

# ELAINE SU

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1849 SHATTUCK AVENUE APT 308, BERKELEY, CALIFORNIA, 94709 · ELAINE.J.SU@BERKELEY.EDU · 650.826.9098

**EDUCATION & HONORS** **University of California, Berkeley and University of California, San Francisco**  
Ph.D. Bioengineering, Expected 2018  
**University of California, Berkeley**  
B.S. Bioengineering, December 2011  
**Awards & Honors:** NSF Graduate Research Fellowship (2014), Whitaker International Fellowship (2012), Bioengineering Honor Society (2010), Berkeley Stem Cell Center Apprenticeship (2011), Chevron Recognition Award (2010)

## EXPERIENCE

- 8.2013-Present **Graduate Student Researcher**  
*S. Li (Cell and Tissue Engineering) and G. Marriott (Biophysics) Labs* UC Berkeley
- Substrate Stiffness Project (continuation): Enhance reprogramming efficiency using substrate stiffness; elucidating epigenetic changes during reprogramming
  - Biomaterials Project: Design of DNA-crosslinked hydrogels for dynamic matrix modulation to optimize direct reprogramming of fibroblasts to neurons and iPSCs
- 9.2012-6.2013 **Whitaker International Fellow**  
*A.I. Barakat (Cardiovascular Cell Engineering) Lab* École Polytechnique, France
- Flow-Induced Endothelial Cell (EC) Migration Project: Investigated the effects of flow on EC migratory behavior; identified roles of shear rate versus shear stress
  - Mechanical Modulation of EC Migration Project: Established protocol to study the combinatorial effects of substrate rigidity and flow effects on EC migration
- 10.2010-5.2012 **Undergraduate Researcher**  
*S. Li (Cell and Tissue Engineering) Lab* UC Berkeley
- Senescence and Reprogramming Project: Explored fibroblast population changes over time and how they affect reprogramming of fibroblasts into iPS cells
  - Fibroblast Proliferation Profiling: Designed and implemented an independent research project to determine the effects of substrate stiffness and seeding density on mouse fibroblast proliferation
- 5.2011-8.2011 *Berkeley Stem Cell Center Apprenticeship (funded by CIRM)* UC Berkeley
- Substrate Stiffness Subproject: Investigated influence of mechanical cues on iPS reprogramming efficiency; enhanced efficiency using an optimal stiffness
  - Explored mechanisms of substrate-mediated reprogramming enhancement
- 6.2010-8.2010 **Research Engineering Intern**  
*Chevron Energy Technology Company, Improved Oil Recovery Unit* Richmond, CA
- Established computerized tomography (CT) image processing methodology using ImageJ and Fiji and applied the method to analyze over 100,000 *in situ* CT images
  - Designed and implemented experiments to improve oil recovery from rock

## SKILLS

**Laboratory:** Human and murine stem cell culture, cell reprogramming, DNA hydrogel synthesis, bacterial transformation, plasmid construction, viral synthesis, flow experimentation, polyacrylamide gel synthesis, qRT-PCR, gel electrophoresis, Western Blot, immunocytochemistry, flow cytometry, atomic force microscopy  
**Language:** fluent in English; proficient in French & Mandarin; familiar with Spanish  
**Computer:** Microsoft Office Suite, ImageJ, AutoCAD, FlowJo, MATLAB, SolidWorks

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## LEADERSHIP

### ACTIVITIES

#### **BEAST Industry/Alumni Liaison**

- 1.2015-present *UC Berkeley/UCSF Bioengineering Association of Students* UC Berkeley
- Spearheaded first-ever alumni seminar series for current graduate students to enhance awareness of career opportunities in a variety of fields including consulting, law, academia, startups, and industry; invited alumni to give talks
  - Organized formal alumni network (previously non-existent) for UC Berkeley and UCSF bioengineering program to connect current students with program alumni

1.2015-present

#### **BEAST Social Committee**

- UC Berkeley/UCSF Bioengineering Association of Students* UC Berkeley
- Coordinated and fund-raised for social activities for bioengineering PhD students to enhance intra- and inter-departmental bonding and collaboration
  - Designed team-building exercises (e.g. tallest and most sturdy gingerbread house competition, cohort team Olympics, etc.) and hosted formal events

## TEACHING & OUTREACH

8.2013-present

#### **BigBEAR and BASIS**

Berkeley, CA

- Mentoring undergraduate students and motivating them to pursue research opportunities; advising on job, fellowship, and graduate school applications
- Volunteering at local elementary schools to promote interest in science and engineering; designing lesson plans and teaching kits to foster hands-on learning

1.2012-5.2012

Teaching Assistantship – BioE 116 (cell and tissue engineering)

UC Berkeley

- Formulated exams, held office hours, and graded for upper division BioE course
- Gave a guest lecture and encouraged discussion for class of ninety-seven students

10.2010-12.2011

Bioengineering Honor Society and BEACON

UC Berkeley

- Participated regularly in community service, social, and professional events
- Mentored bioengineering students on obtaining industry internships, research assistantships, and other research-related positions

## PUBLICATIONS

### & CONFERENCES

**Su E., Brennan J., Maiuri P., Piel M., Barakat A.I.** The Effects of Shear stress and Shear Rate on Endothelial Cell Migration (manuscript in preparation). 2015.

**Su E., Brennan J., Maiuri P., Piel M., Barakat A.I.** The Influence of Hemodynamic Forces on Endothelial Cell Migration. Presentation. BMES annual meeting, Seattle, WA. September 2013.

**Su E., Downing T., Li S.** Changes in adult fibroblast populations with passaging decrease reprogramming efficiency. Poster. Experimental Biology, San Diego, CA. April 2012.