Shaheen Jeeawoody

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Education

09/14-present UNIVERSITY OF CALIFORNIA, BERKELEY AND SAN FRANCISCO
Ph.D. in Bioengineering, expected May 2019 GPA: 3.7 / 4.0

09/10-06/14 STANFORD UNIVERSITY
B.S. in Bioengineering GPA: 3.6 / 4.0

Research Experience

01/16- present BIOINSTRUMENTATION FOR QUANTITATIVE BIOLOGY AND MEDICINE
Dr. Amy Herr, Bioengineering, UC Berkeley
- Optimizing single cell Western blot assay to study human iPSC-derived cardiomyocyte proteomics related to maturity markers, in collaboration with Pruitt Lab, Mechanical Engineering, Stanford

10/14-12/14, 05/15-12/15 BIOMATERIALS AND TISSUE ENGINEERING LABORATORY
Dr. Kevin Healy, Bioengineering, Materials Science and Engineering, UC Berkeley
- Validated use of voltage-sensitive dyes as non-terminal assessment mechanism of hiPS-derived cardiomyocyte function in 2D, in collaboration with Miller Lab, Molecular & Cell Biology, Chemistry, UC Berkeley
- Rotation Project: assessed culture conditions for hiPSC-derived white adipocytes in microphysiological system

03/15-05/15 CENTER FOR BIOENGINEERING AND TISSUE ENGINEERING
Dr. Valerie Weaver, Surgery, Anatomy, Bioengineering, UCSF
- Rotation Project: investigated the effect of matrix dimensionality on cell survival

01/15-03/15 MESSERSMITH RESEARCH GROUP
Dr. Phil Messersmith, Bioengineering, Materials Science and Engineering, UC Berkeley
- Rotation Project: investigated a novel conjugation mechanism to bind a cytotoxic drug to a PEG-based polymer for *in vivo* delivery

11/10-04/14 STEM CELL AND BIOMATERIALS ENGINEERING LABORATORY
Dr. Fan Yang, Bioengineering, Orthopaedic Surgery, Stanford University
- Optimized oxygen tension and media condition for stem cell chondrogenesis and cartilage production in 3D biomimetic hydrogels
- Assessed effects of osteogenic gene delivery on human fetal osteoblasts in 2D

03/13-05/13 UMR 7221: EVOLUTION DES RÉULATIONS ENDOCRINIENNES
Dr. Giovanni Levi, Département Régulation, Développement et Diversité Moléculaire, Muséum National d'Histoire Naturelle, Paris, France
- Analyzed dental morphology and identity using 3D reconstruction techniques on embryonic mutant mice with craniofacial defects

Publications

- P Loskill, T Sezhian, K Tharp, **S Jeeawoody**, WM Reese, A Stahl, KE Healy. "WAT-on-a-chip: A microfluidic system incorporating physiologically relevant white adipose tissue." 2016. *in progress*.
- A Mathur, Z Ma, P Loskill, **S Jeeawoody**, KE Healy. "In Vitro Cardiac Tissue Models: Current Status and Future Prospects." *Advanced Drug Delivery Reviews*. 2016;96:203-13. Epub 2015.
- AM Ramasubramanian*, **S Jeeawoody** *, F Yang (* co-first authors). "Gene Delivery of Osteoinductive Signals to Human Fetal Osteoblasts, A Progenitor Cell Line, Induces Apoptosis in a Dose-Dependent Manner." *Drug Delivery and Translational Research*. 2015;5(2):160-7. Epub 2013.

Book Chapter

- JH Lai, AM Ramasubramanian, **S Jeeawoody**, F Yang. "Nanotechnology for Engineering Cellular Microenvironment and Gene Delivery." Ch 20 in M Ramalingam et al. *Tissue Engineering and Regenerative Medicine: A Nano Approach*. CRC Press. 2012. 53–472.

Posters and Presentations

- JH Lai, SW Yu, **S Jeeawoody**, RL Smith, W Maloney, F Yang. "Enhanced Cartilage Formation In Vivo via Harnessing the Interplay between Chondrocytes and Stem Cells." *Biomedical Engineering Society conference*, San Antonio. Poster October 2014.
- JH Lai, SW Yu, **S Jeeawoody**, RL Smith, W Maloney, F Yang. "Effects of Oxygen Tension and Culture Media Condition on Cell-Cell Interaction between Adipose-Derived Stem Cells and Neonatal Chondrocytes." *Orthopedic Research Society conference*, New Orleans. Poster March 2014.
- **S Jeeawoody**, JH Lai, F Yang. "Spatial Patterning within Hydrogels for Mimicking Zonal Tissue Organizations." *Bioengineering REU Poster Fair,* Stanford University. Poster August 2013.
- **S Jeeawoody**, JH Lai, SW Yu, F Yang. "The Effects of Co-Culturing Adipose-Derived Stem Cells and Chondrocytes in 3D Biomimetic Hydrogels under Hypoxia." *Bioengineering REU Poster Fair*, Stanford University. Poster August 2012.
- **S Jeeawoody**, AM Ramasubramanian, F Yang. "Gene Delivery of BMP2, Noggin and GNAS to a Human Osteoblast Cell Line Induces Apoptosis in a Dose-Dependent Manner." *Orthopaedic Research Society conference*, San Francisco. Poster February 2012.
- **S Jeeawoody**, AM Ramasubramanian, F Yang. "Gene Delivery of BMP2, Noggin and GNAS to a Human Osteoblast Cell Line Induces Apoptosis in a Dose-Dependent Manner." *Stanford Symposium of Undergraduate Research and Public Service*. Poster October 2011.
- **S Jeeawoody**, AM Ramasubramanian, F Yang. "Gene Delivery of BMP2, Noggin and GNAS to a Human Osteoblast Cell Line Induces Apoptosis in a Dose-Dependent Manner." *Stanford BioX Interdisciplinary Initiatives Symposium*. Poster September 2011.

Professional Activities

02/16-present	Member, Diversity Task Force, Bioengineering, UC Berkeley/UCSF
2013-14	Search committee, Dean of the School of Engineering, Stanford University
2013-14	Chapter president, Stanford chapter, Society of Women Engineers (SWE)
2011-present	Member, Biomedical Engineering Society (BMES)
2010-present	Member, Society of Women Engineers (SWE)

Awards and Fellowships

2015-17	UC Berkeley Stem Cell Center NIH T32 Fellowship (accepted)
2014-19	National Science Foundation Graduate Research Fellowship (accepted)
2014	National Defense Science and Engineering Fellowship (declined)
2014	Ford Foundation Fellowship Honorable Mention
2014	Stanford School of Engineering Diversity Leadership Award
2014	Stanford BCSC Crossfield, Black, Coley Award for Superior Academic Achievement
2013	Stanford BioE Research Experience for Undergraduates (REU)
2013	Region A SWE Travel Grant for WE13 National Conference
2013	Stanford SWE Outstanding Leadership and Society Commitment Award
2012	Stanford BioE Research Experience for Undergraduates (REU)
2012	Stanford SWE Exceptional Society Commitment Award
2012-14	Thomas H. Bredt Undergraduate Engineering Scholarship
2011	Stanford School of Engineering Summer Undergraduate Research Fellow (SURF)
2011	Stanford VPUE Minor Grant
2010-14	Stanford BCSC Dean's Award for Academic Excellence
2010	Stanford Ernest Houston Johnson Scholars Program

Teaching

01/16-05/16 BIOE 110: PHYSIOLOGY

- GSI / TA: 20+ hours developing and reviewing assignments and exams, holding office hours, and guiding students through course material

- Upper-division BioE course with 94 undergraduate students

09/15-12/15 BIOE / MATSCI C118 / C208: BIOLOGICAL PERFORMANCE OF MATERIALS
- GSI / TA: 80+ hours developing and reviewing assignments and exams, holding office hours, and guiding students through course material and final projects
- Upper-division BioE and MatSci course with 25 undergraduate and 25 graduate students

03/12-06/12 ENGR 80: INTRODUCTION TO BIOENGINEERING
- Grader: 20+ hours reviewing assignments for introductory BioE course with 50 undergraduate students

Mentoring and Outreach

11/14-present BIOENGINEERING ASSOCIATION OF STUDENTS (BEAST), UC BERKELEY
- Alumni / Industry Liaison: initiated and built seminar series with co-chair
- Organized 10 alumni seminars in first 6 months with speakers from academia, industry, government, consulting, law, etc. for graduate BioE Ph.D. students at UC Berkeley and UCSF

02/15-present BAY AREA STUDENTS IN SCIENCE (BASIS), UC BERKELEY
- Co-developed and taught a hands-on science lesson for elementary school students, titled "Unblock My Heart," about atherosclerosis, myocardial infarctions, and experiments for bioengineering treatments

09/14-present GRADUATE WOMEN IN ENGINEERING (GWE), UC BERKELEY
- Co-organized 4 industry seminars yearly, featuring engineers from many career paths post-graduate school, for graduate engineering Ph.D. women at UC Berkeley

09/10-06/14 SOCIETY OF WOMEN ENGINEERS (SWE), STANFORD
- President, VP External Affairs, High School Outreach Chair, Community Service Intern
- Created 2 new outreach initiatives for under-resourced schools
- Built and maintained 30+ corporate partnerships, with new corporate mentoring program
- Led team of 20+ officers on outreach and professional development projects
- Taught hands-on engineering workshops to 100+ high school students
- Led panels and campus tours for students from under-resourced schools and low-income communities

06/11-06/14 STANFORD SUMMER ENGINEERING ACADEMY, ENGINEERING DIVERSITY PROGRAMS
- Resident Assistant, Intern: mentored and advised 3 years of 50 incoming freshmen each on engineering coursework and life at Stanford
- Course Assistant-Tutor: held 20+ hours each summer of sections and tutoring for linear algebra, Java, and website programming courses

09/11-06/13 BIOMEDICAL ENGINEERING SOCIETY (BMES), STANFORD
- Co-founder of mentoring program for 50 BioE undergraduates and 20 graduates each year

Professional Development

- Computer Programming: Java, JavaScript, HTML
- Software: Gene Designer, ImageJ, Materialise Mimics, Matlab, Solidworks, COMSOL
- Product Design and Manufacturing: 3D printing, laser cutting, welding, sand casting, manual machining
- Biological Research:
  - Bacterial and mammalian cell culture
  - Human adult and embryonic stem cell culture
  - Human iPS-derived cardiomyocyte differentiation
  - Subcutaneous mouse models
  - Viral and biomaterials-based transfection for gene delivery
  - qRT-PCR, ELISA, histology, biochemistry, fluorescence microscopy, confocal microscopy
  - Primer design and gene cloning strategies
- Languages: French, Creole