



Beth L. Pruitt

Professor of Bioengineering and of Mechanical Engineering

 NIH Biosketch available Online

 Curriculum Vitae available Online

CONTACT INFORMATION

- **Alternate Contact**

Doreen Wood

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Bio

BIO

We seek to understand the role of mechanics in biology and force sensitive pathways in cell-cell adhesion and subcellular organization, the role of mechanical environment on the structure and function of stem cell derived cardiomyocytes as biophysical models of health and disease, and to develop models of mechanical signaling underlying the sense of touch and hearing. Our research in cell biomechanics and mechanobiology includes development and application of custom microfabricated sensors and systems, new diagnostic tools and analysis systems, and robust manufacture and application of force sensors in harsh environments. We leverage microscale tools to answer novel questions in our lab in the areas of physiology, biology, stem cells, neuroscience and cardiology with an eye toward quantitative and fundamental biophysics.

ACADEMIC APPOINTMENTS

- Professor, Bioengineering
- Professor, Mechanical Engineering
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Child Health Research Institute
- Faculty Fellow, Stanford ChEM-H
- Member, Stanford Neurosciences Institute

HONORS AND AWARDS

- Best Poster Award - Ohi Dibua, ASME IMECE (2017)
- Fellow, AIMBE (2016)
- Fellow, ASME (2015)
- Best Poster Awards (2), 2014 ASME NEMB Meeting (2014)
- Stanford Faculty Scholars, Stanford University (2013-2014)
- Best Poster, MEMS in Medicine and Biology meeting (2013)

- Best Abstract Postdoc Research, GRC on Biointerfaces (2012)
- Silas H. Palmer Faculty Scholar in Mechanical Engineering, Stanford University (2010-2014)
- Stanford Clayman Fellow, Stanford University (2010-2011)
- Denice Denton Emerging Leader Award, Anita Borg Institute (2010)
- Best Abstract Award, MEMS in Medicine and Biology meeting (2009)
- Young Faculty Award, DARPA (2009)
- Best Poster, ASME IMECE meeting (2005)
- CAREER Award, NSF (2005)
- Fellowship, Hertz Foundation (1997-2002)
- Future Professors of Manufacturing Fellowship, Stanford University (1997-2002)
- Navy Commendation Medal for teaching and performance excellence, U.S. Naval Academy (1997)
- Integrated Manufacturing Association Fellowship, Stanford University (1991)

PROFESSIONAL EDUCATION

- PhD, Stanford , Mechanical Engineering (2002)
- M.Sc, Stanford University , Manufacturing Systems (1992)
- BS, MIT , Mechanical Engineering (1991)

LINKS

- Microsystems Laboratory: <http://microsystems.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The Pruitt microsystems lab works on custom measurements and analysis systems for small scale metrologies including scanning probe microscopy, biomechanics and mechanotransduction assays. We study the mechanics and biology of the sense of touch in *C. elegans*, the mechanisms and forces of cell adhesion, and the development and response of stem cells and cardiac myocytes to mechanical loading. We design and fabricate most of our own tools and sensors and are interested in the reliable manufacture and operation of micromachined sensors and actuators in harsh environments, measuring nanoscale mechanical behavior, and the analysis, design, and control of integrated electro-mechanical systems. We leverage new tools and answer novel questions in our lab in the areas of physiology, biology, stem cells, neuroscience and cardiology with an eye toward quantitative and fundamental biophysics.

Teaching

COURSES

2017-18

- Bioengineering Departmental Research Colloquium: BIOE 393 (Aut, Win, Spr)
- Introduction to Sensors: ME 220 (Spr)

2016-17

- Introduction to Sensors: ME 220 (Spr)
- Italian Design from the Renaissance to the Present Day: OSPFLOR 60 (Aut)
- Mechanobiology and Biofabrication Methods: BIOPHYS 342A (Win, Sum)

2015-16

- How Stuff Is Made: ME 14N (Aut)
- Introduction to Sensors: ME 220 (Spr)
- Mechanobiology and Biofabrication Methods: BIOPHYS 342A, ME 342A (Win, Sum)

2014-15

- Brazil Technology and Engineering: OSPGEN 137 (Sum)
- Brazil Technology and Engineering: OSPGEN 37 (Sum)
- How Stuff Is Made: ME 14N (Aut)
- MEMS Laboratory II: ENGR 342 (Win)
- Mechanobiology and Biofabrication Methods: ME 342A (Sum)
- Micro/Nano Systems Design and Fabrication: ENGR 341 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Ohiremen Dibua

Orals Chair

Miguel Garcia

Postdoctoral Faculty Sponsor

Cheavar Blair, Ehsan Sadeghipour

Doctoral Dissertation Advisor (AC)

Erica Castillo, Aleksandra Denisin, Joy Franco, Adam Nekimken, Robin Wilson

Postdoctoral Research Mentor

Leeya Engel, Pierre-Alexandre Gross, Anna Kim, Gaspard Pardon

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biophysics (Phd Program)
- Cardiovascular Medicine (Fellowship Program)

Publications

PUBLICATIONS

- **Forces applied during classical touch assays for *Caenorhabditis elegans*** *PLOS ONE*
Nekimken, A. L., Mazzochette, E. A., Goodman, M. B., Pruitt, B. L.
2017; 12 (5)
- **Multi-Imaging Method to Assay the Contractile Mechanical Output of Micropatterned Human iPSC-Derived Cardiac Myocytes** *CIRCULATION RESEARCH*
Ribeiro, A. J., Schwab, O., Mandegar, M. A., Ang, Y., Conklin, B. R., Srivastava, D., Pruitt, B. L.
2017; 120 (10): 1572-?
- **Rise time reduction of thermal actuators operated in air and water through optimized pre-shaped open-loop driving** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*
Larsen, T., Doll, J. C., LOIZEAU, F., Hosseini, N., Peng, A. W., Fantner, G. E., Ricci, A. J., Pruitt, B. L.
2017; 27 (4)
- **Pneumatic stimulation of *C. elegans* mechanoreceptor neurons in a microfluidic trap.** *Lab on a chip*
Nekimken, A. L., Fehlauer, H., Kim, A. A., Manosalvas-Kjono, S. N., Ladpli, P., Memon, F., Gopisetty, D., Sanchez, V., Goodman, M. B., Pruitt, B. L., Krieg, M.

2017

- **Disease Model of GATA4 Mutation Reveals Transcription Factor Cooperativity in Human Cardiogenesis** *CELL*
Ang, Y., Rivas, R. N., Ribeiro, A. J., Srivas, R., Rivera, J., Stone, N. R., Pratt, K., Mohamed, T. M., Fu, J., Spencer, C. I., Tippens, N. D., Li, M., Narasimha, et al
2016; 167 (7): 1734-?
- **Microfabricated electrochemical gas sensor** *MICRO & NANO LETTERS*
Gross, P., Larsen, T., Loizeau, F., Jaramillo, T., Spitzer, D., Pruitt, B.
2016; 11 (12): 798-802
- **Increasing β -catenin/Wnt3A activity levels drive mechanical strain-induced cell cycle progression through mitosis.** *eLife*
Benham-Pyle, B. W., Sim, J. Y., Hart, K. C., Pruitt, B. L., Nelson, W. J.
2016; 5
- **Single Molecule Force Measurements in Living Cells Reveal a Minimally Tensioned Integrin State.** *ACS nano*
Chang, A. C., Mekhdjian, A. H., Morimatsu, M., Denisin, A. K., Pruitt, B. L., Dunn, A. R.
2016: -?
- **Tuning the Range of Polyacrylamide Gel Stiffness for Mechanobiology Applications** *ACS APPLIED MATERIALS & INTERFACES*
Denisin, A. K., Pruitt, B. L.
2016; 8 (34): 21893-21902
- **Distilling complexity to advance cardiac tissue engineering** *SCIENCE TRANSLATIONAL MEDICINE*
Ogle, B. M., Bursac, N., Domian, I., Huang, N. F., Menasche, P., Murry, C. E., Pruitt, B., Radisic, M., Wu, J. C., Wu, S. M., Zhang, J., Zimmermann, W., Vunjak-Novakovic, et al
2016; 8 (342)
- **Time-dependent evolution of functional vs. remodeling signaling in induced pluripotent stem cell-derived cardiomyocytes and induced maturation with biomechanical stimulation** *FASEB JOURNAL*
Jung, G., Fajardo, G., Ribeiro, A. J., Kooiker, K. B., Coronado, M., Zhao, M., Hu, D., Reddy, S., Kodo, K., Sriram, K., Insel, P. A., Wu, J. C., Pruitt, et al
2016; 30 (4): 1464-1479
- **For whom the cells pull: Hydrogel and micropost devices for measuring traction forces.** *Methods*
Ribeiro, A. J., Denisin, A. K., Wilson, R. E., Pruitt, B. L.
2016; 94: 51-64
- **Tissue mechanics govern the rapidly adapting and symmetrical response to touch.** *Proceedings of the National Academy of Sciences of the United States of America*
Eastwood, A. L., Sanzeni, A., Petzold, B. C., Park, S., Vergassola, M., Pruitt, B. L., Goodman, M. B.
2015; 112 (50): E6955-63
- **Tissue mechanics govern the rapidly adapting and symmetrical response to touch** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Eastwood, A. L., Sanzeni, A., Petzold, B. C., Park, S., Vergassola, M., Pruitt, B. L., Goodman, M. B.
2015; 112 (50): E6955-E6963
- **Contractility of single cardiomyocytes differentiated from pluripotent stem cells depends on physiological shape and substrate stiffness** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Ribeiro, A. J., Ang, Y., Fu, J., Rivas, R. N., Mohamed, T. M., Higgs, G. C., Srivastava, D., Pruitt, B. L.
2015; 112 (41): 12705-12710
- **Multifunctional Integrated Sensors for Multiparameter Monitoring Applications** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*
Roozeboom, C. L., Hill, B. E., Vu Anh Hong, V. A., Ahn, C. H., Ng, E. J., Yang, Y., Kenny, T. W., Hopcroft, M. A., Pruitt, B. L.
2015; 24 (4): 810-821
- **Self-sensing cantilevers with integrated conductive coaxial tips for high-resolution electrical scanning probe metrology** *JOURNAL OF APPLIED PHYSICS*
Haemmerli, A. J., Harjee, N., Koenig, M., Garcia, A. G., Goldhaber-Gordon, D., Pruitt, B. L.
2015; 118 (3)
- **Mechanotransduction: use the force(s)** *BMC BIOLOGY*
Paluch, E. K., Nelson, C. M., Biaias, N., Fabry, B., Moeller, J., Pruitt, B. L., Wollnik, C., Kudryasheva, G., Rehfeldt, F., Federle, W.

2015; 13

- **Spatial distribution of cell-cell and cell-ECM adhesions regulates force balance while maintaining E-cadherin molecular tension in cell pairs** *MOLECULAR BIOLOGY OF THE CELL*
Sim, J. Y., Moeller, J., Hart, K. C., Ramallo, D., Vogel, V., Dunn, A. R., Nelson, W. J., Pruitt, B. L.
2015; 26 (13): 2456-2465
- **Mechanical strain induces E-cadherin-dependent Yap1 and beta-catenin activation to drive cell cycle entry** *SCIENCE*
Benham-Pyle, B. W., Pruitt, B. L., Nelson, W. J.
2015; 348 (6238): 1024-1027
- **Cell adhesion. Mechanical strain induces E-cadherin-dependent Yap1 and β -catenin activation to drive cell cycle entry.** *Science*
Benham-Pyle, B. W., Pruitt, B. L., Nelson, W. J.
2015; 348 (6238): 1024-1027
- **Mechano-transduction: from molecules to tissues.** *PLoS biology*
Pruitt, B. L., Dunn, A. R., Weis, W. I., Nelson, W. J.
2014; 12 (11)
- **Mechano-Transduction: From Molecules to Tissues** *PLOS BIOLOGY*
Pruitt, B. L., Dunn, A. R., Weis, W. I., Nelson, W. J.
2014; 12 (11)
- **Stable, Covalent Attachment of Laminin to Microposts Improves the Contractility of Mouse Neonatal Cardiomyocytes** *ACS APPLIED MATERIALS & INTERFACES*
Ribeiro, A. J., Zaleta-Rivera, K., Ashley, E. A., Pruitt, B. L.
2014; 6 (17): 15516-15526
- **Stable, covalent attachment of laminin to microposts improves the contractility of mouse neonatal cardiomyocytes.** *ACS applied materials & interfaces*
Ribeiro, A. J., Zaleta-Rivera, K., Ashley, E. A., Pruitt, B. L.
2014; 6 (17): 15516-15526
- **Shielded piezoresistive cantilever probes for nanoscale topography and electrical imaging** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*
Yang, Y., Ma, E. Y., Cui, Y., Haemmerli, A., Lai, K., Kundhikanjana, W., Harjee, N., Pruitt, B. L., Kelly, M., Shen, Z.
2014; 24 (4)
- **Multifunctional integrated sensor in a 2x2 mm epitaxial sealed chip operating in a wireless sensor node**
Roozeboom, C., L., Hong, V., A., Ahn, C., H., Ng, E., J., Yang, Y., Hill, B., E., Pruitt, B.
2014
- **Planar patterned stretchable electrode arrays based on flexible printed circuits** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*
Taylor, R. E., BOYCE, C. M., Boyce, M. C., Pruitt, B. L.
2013; 23 (10)
- **MEMS-based shear characterization of soft hydrated samples** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*
Higgs, G. C., Simmons, C. S., Gao, Y., Fried, A. T., Park, S., Chung, C., Pruitt, B. L.
2013; 23 (8)
- **Nanomechanical actuation of a silicon cantilever using an azo dye, self-assembled monolayer.** *Langmuir*
Rastegar, A. J., Vosgueritchian, M., Doll, J. C., Mallon, J. R., Pruitt, B. L.
2013; 29 (23): 7118-7124
- **Integrated Multifunctional Environmental Sensors** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*
Roozeboom, C. L., Hopcroft, M. A., Smith, W. S., Sim, J. Y., Wickeraad, D. A., Hartwell, P. G., Pruitt, B. L.
2013; 22 (3): 779-793
- **MEMS-based force-clamp analysis of the role of body stiffness in C. elegans touch sensation.** *Integrative biology*
Petzold, B. C., Park, S., Mazzochette, E. A., Goodman, M. B., Pruitt, B. L.
2013; 5 (6): 853-864
- **Spatially Resolved Study of Backscattering in the Quantum Spin Hall State** *PHYSICAL REVIEW X*

- Koenig, M., Baenninger, M., Garcia, A. G., Harjee, N., Pruitt, B. L., Ames, C., Leubner, P., Bruene, C., Buhmann, H., Molenkamp, L. W., Goldhaber-Gordon, D.
2013; 3 (2)
- **Spatial patterning of endothelium modulates cell morphology, adhesiveness and transcriptional signature** *BIOMATERIALS*
Huang, N. F., Lai, E. S., Ribeiro, A. J., Pan, S., Pruitt, B. L., Fuller, G. G., Cooke, J. P.
2013; 34 (12): 2928-2937
 - **Sacrificial layer technique for axial force post assay of immature cardiomyocytes** *BIOMEDICAL MICRODEVICES*
Taylor, R. E., Kim, K., Sun, N., Park, S., Sim, J. Y., Fajardo, G., Bernstein, D., Wu, J. C., Pruitt, B. L.
2013; 15 (1): 171-181
 - **Microactuator device for integrated measurement of epithelium mechanics** *BIOMEDICAL MICRODEVICES*
Mukundan, V., Nelson, W. J., Pruitt, B. L.
2013; 15 (1): 117-123
 - **Characterization of the Biophysical Origins of Mechanical Homeostasis at Cellular Adhesions** *57th Annual Meeting of the Biophysical-Society*
Mekhdjian, A. H., Morimatsu, M., Borghi, N., Pruitt, B. L., Weis, W. I., Nelson, W. J., Dunn, A. R.
CELL PRESS.2013: 491A-491A
 - **Abnormal Calcium Handling Properties Underlie Familial Hypertrophic Cardiomyopathy Pathology in Patient-Specific Induced Pluripotent Stem Cells** *CELL STEM CELL*
Lan, F., Lee, A. S., Liang, P., Sanchez-Freire, V., Nguyen, P. K., Wang, L., Han, L., Yen, M., Wang, Y., Sun, N., Abilez, O. J., Hu, S., Ebert, et al
2013; 12 (1): 101-113
 - **Formation of composite polyacrylamide and silicone substrates for independent control of stiffness and strain** *LAB ON A CHIP*
Simmons, C. S., Ribeiro, A. J., Pruitt, B. L.
2013; 13 (4): 646-649
 - **Piezoresistor Design and Applications**
Doll, J. C., Pruitt, B. L.
Springer.2013
 - **The Yin-Yang of Rigidity Sensing: How Forces and Mechanical Properties Regulate the Cellular Response to Materials** *ANNUAL REVIEW OF MATERIALS RESEARCH, VOL 43*
Schoen, I., Pruitt, B. L., Vogel, V.
2013; 43: 589-618
 - **Microsystems AND Functional Assay for Mechanobiology**
Pruitt, B., L., Doll, J., C., Park, S., J., Harjee, N., Petzold, B., C.
2013
 - **Spatial patterning of endothelium modulates cell morphology, adhesiveness and transcriptional signature** *Biomaterials*
Huang, N., F., Lai, E., S., Ribeiro, A., J., Pan, S., Pruitt, B., L., Fuller, G., G.
2013; 34 (12): 2928-37
 - **Spatially Resolved Study of Backscattering in the Quantum Spin Hall State** *Physical Review X*
Koenig, M., Baenninger, M., Garcia, A., G. F., Harjee, N., Pruitt, B., L., Ames, C.
2013; 3: 21003
 - **A Real Time Imaging System for Tracking Freely Moving C. elegans in Touch Assays**
Mazzochette, E., A., Yen, C., Fang, Goodman, M., B., Pruitt, B., L.
2013
 - **Ultra-Thin Atomic Layer Deposition Films for Corrosion Resistance**
Haemmerli, A., J., Doll, J., C., Provine, J., Howe, R., T., Pruitt, B., L.
2013
 - **Inducing variations in the shortening of single cardiomyocytes with localized mechanical stimulation**
Higgs, G., C., Ribeiro, A., J. S., Zaleta, K., Ashley, E., A., Pruitt, B., L.
2013

- **The Yin-Yang of Rigidity Sensing: How Forces and Mechanical Properties Regulate the Cellular Response to Materials** *Annual Review of Materials Research*
Schoen, I., Pruitt, B., L., Vogel, V.
2013
- **MEMS-based force-clamp analysis of the role of body stiffness in C. elegans touch sensation** *Integrative Biology*
Petzold, B., C., Park, S. -J., Mazzochette, E., A., Goodman, M., B., Pruitt, B., L.
2013; 5 (6): 853-64
- **MEMS-based shear characterization of soft hydrated samples** *Journal of Micromechanics and Microengineering*
Higgs, G., C., Simmons, C., S., Gao, Y., Fried, A., T., Park, S., J., Chung, C., Pruitt, B.
2013; 8 (23): 85001
- **Planar patterned stretchable electrode arrays based on flexible printed circuits** *Journal of Micromechanics and Microengineering*, 23, 105004 (2013) *Article chosen for IOP Select Distribution due to its novelty, significance and potential impact on future research
Taylor, R., E., Boyce, C., M., Boyce, M., C., Pruitt, B., L.
2013; 23: 105004
- **Nanomechanical Actuation of a Silicon Cantilever Using an Azo Dye, Self-Assembled Monolayer** *Langmuir*
Rastegar, A., Joseph, Vosgueritchian, M., Doll, J., C., Mallon, J., R., Pruitt, B., L.
2013; 23 (29): 6779-7178
- **Spontaneous cardiomyocyte differentiation of mouse embryoid bodies regulated by hydrogel crosslink density** *BIOMATERIALS SCIENCE*
Chung, C., Pruitt, B. L., Heilshorn, S. C.
2013; 1 (10): 1082-1090
- **Integrated Sensor Cross-Sensitivity Analysis**
Roozeboom, C., L., Salgado, J., F., Hopcroft, M., A., Pruitt, B., L.
2013
- **Spontaneous cardiomyocyte differentiation of mouse embryoid bodies regulated by hydrogel crosslink density** *Biomaterials Science*
Chung, C., Pruitt, B., L., Heilshorn, S., C.
2013; 10 (1): 1082 - 1090
- **Piezoresistor Design and Applications**
Doll, J. C., Pruitt, B. L.
Springer.2013
- **PIEZORESISTIVE CANTILEVER PROBES FOR SIMULTANEOUS NANOSCALE TOPOGRAPHY AND CONDUCTIVITY IMAGING** *26th IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*
Yang, Y., Ma, Y., Haemmerli, A., Lai, K., Kundhikanjana, W., Harjee, N., Pruitt, B., Li, X., Kelly, M., Shen, Z.
IEEE.2013: 323-326
- **Faster than the Speed of Hearing: Nanomechanical Force Probes Enable the Electromechanical Observation of Cochlear Hair Cells** *NANO LETTERS*
Doll, J. C., Peng, A. W., Ricci, A. J., Pruitt, B. L.
2012; 12 (12): 6107-6111
- **High-bandwidth piezoresistive force probes with integrated thermal actuation**
Doll, J. C., Pruitt, B. L.
IOP PUBLISHING LTD.2012
- **E-cadherin is under constitutive actomyosin-generated tension that is increased at cell-cell contacts upon externally applied stretch** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Borghi, N., Sorokina, M., Shcherbakova, O. G., Weis, W. I., Pruitt, B. L., Nelson, W. J., Dunn, A. R.
2012; 109 (31): 12568-12573
- **Low-impedance shielded tip piezoresistive probe enables portable microwave impedance microscopy** *MICRO & NANO LETTERS*
Haemmerli, A. J., Nielsen, R. T., Kundhikanjana, W., HARJEE, N., Goldhaber-Gordon, D., Shen, Z. X., Pruitt, B. L.
2012; 7 (4): 321-324

- **SPECIAL SECTION: MICRO AND NANO TECHNOLOGIES FOR PROBE-BASED MICROSCOPY** *MICRO & NANO LETTERS*
Curri, L., Fedder, G., Pruitt, B. L.
2012; 7 (4): 296-296
- **Hydrogel crosslinking density regulates temporal contractility of human embryonic stem cell-derived cardiomyocytes in 3D cultures** *SOFT MATTER*
Chung, C., Anderson, E., Pera, R. R., Pruitt, B. L., Heilshorn, S. C.
2012; 8 (39): 10141-10148
- **Influence of body mechanics on force thresholds for touch sensation in C. elegans**
Petzold, B., C., Park, S. -J., Ponce, P., Roozeboom, C., Powell, C., Goodman, M., B., Pruitt, B.
2012
- **Body mechanics regulate the force threshold for gentle touch sensation in the nematode C. elegans**
Petzold, B., C., Park, S. -J., Goodman, M., B., Pruitt, B., L.
2012
- **Low-Impedance Shielded Tip Piezoresistive Probe Enables Portable Microwave Impedance Microscopy** *Micro & Nano Letters*
Haemmerli, A., J., Nielsen, R., T., Kundhikanjana, W., Harjee, N., Goldhaber-Gordon, D., Shen, Z., X., Pruitt, B.
2012; 7 (4): 321-324
- **Sacrificial layer technique for axial force post assay of immature cardiomyocytes** *Biomedical Microdevices*
Taylor, R., Kim, K., Sun, N., Park, S.-j., Sim, J., Y., Fajardo, G., Pruitt, B.
2012; 15 (1): 171-181
- **Covalent Attachment of Bioactive Molecules to PDMS for Cardiomyocyte Adhesion**
Ribeiro, A., J.S., Rastegar, A., J., Zaleta, K., Ashley, E., A., Pruitt, B., L.
2012
- **Effects of substrate mechanics on contractility of cardiomyocytes generated from human pluripotent stem cells** *International Journal of Cell Biology*
Hazeltnine, L., Simmons, C., S., Salick, M., Lian, X., Badur, M., Han, W., Pruitt, B.
2012: 508294
- **High bandwidth piezoresistive force probes with integrated thermal actuation** *Journal of Micromechanics and Microengineering*
Doll, J., C., Pruitt, B., L.
2012; 22 (9): 95012
- **Formation of composite polyacrylamide and silicone substrates for independent control of stiffness and strain** *Lab Chip*
Simmons, C., S., Ribeiro, A., J.S., Pruitt, B., L.
2012; 13: 646-649
- **Piezoresistive Cantilevers for Biological Force Measurements**
Doll, J., C., Park, S. -J., Harjee, N., Petzold, B., C., Pruitt, B., L.
2012
- **MEMS force probes for cell mechanobiology at the microsecond scale**
Doll, J., C., Pruitt, B., L.
2012
- **Changes in Cell Traction Forces in Response to Uniaxial Loading**
Sim, J., Y., Borghi, N., Kim, K., Simmons, C., S., Ribeiro, A., J.S., Pruitt, B., L.
2012
- **MULTI-FUNCTIONAL INTEGRATED SENSORS FOR THE ENVIRONMENT** *25th IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*
Roozeboom, C. L., Sim, J. Y., Wickeraad, D., Dura, B., Smith, W. S., Hopcroft, M. A., Hartwell, P. G., Williams, R. S., Pruitt, B. L.
IEEE.2012
- **UNIAXIAL CELL STRETCHER ENABLES HIGH RESOLUTION LIVE CELL IMAGING** *25th IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*
Sim, J. Y., Borghi, N., RIBEIRO, A., Sorokina, M., Shcherbakova, O., Ramallo, D., Dunn, A., NELSON, W. J., Pruitt, B. L.

IEEE.2012

- **LOW-IMPEDANCE SHIELDED TIP PIEZORESISTIVE PROBE ENABLES PORTABLE MICROWAVE IMPEDANCE MICROSCOPY** *25th IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*
Haemmerli, A. J., Nielsen, R. T., Kundhikanjana, W., HARJEE, N., Lai, K., Yang, Y. L., Goldhaber-Gordon, D., Shen, Z. X., Pruitt, B. L.
IEEE.2012
- **High bandwidth piezoresistive force probes with integrated thermal actuation.** *Journal of micromechanics and microengineering : structures, devices, and systems*
2012; 22 (9)
- **Low-Impedance Shielded Tip Piezoresistive Probe Enables Portable Microwave Impedance Microscopy** *Micro Nano Letters*
A.J. Haemmerli, R.T. Nielsen, W. Kundhikanjana, N. Harjee, D. Goldhaber-Gordon, Z.X. Shen, B.L. Pruitt
2012; 7 (4): 321?324
- **Effects of substrate mechanics on contractility of cardiomyocytes generated from human pluripotent stem cells.** *International journal of cell biology*
Hazeltine, L. B., Simmons, C. S., Salick, M. R., Lian, X., Badur, M. G., Han, W., Delgado, S. M., Wakatsuki, T., Crone, W. C., Pruitt, B. L., Palecek, S. P.
2012; 2012: 508294-?
- **Microsystems for biomimetic stimulation of cardiac cells** *LAB ON A CHIP*
Simmons, C. S., Petzold, B. C., Pruitt, B. L.
2012; 12 (18): 3235-3248
- **DEG/ENaC but Not TRP Channels Are the Major Mechanoelectrical Transduction Channels in a C. elegans Nociceptor** *NEURON*
Geffeney, S. L., Cueva, J. G., Glauser, D. A., Doll, J. C., Lee, T. H., Montoya, M., Karania, S., Garakani, A. M., Pruitt, B. L., Goodman, M. B.
2011; 71 (5): 845-857
- **Patterned cracks improve yield in the release of compliant microdevices from silicon-on-insulator wafers** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*
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