J. Catoe, M.S. Kennedy, D. Dean, "Adhesion and Alignment of Stem Cells on Spider Silk Scaffolds after UV Sterilization", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
13. N. Ghobrial, B. Fellows, O. T. Mefford, D. Dean, "Assessing Uptake of Magnetite Nanoparticles by Fibroblasts Using Transmission Electron Microscopy", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
14. A. Desai, R. Peyronnet, P. Kohl, D. Dean, "Atomic Force Microscopy and Carbon Fibre: A Novel Technique to Assess Multidimensional Mechanics of Single Isolated Cardiomyocytes", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
15. D. Montag, K. Hafner, M.S. Kennedy, D. Dean, "Cellular Response to Spider Silk Scaffolds", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
16. T. Harvey, B. Dean, D. Dean, "Estimating Myofibril Distribution in Adult Cardiomyocytes: A Subcellular Min-Cost Flow Problem", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
17. C. Jordan, J. Wilson, S. Slaney, L. Schmidt, V. Raikar, M. McCullough, N. Demore, D. Dean, "Hand-Held Device for the Location of Sentinel Node Biopsy Markers in Breast Cancer Surgery", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
18. K. Truong, S. Bradley, M. Rusin, E. Takacs, D. Dean, "The Cell Response of 7F2 Osteoblasts to Low-Dose Radiation", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
19. H. Cash, J. Wiley, D. Dean, "The Effects of Low Dose Radiation on Articular Cartilage", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
20. H. Leslie, S. Flannery, M. Copeland, S. Kaul, L. Schmidt, M. McCullough, D. Dean, "The Pressure Pointe: Assessing Forces of Dancers' Feet during Ballet", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
21. C. Bocklet, E. Kowal, G. Hefter, M. Marlow, M. Warner, W. Harley, D. Dean, D. Kwartowitz, "Ultrasound Elastography Probe Design for Rotator Cuff Diagnosis", Biomedical Engineering Society, Minneapolis, MN, Oct. 2016
22. K. Truong, S. Bradley, B. Baginski, C. Hellyer, J. Wilson, K. Earle, S. Flannery, M. Rusin, E. Takacs, D. Dean, "The Effect of Very Low Dose X-Ray Radiation on the Proliferation of Fibroblasts", Biomedical Engineering Society Annual Meeting in Tampa, FL, Oct. 2015.
23. A. Desai, R. Peyronnet, P. Kohl, D. Dean, "Characterizing Axial and Longitudinal Mechanics of Individual Cardiomyocytes", Biomedical Engineering Society Annual Meeting in Tampa, FL, Oct. 2015.

24. M. Rusin, E. Takacs, D. Dean, "Adipose Stem Cell Proliferation after Gamma Irradiation", Biomedical Engineering Society Annual Meeting in Tampa FL, Oct. 2015.
25. E. Mappus, B. Fellows, O. T. Mefford, D. Dean, "Magnetic Nanoparticles in the Prevention of Neointimal Hyperplasia", Biomedical Engineering Society Annual Meeting in Tampa, FL, Oct. 2015.
26. J. Rodriguez-Devora, C. Moody, A. Desai, K. Burg, D. Dean, "High-throughput 3D Spheroid Culture using Inkjet Bioprinting", Biomedical Engineering Society Annual Meeting in Tampa, FL, Oct. 2015.
27. W. Harley, E. Kowal, K. Showers, C. Corbett, H. Scruggs, G. Hefter, M. Marlowe, N. Matel, D. Dean, D. Kwartowitz, "Ultrasound Elastography Probe Design for Rotator Cuff Diagnosis" Biomedical Engineering Society Annual Meeting in Tampa, FL, Oct. 2015
28. C. Arthur, A. Stastny, C. Jones, A. Desai, J. Rodriguez-Devora, "Cell Culture on Photovaltaic Surfaces: An Alternative to Trypsinization", Biomedical Engineering Society Annual Meeting in San Antonio, TX, (P-Sat-379), Oct. 2014
29. W. Heffron, R. Wilson, D. Medlin, A. Gall, M. Rusin, D. Dean, E. Takacs, "Development of X-ray Irradiation Port for Biological Material at CUEBIT", Biomedical Engineering Society Annual Meeting in San Antonio, Texas, (P-Sat-297), Oct. 2014
30. B. Kirkland, K. Hafner, M.S. Kennedy, D. Dean, "Do Substrate Cleaning Methods Affect Cellular Response?", Biomedical Engineering Society Annual Meeting in San Antonio, Texas (P-Th-545), Oct. 2014
31. J. Rodriguez-Devora, A. Desai, N. Nosoudi, D. Dean, "Effect of Methylcellulose on Breast Cancer Cellular Spheroid Biomechanics", Biomedical Engineering Society Annual Meeting in San Antonio, Texas (P-Th-312) Oct. 2014
32. K. Gainey, P. T. Ovington, J. DesJardins, D. Dean, "GlucSense: Design of a Low Cost Diabetes Glucometer System", Biomedical Engineering Society (BMES) Annual Meeting in San Antonio, Texas (Global Health Oral Presentation) Oct. 2014
33. R. Chen, D. Dean, "Vascular Smooth Muscle Cell Behavior on Patterned PDMS Substrates", Biomedical Engineering Society Annual Meeting in San Antonio, Texas (Cell Biomechanics Oral Presentation) Oct. 2014
34. D. Dean, J.D. DesJardins, D. Kwartowitz, N. Patzin, V. DeCroes, E. Baskin, N. Cucchi, Roper Mountain Bioengineering Innovation Lab, The Effects of Helmets and Concussions in Athletics, 2013 Southeast/Mid-Atlantic Biomedical Engineering Career Conference, October 25, 2013, Washington DC.
35. K. Gainey, P. T. Ovington, J. Desjardins, D. Dean, "Design of Low Cost Glucometer and InkJet Printed Test Strips", Biomedical Engineering Society Annual Meeting in Seattle, WA (Oct. 2013)

36. T. Youngman, M. Kofoed, D. Martin, A. Metzger, D. Dean, J. Desjardins, "Developing a Woven Grass Neck Brace for Low Resource Implementation", Biomedical Engineering Society Annual Meeting in Seattle, WA (Oct. 2013)
37. A. Barrett, E. Burghardt, J. Hodge, N. Luedicke, R. Thomas, D. Dean, J. Nagatomi, "Novel Central Venous Catheterization Simulation for Medical Training", Biomedical Engineering Society Annual Meeting in Seattle, WA (Oct. 2013)
38. A. Grujicic, R. Yavari, J. Snipes, R. Subrahmanian, M. Grujicic, D. Dean, "A Chemical and Mechanical Model of Vascular Smooth Muscle Tissue", Biomedical Engineering Society Annual Meeting in Seattle, WA, (Oct. 2013)
39. A. Desai, S. Deitch, D. Dean, "Effects of Blocking Cell-Cell and Cell-Matrix Interactions on Mechanical Properties of Cardiomyocytes", Biomedical Engineering Society Annual Meeting in Seattle WA (Oct. 2013)
40. R. Chen, D. Dean, "Mechanical Properties of Bone Marrow and Adipose Stem Cells during Vascular Smooth Muscle Differentiation", Biomedical Engineering Society Annual Meeting in Seattle, WA (Oct. 2013)
41. T. Kieu, W. McAllister, C. Kitchen, D. Dean, "The Effects of Different Size Nanoparticles on the Mechanical Properties of Vascular Smooth Muscle Cells", Biomedical Engineering Society Annual Meeting in Seattle, WA (Oct. 2013)
42. S. R. Cole, D. Dean, C. Kitchens, "Stability and Cytotoxicity of One Step Synthesis Cationic Gold Nanoparticles", Biomedical Engineering Society Annual Meeting in Seattle, WA (Oct. 2013)
43. J. Williams, J. Wilson, K. Nugent, D. Dean, "Effect of X-Ray Dose on Porcine Articular Cartilage", Biomedical Engineering Society Annual Meeting in Seattle, WA (Oct. 2013)
44. H. Scruggs, C. Corbett, A. Cusick, K. Perry, B. Sudduth, H. Cash, K. Showers, M. Hanschke, D. Dean, D. Kwartowitz, "Force Sensor Ultrasound Probe Design for Better Rotator Cuff Injury Diagnosis", Biomedical Engineering Society Annual Meeting in Seattle WA (Oct. 2013)
45. A. Farley, K. Shores, M. Kennedy, D. Dean, "The Effects of Hydroxyapatite and Fluoroapatite on Dental Cell Differentiation", Biomedical Engineering Society Annual Meeting in Seattle WA (Oct. 2013)
46. A. Devon, K. Gainey, H. Adams, J. Desjardins, D. Dean, "Designing Neonatal Monitoring Devices for Resource-Poor Settings", Biomedical Engineering Society Annual Meeting in Seattle WA (Oct. 2013)
47. L. Wiles, S. Langworthy, M. Halsey, J. DesJardins, and D. Dean, "Development of a Low-Cost Blood Glucose Monitoring System for Implementation in Resource-Poor Settings", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
48. M. Rusin, H. Yao, S. Kirkpatrick, C. McCaa, R. Svrluga, J. Khoury, and D. Dean, "Surface Charge Characterization of GCIB-Treated PEEK Surface Using AFM", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)

49. E. A. Trent, C. Thigpen, M. K. Harman, R. Hawkins, D. Dean, and D. M. Kwartowitz, "Towards Ultrasound Elastographic Assessment and Staging of Rotator Cuff Disease", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
50. J. M. Connolly, M. G. Byrd, A. N. Dicks, C. P. Macks, J. G. Turbeville, T. M. Veith 1, D. Dean, and D. M. Kwartowitz "Evaluation of the Impact of Experiential Activities on Student's Choice of Major and Submajor Concentration", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
51. M. Kofoed, K. Keith, J. Nicholas, D. Dean, and J. DesJardins "Medical Equipment Breakdown Survey – Weil Bugando Referral Hospital, Tanzania", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
52. T. Youngman, R. M. Halsey, M. Russell, M. Toney, J. Nicholas, J. DesJardins, and D. Dean, "Assessment of Medical Equipment Failures in Mbeya, Tanzania", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
53. A. Desai, S. Deitch, and D. Dean, "Effects of Cell-Cell and Cell-Matrix Interactions on Vascular Smooth Muscle Cell Mechanical Properties under in vivo Conditions", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
54. A. Lindburg and D. Dean "Release of Glycosaminoglycans in Cartilage Explants Following X-Ray Radiation Exposure", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
55. R. Chen, and D. Dean, "Investigating Mechanical Property Change During Vascular Smooth Muscle Cell Differentiation of Stem Cells from Different Sources", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
56. S. Olang, R. Chen, and D. Dean, "Adipose Stem Cell Differentiation towards Vascular Smooth Muscle Cells", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
57. A. Farley, A. Cusik, M. S. Kennedy, and D. Dean, "The Effect of Hydroxyapatite and Fluoroapatite on Dental Cell Differentiation", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
58. W. Senn, S. Shuford, J. Wood, M. S. Kennedy, and D. Dean, "Effect of Fluid Flow on Dental Pulp Stem Cells in 2D and 3D Culture", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
59. K. Gainey, K. Byrd, J. Wilson, L. Wiles, J. DesJardins, and D. Dean, "Design of Glucose Testing Strips Using Inkjet Printing", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
60. T. Hafner, M. S. Kennedy, and D. Dean, "Response of Dental Pulp Stem Cells to Surface Micropatterning", Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
61. H. Scruggs, A. Cusik, K. Grove, Q. Guo, K. Perry, M. Rogers, D. Kwartowitz, and D. Dean, "Force Sensing on Ultrasound Probe Design for Better Rotator Cuff Injury

- Diagnosis” , Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
62. A. Nguyen, E. Mappus, T. Harvey, B. Peterson, M. O'Kelly, E. Hammes, and D. Dean, “Fibroblasts Solving Mazes in Response to Growth Factor Concentration” , , Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
 63. M. Monterosso, M. Cupelli, M. S. Kennedy, and D. Dean, “Induced Osseous and Odontous Differentiation in Dental Pulp Stem Cells through Static Compression”, Biomedical Engineering Society Annual Meeting in Atlanta GA, (Oct. 24-27, 2012)
 64. A. Farley, L. Datko, M. Kennedy, D. Dean, “Addition of Apatite Microparticle to Cell Cultures- Effects on Differentiation” The Minerals, Metals, and Materials Society (TMS) meeting in Orlando, FL, (2012)
 65. M. Dunphy, K. Grove, M. Townsend, N. Luedicke, E. Burghardt, J. Nagatomi, D. Dean, “Re-Engineering Medical Training Simulators: Central Venous Catheterization Simulator” SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Herndon, VA, (2011)
 66. M. D. Cupelli, D. Dean “Creation of a Novel Compression Chamber for Biomechanical Testing of Dental Pulp Stem Cells”, SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Herndon, VA (2011)
 67. E. D. Mappus, A.K. Nguyen, T.G. Harvey, B.D. Peterson, E.A. Hammes, D. Dean “3T3 Fibroblasts Solving Mazes in Response to Growth Factor Concentration”, SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Herndon, VA (2011)
 68. B. McCaskill, R. M. Halsey, K. Harfmann, A. Dicks, T. Youngman, J. DesJardins, D. Dean “ Designing Medical Technologies for the Developing World” SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Herndon, VA (2011)
 69. P. Gould, T. Hafner, A. Patrick, K. Rye, M. Cupelli, M. Kennedy, D. Dean “Porcine Dental Pulp Cell Response to Micropatterned Substrates”, SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Herndon, VA (2011)
 70. S. Shuford, A. Owczarczak, S.T. Wood, D. Dean, “Incorporation of Fluorescent Actin Monomers in Living Cells using Inkjet Printing for Cellular Biomechanics Studies”, Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
 71. A. Desai, K. Wall, D. Dean, “3T3 Fibroblasts solving mazes in response to growth factor concentration”, Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
 72. T. Harvey, D. Dean, B. C. Dean, “The Effect of nonhomogeneous and anisotropic conductivity properties on the performance of ICA”, Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
 73. R. Halsey, K. Harfmann, E. Nuwass, D. Ellegala, J. Nicholas, J. DesJardins, D. Dean, “Design of an anatomical cervical orthosis testing apparatus and preliminary results”, Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)

74. T. H. Vo, L. Datko, M. Cupelli, D. Dean, "The effect of substrate stiffness without growth factors on the growth and development of rat bone marrow stem cells", Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
75. N. Gilreath, L. Datko, B. Glenn, D. Dean, "Absorption of citrate-coated gold nanoparticles by 3T3 fibroblast cells" Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
76. H. L'Ecuyer, S. Deitch, E. Goldsmith, D. Dean, "Effect of gold nanorods and sample preparation on mechanical properties of porcine heart valves", Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
77. R. Chen, N. Hao, D. Ntarlagiannis, S. Moysey, D. Dean, "Using AFM to assess the effect of microbial activity on soil electrical properties", Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
78. J. Wood, L. Datko, M.S. Kennedy, D. Dean, "Effects of three-dimensional dynamic flow on growth and differentiation of porcine dental pulp stem cells", Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
79. Farley, L. Datko, D. Dean, "The effect of mineral microparticles on dental cell differentiation", Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
80. S. Deitch, D. Dean, "Characterizing mechanical heterogeneity of vascular smooth muscle cells", Biomedical Engineering Society Annual Meeting in Hartford CT, (Oct. 12-16, 2011)
81. W. McAllister, L. Wiles, J. Turbeville, P. Kersher, C. Kitchens, D. Dean, "The Effect of Metallic Nanoparticles on Vascular Smooth Muscle Cell Mechanics" Biomedical Engineering Society Annual meeting in Austin, TX, (Oct. 6-9th, 2010)
82. S. Deitch, D. Dean, "Incorporating Cellular Mechanical Heterogeneity in a Multicellular Mechanical Model ", Biomedical Engineering Society Annual meeting in Austin, TX, (Oct. 6-9th, 2010)
83. L. Datko, M. Cupelli, S. Alapati, D. Dean, "The effects of microenvironment on the growth and differentiation of human pulp-derived stem cells" Biomedical Engineering Society Annual Meeting in Austin, TX, (Oct. 6th-9th, 2010).
84. S. T. Wood, B. C. Dean, D. Dean, "Influence of Subcellular Structures on Single Vascular Smooth Muscle Cell Mechanics" Biomedical Engineering Society Annual Meeting in Austin, TX, (Oct. 6th-9th, 2010).
85. A. Lindburg, J. Wiley, T. Bateman, D. Dean, "The Effect of Radiation on Articular Cartilage Using a Murine Model" Biomedical Engineering Society Annual Meeting in Austin, TX (Oct. 6-9th, 2010).
86. S. Biechler, J. Moraveji, J. Weidner, R. Goodwin, D. Dean, A. Kheradvar, "Determination of Atrioventricular Cushion Material Properties in a Developing Chick Embryo" Biomedical Engineering Society Annual Meeting in Austin, TX (Oct. 6-9th, 2010).

87. T. Harvey, B. C. Dean, D. Dean, "Constructing a realistic brain phantom to validate the Independent Component Analysis of EEG Data", Biomedical Engineering Society Annual meeting in Austin, TX (Oct. 6-9th, 2010)
88. L. Ikononov, W. McAllister, D. Dean, "Direct Measurements of Nanoparticle and Cell Interactions using Atomic Force Microscopy", Biomedical Engineering Society Annual meeting in Austin, TX (Oct. 6-9th, 2010)
89. H. Roberts, C. A. Lindburg, D. Dean "Effect of X-Ray on Porcine Articular Cartilage Biomechanics" Biomedical Engineering Society Annual meeting in Austin, TX, (Oct. 6-9th, 2010)
90. M. Toney, C. A. Lindburg, D. Dean, "Mechanical Properties of Mesenchymal Cells during Vascular Smooth Muscle Cell Differentiation" Biomedical Engineering Society Annual meeting in Austin, TX (Oct. 6-9th, 2010).
91. L. C. Datko, M. Cupelli, S. Alapati, M. S. Kennedy, D. Dean "Effects of microenvironment on the growth and differentiation of human pulpal-derived stem cells." SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC, (2010)
92. M. Dunphy, G. Fercana, K. Grove, M. Townsend, E. Tumblin, D. Dean, J. Nagatomi "Re-engineering Medical Training Simulators", SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (2010) * Won 3rd place poster competition
93. Will McAllister, Laura Wiles, Petra Kerscher, Chris Kitchens, Delphine Dean, "The Effect of Metallic Nanoparticles on Vascular Smooth Muscle Cells" SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC, (2010)
94. R. Chen, N. Hao, S. Moysey, D. Dean, "Analyzing microbial activity by obtaining surface roughness and electrical properties with the help of AFM" SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (2010)
95. M. Byrd, J. Connolly, N. Horrall, T. E. Laird, F. Mefleh, A. Owczarcza, J. Turbeville, D. Kwartowitz, D. Dean, "Creative Inquiry: Applications of Robotics in Bioengineering" SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (2010)
96. A. Lindburg, S. A. Bielby, J. S. Willey, J. D. DesJardins, D. Dean "Effect of Radiation on Articular Cartilage Biomechanics" SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (2010)
97. Desai, A. Nguyen, K. Miller, L. Miller, D. Dean, "Effects of growth factor concentration gradients on cells in culture" SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (2010)
98. J. Alaimo, K. McCall, D. Dean, "Electrical Properties of Collagen Gel with Embedded Covalently Attached Gold" SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (2010)

99. M. Elpers, B. McCaskill, L. Sosdian, D. Dean “Low-Cost Temperature Control Alarm Systems Designed for Application in Third World Countries” SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (2010)
100. Margo M. Toney, C. Alex Lindburg, Delphine M. Dean “Single Cell Mechanical Properties during Smooth Muscle Cell Differentiation” SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (2010)
101. S. B. Deitch, D. Dean, “Understanding Cellular Mechanical Heterogeneity and Incorporating it in a Multicellular Model”, SouthEast Biomedical Engineering Career Conference (SEBECC) meeting in Clemson, SC (Oct. 2010)
102. Deitch, S., Gao, B.Z., Dean, D., “Effect of Substrate Composition and Organization on Cultured Cardiomyocyte Viscoelastic Properties.”, Materials Research Society Fall Meeting in Boston, MA (Dec. 2009)
103. Turbeville, J., Kerscher, P., Kitchens, C., Dean, D., “The Effect of Nanoparticles on Bone Marrow Stem Cell Proliferation”, Southeast Biomedical Engineering Career Conference in Washington DC (Oct. 2009)
104. Desai, A., Miller, L., Taylor, C., Sun, S., Dean, D., “Effect of Nerve Growth Factor Concentration on Cells in Culture” Southeast Biomedical Engineering Career Conference in Washington DC (Oct. 2009)
105. Wiles, L., Drennon, E., Kerscher, P., Kitchens, C., Dean, D., “Effects of Metallic Nanoparticles on Vascular Smooth Muscle Cell Structure and Mechanics”, Southeast Biomedical Engineering Career Conference in Washington DC (Oct. 2009)
106. Taylor, C., Riemer, M., Dong, C., Dean, D., Sun, S., “Mathematical Modeling of Neurite Growth”, Southeast Biomedical Engineering Career Conference in Washington DC (Oct. 2009)
107. Chow, J., Dean, D., “Nanotextured Surfaces for Cell Culture Studies” Southeast Biomedical Engineering Career Conference in Washington DC (Oct. 2009)
108. Wood, S.T., Hemmer, J., Dean, B., Dean, D., “Structural Modeling of Vascular Smooth Muscle Cell Mechanics” Biomedical Engineering Society Annual Meeting in Pittsburgh, PA (Oct. 2009)
109. Cupelli, M., Datko, L., Alapati, S., Dean, D., “Effect of Microenvironment on Differentiation of Dental Pulp Cells” Biomedical Engineering Society Annual Meeting in Pittsburgh, PA (Oct. 2009)
110. Drennon, E., Wiles, L., Turbeville, J., Kerscher, P., Kitchens, C., Dean, D., “The Effect of Metallic Nanoparticles on Vascular Smooth Muscle Cells” Biomedical Engineering Society Annual Meeting in Pittsburgh, PA (Oct. 2009)
111. Riemer, M.J., Taylor, C.J., Dong, C.J., Sun, S.J., Dean, D., “Mathematical Modeling of Neurite Growth” Biomedical Engineering Society Annual Meeting in Pittsburgh, PA (Oct. 2009)

112. Datko, L, Cupelli, M., Alapati, S., Dean, D., “The Effects of Substrate Properties on the Growth and Differentiation of Human Pulpal-Derived Stem Cells” Biomedical Engineering Society Annual Meeting in Pittsburgh, PA (Oct. 2009)
113. Deitch, S., LaBerge, M., Dean, D., “Effects of Cell-Cell and Cell-Matrix Interaction on the Mechanical Heterogeneity of Vascular Smooth Muscle Cells” Biomedical Engineering Society Annual Meeting in Pittsburgh, PA (Oct. 2009)
114. Ross, Q., Elpers, M., Livingston, E., Bateman, T., Sosdian, L, Kennedy, M., Dean, D., “Effect of Space Radiation on Bone Mechanics” Biomedical Engineering Society Annual Meeting in Pittsburgh, PA (Oct. 2009)
115. Alaimo, J., Marshall, A., Peay, C., Dean, D., “Electrical Conductivity of Hydrogels with Gold Nanoparticles”, Materials Research Society Fall Meeting in Boston, MA (Dec. 2008)
116. Kelly, C., Datko, L., McAllister, W., Alapati, S., Kennedy, M., Dean, D., “Modeling the Effect of Drill-Bit Generated Heat on Human Teeth”, Biomedical Engineering Society Annual Meeting in St. Louis, MO (Oct. 2008)
117. Datko, L., Zimmerman, B., Alapati, S., Kennedy, M., Dean, D., “ Mechanical Properties of Human Teeth Subjected to Common Clinical Whitening Agents and Etchants” Biomedical Engineering Society Annual Meeting in St. Louis, MO (Oct. 2008)
118. McAllister, W., Dean, D., Kennedy, M., “Depositing Hydroxyapatite to Create Synthetic Dental Tissue”, Biomedical Engineering Society Annual Meeting in St. Louis, MO (Oct. 2008)
119. Peay, C., Alaimo, J., Marshall, A., Dean, D., “Increasing Alginate Gel Electrical Conductivity with Gold Nanoparticles” Biomedical Engineering Society Annual Meeting in St. Louis, MO (Oct. 2008)
120. Wood, S.T., Hemmer, J., Dabney, J., Dean, B., Dean, D., “Quantifying Vascular Smooth Muscle Cell Cytoskeletal Structure from Confocal Microscopy”, Biomedical Engineering Society Annual Meeting in St. Louis, MO (Oct. 2008)
121. Deitch, S., Gao, B.Z., Dean, D., “Effect of Matrix on Cardiomyocyte Viscoelastic Properties in 2D Culture”, Biomedical Engineering Society Annual Meeting in St. Louis, MO (Oct. 2008)
122. Alaimo, J., Marshall, A., Dean, D., “Electrical Conductance of Collagen Gels with Gold Nanoparticles”, Biomedical Engineering Society Annual Meeting in St. Louis, MO (Oct. 2008)
123. Deitch, S., Kunkle, C., Cui, X., Boland, T., Dean, D., “Collagen Matrix Alignment Using Inkjet Printing”, Materials Research Society Spring Meeting in San Francisco, CA. (Mar. 2008)
124. Wood, S., Hemmer, J., Dabney, J., Dean, B., LaBerge, M., Dean, D., “Modeling of Vascular Smooth Muscle Cell Mechanics”, Materials Research Society Spring Meeting in San Francisco, CA. (Mar. 2008)

125. McRae, J. A., Liu, H., Dean, D., Li, G., Borg, T., Gao, B. Z., “Analysis of Force on the Function of Mechanically Coupled Fibroblasts and Myocytes”, Biomedical Engineering Society Annual Meeting in Los Angeles, CA (Oct. 2007)
126. Han, L., Dean, D., Hung, H.-H.K, Sandy, J.D., Ortiz, C., Grodzinsky, A.J., “Effect of m-Calpain Degradation on Cartilage Aggrecan Nanomechanical Properties.” Materials Research Society Fall Meeting in Boston, MA (Nov. 2006)
127. Han, L., Dean, D., Grodzinsky, A. J., Ortiz, C., “Lateral Nanomechanics of Cartilage Aggrecan via Microcontact Printing and Atomic Force Microscopy” Materials Research Society Meeting Fall Meeting in Boston, MA (Dec. 2005)
128. Ye, M., Dean, D., Ortiz, C., “Nanomechanics of Stimulus-Responsive End-Grafted Layers of Poly(methacrylic acid-g-ethylene glycol).” Materials Research Society Fall Meeting in Boston, MA (Nov. 2005)
129. Vandiver, J., Dean, D., Patel, N., Botelho, C., Lopes, M.A., Best, S., Bonfield, W., Ortiz, C., “Nanoscale Mapping of Electrostatic and van der Waals Interactions on Silicon-Substituted Hydroxyapatite.” Materials Research Society Fall Meeting in Boston, MA (Nov. 2005)
130. Grodzinsky, A.J, Dean, D., Ng, L., Han, L, Ortiz, C., “Nanomechanics and Mechanobiology of Cartilage Biopolymeric Networks and Macromolecules.” Materials Research Society Fall Meeting in Boston Ma (Nov. 2005)
131. Ortiz, C., Dean, D., Han, L., Grodzinsky, A.J., “Normal and Lateral Nanomechanics of Cartilage Aggrecan Macromolecules.” Materials Research Society Spring Meeting (Mar. 2005)
132. Han, L., Dean, D., Grodzinsky, A. J., Ortiz, C., “Lateral and Compressive Imaging of Cartilage Aggrecan via Atomic Force Microscopy as a Function of Ionic Strength” Materials Research Society Meeting Fall Meeting in Boston, MA (Dec. 2004)

Other Scholarly Publications

Dean, D. “Modeling and Measurement of Intermolecular Interaction Forces between Cartilage ECM Macromolecules”, Ph.D. Thesis, M.I.T. (2005).

Dean, D. “Molecular Electromechanics: Modeling Electrostatic Forces Between Glycosaminoglycan Molecules”, Master’s Thesis, M.I.T. (2001).

PRESENTATIONS

Dean, D., “Robotics and Bioengineering: MindBot”, SC Chamber of Commerce, 4th Annual Manufacturer’s Conference, Charleston, SC (Feb. 27, 2014)

Dean, D., “Engineering and Computing (or how to use math and science to help people)”, Chris Church Episcopal Middle School, Greenville, SC (Jan. 6, 2014)

- Dean, D., “Nano and Micro Aspects of Cell and Tissue Mechanics”, BIOMED Seminar, School of Biomedical Engineering, Science and Health System, Drexel University, Philadelphia, PA (Dec. 6, 2013)
- Dean, D., “Bioengineering: Teeth, Robots, Medical Devices, Meeting Heads of State, and Other Adventures”, SC Junior Academy of Science Fall Workshop, (Nov. 2013)
- Dean, D., “Getting the Most Out of Your Clemson Experience”, Freshmen Convocation, Littlejohn Coliseum, Clemson University (Aug. 19, 2013)
- Dean, D., “Helping Improve Hospitals in Tanzania – Engineering medical equipment of developing countries”, 2013 Global Marathon of E-Week symposium, (Mar. 8, 2013)
- Dean, D., “Bioengineering in Tanzania: Challenges and Opportunities”, Department of Biomedical Engineering Seminar, Duke University, (Feb. 11, 2013)
- Dean, D., “Getting the Most Out of Your Clemson Experience”, Freshmen Convocation, Littlejohn Coliseum, Clemson University (Aug. 20, 2012)
- Dean, D., “Undergraduate Research to Solve Biomedical Problems”, Math Excellence Workshop, Clemson University (July 23, 2012)
- Dean, D., “Biomedical Engineering Across Length-Scales”, INBRE Summer Research Program, Winthrop University (June 11, 2012)
- Dean, D., “Creative Inquiry Approaches for Solving Biomedical Technology Problems”, Clemson Creative Inquiry Research Symposium Plenary Speaker (April 10, 2012)
- Dean, D., “Nano and Micromechanics of Biomedical Systems”, Nano@Tech Seminar Series, Georgia Institute of Technology (March 13, 2012)
- Dean, D., “Atomic Force Microscopy”, Characterization Workshop for I SEE Science REU program, Clemson University (July, 2011)
- Dean, D., “Mechanics of Biological Tissues Across Length-Scales”, Biological Sciences Seminar series, Biological Sciences, Clemson University (April 16, 2010)
- Dean, D., “Using AFM to Probe the Mechanics of Biological Tissues”, Invited seminar at Agilent Technologies, Santa Clara, CA (Dec. 22, 2009)
- Dean, D., “Nano and Micromechanics of Biological Tissues”, Cardiovascular Development and Disease Seminar series, Cell Biology and Anatomy, School of Medicine, University of South Carolina (Nov. 12, 2009)
- Dean, D., “Nanoparticles and Cells”, Clemson Nanomaterials Group Seminar Clemson University (Nov.6, 2009)
- Dean, D., “Bioengineering and Nanotechnology”, SPRI Seminar Series, Clemson University (June 18, 2009)

- Dean, D., “Nano and Micromechanics of Biological Tissues”, Medical University of South Carolina (April 27, 2009)
- Dean, D., “Nano and Micromechanics of Biological Tissues”, SC Academy of Sciences Bioengineering Symposium, Columbia, SC (Apr. 15, 2009)
- Dean, D., “Nano and Micromechanics of Biological Tissues”, Chemical and Biomolecular Engineering Seminar, Clemson University (Feb. 12, 2009)
- Dean, D., “Nano and Micromechanics of Biological Tissues”, M&AE Departmental Colloquium, Cornell University, Ithaca NY (Nov. 4, 2008)
- Dean, D., “Effects of substrate composition and structure on the mechanical properties of cardiomyocytes” Bioinformatics Research Symposium, Clemson University (Jan. 19, 2007)
- Dean, D., McRae, J. A., Mitchell, P. O., Dooley, L., Gao, B. Z., poster: “AFM Assessment of Collagen in Laser-Patterned Fibroblast Culture”, Symposium on Nanoscale Science & Engineering, UNC Charlotte, Charlotte, NC, (Oct. 24, 2005)
- Dean, D., Han, L., Daher, L., Ortiz C., Grodzinsky. A., poster: “Nanoscale Interactions between Aggrecan from Bovine Fetal Epiphyseal and Mature Nasal Cartilage” Materials Research Society Meeting, Boston, MA, (Dec. 2005)
- Dean, D., Han, L., Ortiz, C., Grodzinsky, A. J. “Normal Nanomechanical and Electrical Interaction Forces between Opposing Cartilage Aggrecan Macromolecules”; Materials Research Society Meeting in Boston, MA, (Dec. 2004)
- Dean, D., “Nanomechanics of Cartilage Proteoglycan Biomacromolecules”, Materials Research Society Meeting in Boston, MA (Graduate student award winner presentation Dec. 2004)
- Dean, D., Ng, L., Seog, J., Ortiz, C., Grodzinsky, A. J. invited poster: “Measurement of Interaction Forces within Intact Aggrecan Molecules using High Resolution Force Spectroscopy”; Whitaker Foundation Biomedical Engineering Research Conference in San Diego, CA, (Aug 2004)
- Dean, D., Seog, J., Ortiz, C., Grodzinsky, A. J., poster: “Modeling Electrostatic Forces between Molecules of Polyelectrolyte Brushes”; American Physical Society Meeting in Austin, TX. (Mar 2003).
- Dean, D., Seog, J., Ortiz, C., Grodzinsky, A. J., poster: “Modeling of Electrostatic Forces between Glycosaminoglycan Molecules” American Chemical Society Meeting in Boston, MA. (Aug 2002).
- Dean, D., Seog, J., Ortiz, C., Grodzinsky, A. J., poster: “Modeling of Electrostatic Forces between Glycosaminoglycan Molecules” American Physical Society Meeting in Indianapolis, IN. (Mar 2002).

Dean, D., “Nanomechanics of Cartilage Proteoglycan Biomacromolecules”,
Materials Research Society Meeting in Boston, MA (Graduate student
award winner presentation Dec. 2004)

Dean, D., Ng, L., Seog, J., Ortiz, C., Grodzinsky, A. J. invited poster:
“Measurement of Interaction Forces within Intact Aggrecan Molecules
using High Resolution Force Spectroscopy”; Whitaker Foundation
Biomedical Engineering Research Conference in San Diego, CA, (Aug
2004)

PATENTS

1. Patent Awarded, US20140094701, “Devices that Cooperate with Ultrasound Probes for Musculoskeletal Evaluations and Related Systems and Methods”, D. Kwartowitz, E. Trent, F. Mefleh, V. Raikar, D. Dean, 2014
2. Patent filed, “Low Cost Glucose Monitoring System and Method of Use”, D. Dean, K. Gainey, P.T. Ovington, L. Wiles, K. Harfmann, and R. M. Halsey, US Patent Application No.: 14/709,700, 2015.
3. Patent filed, , "Titanium Clip Detectors and Methods of Detection", D. Dean, N. Demore, S. Stanley, J.R. Wilson III, C. Jordan, M. McCullough, Provisional Patent Application No.: 62/379,883, 2016
4. SC LaunchPad Entrepreneur Competition finalist for MedUSim’s CLiVE, a medical training simulator device. MedUSim consists of faculty members (D. Dean and J. Nagatomi) and undergraduate students (G. Fercana, S. Becker, M. Townsend, E. Tumblin, M. Dunphy, K. Grove). SC LaunchPad is a state-wide competition open to anyone in the state of South Carolina. The top 10 finalists presented on Dec. 2010.
5. Co-Founder of Accessible Diagnostics LLC. Company founded in Oct. 2014 focusing on low-cost diagnostic devices.

HONORS AND AWARDS

Member of NIH NHLBI Mentored Transition to Independence (MTI) study section, (2018-2022)
Esin Gulari Leadership and Service Award (2018)
Clemson President’s Leadership Institute, (2016)
Award of Distinction from Clemson National Scholars Program, (2013, 2018)
Murray Stokely Award for Excellence in Teaching from Clemson College Engineering and Science, (2012)
Honoris Causa from Clemson University Circle of Omicron Delta Kappa, (2012)
Outstanding Academic Faculty Award from the President’s Commission on the Status of Women, Clemson University, (2012)
Best University Research Technical Paper Award at the MSC Users Conference, (2011)

Phil and Mary Bradley Award for Mentoring in Creative Inquiry,
Clemson University, (2011)
NSF Travel Fellowship for Mechanics of Soft Materials Course (2010)
Favorite Clemson University Undergraduate Research Advisor, Clemson
Undergraduate Bioengineering Class (2009)
NSF Travel Fellowship for Multiscale Science Based Modeling Course
(2009)
BMES Poster Award, Biomedical Engineering Society (2006)
Graduate Student Gold Award, Materials Research Society (2004)
New Investigator Research Award Finalist, Orthopaedic Research
Society (2004)
Graduate Fellowship, Whitaker Foundation (accepted, 2001)
Graduate Fellowship, National Science Foundation (declined, 2001)
MIT Bioengineering, Undergraduate Research Award (1999)

SPONSORED RESEARCH

Current:

- “Impact of Integrated HIV/NCD Screening on HIV Testing Uptake and Engagement in HIV Care: an RCT in Kisarawe, Tanzania”, NIH NIMH 1 R01 MH111366, co-PI (PI: M Sweat, \$3,100,000), (2016-2021)
- “CAREER: Hierarchical Mechanical Models of Cell Constructs”, NSF CBET 1254609, PI (\$400,000), (2013-2018)
- “NSF-ERC Research Opportunities in Europe for NSF CAREER Awardees”, NSF, PI (\$18,000), (2015-2016) (supplement to NSF CAREER grant to do sabbatical in UK)
- “REU Site: Interfaces and Surfaces” NSF DMR 1460863, co-Inv, (PI: Marian Kennedy, \$220,000), (2015-2018)
- “Composite Materials for Contact Sports Helmets”, Industry contract, (PI: DesJardins, \$80,518) (2013-2015)

Past:

- “TIGER: Collaborative medical technology development for Tanzania”, Clemson College of Engineering and Science, PI, \$20,000 (2015)
- “TIGER: Clemson Research Center for Advanced Radiation Therapy Environments”, Clemson College of Engineering Science, co-PI, \$20,000 (2015)
- “REU Site: Interfaces and Surfaces: Exploring and Experiencing Science (I SEE Science)” NSF, co-Inv, (PI: Marian Kennedy, \$109,971), (2011-2014)
- “Towards Development of an Image-Based Protocol for the Detection and Staging of Rotator Cuff Injury”, (PI: Kwartowitz, \$56, 251) (2013-2015)
- “IDeA Networks of Biomedical Research Excellence”, NIH 5 P20 RR-016461 and 8 P20 GM-103499, co-inv (PI: Pirisi-Creek, \$3,178,801) (2010-2015)
- “Cardiac-Cell Mechanics at the Single-Cell Level: Properties and Interactions”, NIH NHLBI K25, PI (\$827,036), (2009-2014)
- “2009 Research Infrastructure Improvement Grant”, NSF 0903795, co-Inv (PI: Nagarkatti, \$12,000,000), (2008-2013)

- “Student Enrichment Experiences in Tanzania: Assessing Medical Technology Needs in the Developing World”, Bill and Melinda Gates Foundation, PI (\$40,000) (2012-2013)
- “Quantifying Microbe-mineral Interactions Leading to Remotely Detectable Induced Polarization Signals: Implications for Monitoring Bioremediation” DOE, co-PI (PI S. Moysey, \$96,543), (2011-2013)
- “Understanding the Effect of Ionizing Radiation on Articular Cartilage Biomechanics”, NASA SC Space Grant Consortium, PI (\$22,000), (2012)
- “Using Gold Nanorods to Modify the Extracellular Matrix and Mechanical Properties of Cardiac Valves” NIH NHLBI R21, Co-PI (PI: E. Goldsmith, \$275,000), (2009-2012)
- “Quantifying the Effect of Radiation on Adult Articular Cartilage Tissue Function and Mechanics”, NASA SC Space Grant Consortium, PI (\$22,000), (2011)
- “Integrated Biomedical Science and Engineering Undergraduate Research”, NIH DHHS, Co-Inv (PI: L. Dooley, ~\$100,000), (2009-2010)
- “Effect of Space Flight on Articular Cartilage”, NASA SC Space Grant Consortium REAP, PI (\$30,000), (2009-2010)
- “MRI Acquisition of a Nano- to Microscale 3D Imaging System for Biomedical Research and Education”, NSF Major Research Instrumentation, Co-Inv (PI: J. Nagatomi, \$292,680) (2009-2010)
- “Palmetto Academy: Effect of Radiation on Cartilage Biomechanics”, NASA SC Space Grant Consortium, PI (\$22,000), (2010)
- “Effect of Radiation on the Biomechanics of Cartilage Tissue”, NASA SC Space Grant Consortium Palmetto Academy, PI (\$16,000), (2009)
- “E-friendly Low Shrink Wool Fiber” KentWool Inc., Co-Inv (PI: M. Ellison, \$229,851) (2008-2009)
- “Summer Space Biomedical Research (SSBR) Program” NASA SC Space Grant Consortium, Co-Inv (\$45,000) (2009)
- “Modeling the Mechanical Property Effects of Space-Flight Induced Bone Remodeling”, NASA SC Space Grant Consortium, PI (\$16,000) (2009)
- “Band Excitation PFM Imaging of Articular Cartilage Tissue” Oak Ridge National Laboratory’s Center for Nanophase Materials Sciences (CNMS) User Nanoscience Research Program, PI (2008-2009)
- “Electrically conductive biodegradable gel and nanoparticle composites for nerve repair”, Clemson University Research Grant Committee, PI, \$10,000 (2008)
- “A novel approach for guided regeneration of dental pulp cells and their role in deposition of mineralized hard tissue (dentin)”, MUSC dental school NIH-COBRE grant, consultant, \$50,000, (\$10,000) (2007-2008)

POSTDOCTORAL ADVISING

Research Faculty

Champaigne, Kevin July 2014- present

Wilson, Kayla January 2017- August 2017

Postdoctoral Researchers

Rodriguez, Jorge July 2013- 2015

Olsen, Shawn August 2012- June 2013

Wood, Scott T. January 2012- September 2012

GRADUATE STUDENT ADVISING

Doctoral Graduates

Wilson, Kayla (PhD) “Diabetes in Low-Resource Settings: Novel Methods for Detection and Daily Monitoring”, (Dec. 2016)

Rusin, Matthew (PhD) “Impact of Ionizing Radiation Dose and Dose Rate on Adipose Stem Cell Function”, (Aug. 2016)

Desai, Aesha (PhD) “Manipulating Cardiovascular Cellular Interactions and Mechanics: A Multidimensional and Multimodal Approach”, (May 2016)

Chen, Ruikai, (PhD) “Investigating the Effects of Biochemical and Biophysical Signals on Vascular Smooth Muscle Cell Differentiation” (December 2014)

Deitch, Sandra, (PhD) “Characterizing Mechanical Heterogeneity in Cardiovascular Cells” (December 2011)

Wood, Scott T. (PhD) “Computational Approaches to Understand Phenotypic Structure and Constitutive Mechanics Relationships of Single Cells” (December 2011)

Masters Graduates

Hafner, Katherine (M.S.) “Evaluating Stem Cell Response to a Spider Silk Scaffold” (May 2017)

Navarro, Miriam (M.S.) “Development of a Tissue-Mimicking Brain Phantom for Neurosurgical Pre-Operative Planning and Training” (Dec 2016)

Robson, Megan (M.S) “An Investigation Into The Effects Of Low-Dose Gamma Radiation On Porcine Digital Flexor Tendons” (May 2016)

Mappus, Elliott (MS) “Magnetic Nanoparticles in the Prevention of Neointimal Hyperplasia” (May 2015)

Loper, Leanne (MS) “Analyzing User Acceptance of Mobile Technology in Clinical Settings through Point-Of-Care Mobile Applications” (May 2015)

King, Austin (MS) “The Effect of Gold Nanoparticle Size on the Mechanical Properties of Human Umbilical Vein Endothelial Cells”, (Aug. 2014)

Hammers, Jacob (MS) “Digital Image Processing for Ultrasonic Therapy and Tendinous Injury”, (May 2014)

Kieu, Tri (MS) “The Effects of Different Size Gold Nanoparticles on Mechanical Properties of Vascular Smooth Muscle Cells under Mechanical Conditions”, (Dec. 2013)

Lindburg, Carl Alex (MS) “The Effects of Low Dose Ionizing Radiation Exposure on the Metabolic and Mechanical Properties of Articular Cartilage”, (Dec. 2012)

McCaskill, Britton (MS) “Effects of Physiological Dynamic Compression Loading on Gold Nanoparticle Permeation of Articular Cartilage,” (Aug. 2012)

Cupelli, Matthew, (MS) “Effects of Different Microenvironmental Conditions on the Growth and Differentiation of Dental Pulp Stem Cells,” (May 2012)

Shuford, Stephen, (MS) “Internalization of Actin Monomers into 3T3 Fibroblasts via Thermal Inkjet Printing for Investigation of Cytoskeleton Incorporation and Mechanics,” (May 2012)

L’Ecuyer, Heather (MS) “The Effects of Coated Gold Nanorods on Porcine Atrioventricular Valve Tissues Using Atomic Force Microscopy,” (May 2012).

Datko, Laura, (MS) “Effects of Microenvironment on Growth and Differentiation of Human Dental Pulp Cells,” (May 2011). (NSF Graduate Student Research Fellowship Recipient)

McAllister, William (MS) “Vascular Smooth Muscle Cells in Response to Gold Nanoparticles” (May 2011)

Current Graduate Advising

Harvey, Tyler (Ph.D.) (Aug 2018)

Cash, Hannah (Ph.D.) (May 2019)

Gohbrial, Nardine (Ph.D.) (Dec. 2020)

McCullough, Melissa (Ph.D.) (May 2022)

Bradley, Suzanne (MS) (May 2018)

Wells, Jared (MS) (May 2018)

Slaney, Scott (MS) (May 2019)

TEACHING

Courses Taught

BioE 370, Bioinstrumentation and Bioimaging, (Spring and Fall) F07-F15, S17-F17

BioE 451 (section 3), Creative Inquiry on Redesigning Medical Simulators, S08, F08, S09, F09, S10, F10, S11, F11, S12, F12, S13, F13, S14

BioE 451 (section 4), Creative Inquiry on Modeling Neuron Outgrowth/Can Cells Solve Mazes?, S09, F09, S10, F10, S11, F11, S12, F12, S13, F13, S14

BioE451 (section 5), Creative Inquiry on Robotics and Bioengineering, F10, S11, F11, S12, F12, S13, F13, S14

BioE451 (section 10), Creative Inquiry on Designing Medical Technology for the Developing World, S11, F11, S12, F12, S13, F13, S14

BioE451 (section 12), Creative Inquiry on Rotator Cuff Injury Diagnosis and Treatment, F11, S12, F12, S13, F13, S14

BioE451 (section 13), Creative Inquiry on Pulp Cells for Dental Tissue Regeneration, F11, S12, F12, S13, F13, S14

BioE451 (section 15), Roper Mountain Science Center, S13, F13, S14

BioE451 (section 20), Mapping Amino Acids on Protein Surfaces, F13, S14

BioE451 (section 21), Hands On Tissue Engineering, F13, S14

BioE451 (section 24), Engineering for Modern Healthcare, S14

BioE451 (section 25), Generation and Characterization of Radiation for Biomedical Applications, S14

BioE 450/BioEH450, Undergraduate Research in Bioengineering, S08, F08, S09, F09, S10, F10, S11, F11, S12, F12

BioE 461, Nanotechnology and Biomaterials, Su08

Engr 190, Special Project in Engineering I, Su08, Su09, Su10, Su11, Su12

MS&E 491, Undergraduate Research, F08, S09, F09

BioE850, Introduction to Bioinstrumentation, F10, S11, F11, S12

BioE850, Mentoring Undergraduate Teams, S11, F11, S12, F12, S13, F13, S14

Workshops and Seminars

Seminars on Introduction to Bioengineering for High School Students for visiting high school groups S10, F10, S11, S12

Workshop on Atomic Force Microscopy for Summer REU students, Su11, Su12

Workshop on “Cell Culture for non-Bio Engineers and Scientists” for students and faculty Su 10, Su11, Su12

Seminar on “What is Bioengineering?” for Middle School Students, presented at Edwards Middle School S10

Demo on Bioinstrumentation for freshmen general engineering students F09, F10, F11, F12

Workshop on Introduction to Medical Instrumentation and Imaging, South Carolina IDeA Networks of Biomedical Research Excellence (INBRE), Bioengineering, Workshop Organizer Su08, Su09

Workshop on Introduction to Bioengineering: Instrumentation and Nanotechnology, Women In Science and Engineering workshop for 8th grade girls, Organizer, S08

MTHSC 481, Creative Inquiry in Mathematics and Bioengineering, Guest
 Lecturer/Research Project Mentor, F07, S08, F08, F09
 Workshop on Introduction to Tissue Culture, South Carolina IDeA Networks of
 Biomedical Research Excellence (INBRE), Bioengineering, Workshop
 Organizer Su06, Su07
 CpSc 881, Bioinformatics Seminar, Computer Science, Organizer/Participant F05,
 S06, F06, S07

New Course Development

Design characterization section of BioE 461 nanotechnology class Su08
 Design BioE 451 creative inquiry class on medical simulators for S08
 Design and test BioE 370 with new labs and topics during F07

UNIVERSITY AND PUBLIC SERVICE

Committees (Group according to department, college, university.)

Department: Chair, Departmental Assessment Committee (2007-2017)
 Member, Undergraduate Assessment (ABET) Committee (2007- 2017)
 Member, 2011 Faculty Search Committee (2011)
 Member, Creative Inquiry Task Force (2010-2011)
 Member, IT Committee (2007-2009)
 Member, GenEd and E-portfolio task force (2007-2010)
 Member, Qualifier Exam Committee (2007-)
 Member, Creative Inquiry Task Force (2008-)
 Member, 2010 Department Faculty Search Committee (2010)
 Member, Summer Research Programs Task Force (2009-)
 Member, Graduate Committee (2011-)

College: Chair, Dean's Advisory Committee (2013-)
 Reviewer and Chair, TIGER proposal Review (2013-)

Institute: Member, ACC Undergraduate Research Committee (2009-)
 Member, Creative Inquiry Committee (2012-)
 Member, Committee to interview National Scholar Finalists (2010-)

External Committees:

Society for Biomaterials, Pioneering Biomaterial Strategies for
 Traumatic Craniomaxillofacial Injuries, 2014, Organizer and co-chair
 NIH NHLBI Mentored Transition to Independence Panel (K99/K22
 Review Panel), 2014- 2017, ad hoc member
 Reviewer for NSF for CBET programs 2015-2017
 Biomedical Engineering Society, Cellular and Molecular Biomechanics
 session, 2013, Co-Chair
 Biomedical Engineering Society, Undergraduate Research Session 2011,
 2016, Co-Chair

SouthEast Biomedical Engineering Career Conference (SEBECC),
Tissue Engineering Biomaterials and Drug Delivery Session Moderator,
2011
SouthEast Biomedical Engineering Career Conference (SEBECC) 2010
Program Committee Member (2010)
South Carolina Bioengineering Symposium Program Committee
member and Chair of Clinical Applications and Translational Research
Session (2009)

External Advisory Boards:

Member, “Project Lead the Way” Engineering and Biomedical Science
Curriculum for 6th-12th graders in Anderson School District 5.
Member, “School District of Oconee PLTW” Pre-Engineering programs
for Oconee School District
Member, “Project Lead the Way” Biomedical Science program for
Pickens School District

Last updated July 2, 2018