

Tova Christensen

University of Colorado, Boulder

3415 Colorado Ave., 596 UCB, Boulder, CO 80303

Molecular Cellular and Developmental Biology

Phone: 925-337-5560 Email: tova.christensen@colorado.edu

I am currently a graduate student in molecular biology who aspires to be a project manager at a biotechnology company. I want to work as a team leader to develop better diagnostics and treatments for disease.

Education

University of Colorado, Boulder

Ph.D. candidate in Molecular, Cellular, and Developmental Biology (2014-present)

Advisors: Kristi Anseth and Leslie Leinwand

Prospective Thesis Title: "Cardiac Fibroblasts—Sensors of Matrix Stiffness and Regulators of Cardiac Elasticity"

University of California, San Diego

B.S. in General Biology with Molecular Biology focus (2013)

University College Utrecht, Netherlands

Six months studying abroad (2013)

Professional Experience

Graduate Student Researcher, University of Colorado, Boulder

Research with Kristi Anseth's and Leslie Leinwand's Labs (8/10/14-present)

- Designing synthetic hydrogel matrices to test the effects of changing matrix stiffness on cardiac fibroblast phenotype including gene expression, stress fiber formation, proliferation and morphology to better understand persistent fibroblast activation in the heart
- Determining the differences between males and females in the development of fibrosis with isoproterenol treatment in rats
- 3D co-culture with lung fibroblasts and epithelial cells to determine the effect of cell signaling in 3D on lung cell proliferation and MMP activity (published work*)

Teaching Assistant, University of Colorado, Boulder

Teaching (8/10/14-5/20/15)

- Taught 4 classes of *Introduction to Molecular Biology Laboratory* and 4 classes of *Genetics Laboratory* (~30 students/class)
- Lectured to students on background and experimental protocol and directing lab experiments
- Graded lab reports, worksheets, and tests and held office hours to assist with lab and lecture material

Posiba, San Diego, CA

Administrative Assistant/Data Analytics Team Member (3/02/14-8/01/14)

- Administrative Assistant—managed CEO contacts and meetings, organized and filed documents, assorted tasks
- Data analytics team task manager—used Trello to prioritize team members' weekly tasks, collected and organized grant data from public sources, created video tutorials for site

Lawrence Livermore National Laboratory (LLNL), Livermore, CA

Intern with Matt Coleman's Lab, Biosciences and Biotechnology Department (6/20/12-7/28/12)

- Designed and tested microfluidic devices using sandwich ELISA with fluorescent detection antibody to quantify p53 levels in blood plasma following exposure to ionizing radiation

Intern with Matt Coleman's Lab and Paul Hoeprieh's Lab, Biosciences and Biotechnology Department (6/20/11-9/20/11)

- Began work with microfluidic devices (see above)
- Grew and tested 6 select agents against 200+ different FDA approved Drugs using a cellular respiration assay (Biolog) and cell growth assay (optical density) (published work*)

*Katherine JR Lewis, Jessica K Hall, Emi A Kiyotake, Tova Christensen, Vivek Balasubramaniam, Kristi S Anseth "Epithelial-mesenchymal crosstalk influences cellular behavior in a 3D alveolus-fibroblast model system." *Biomaterials*. February, 2018, pp. 124-134

*Brett A Chromy, Maher Elsheikh, Tova L Christensen, Doug Livingston, Kyle Petersen, Jane P Bearinger, & Paul D Hoeprieh. "Repurposing screens identify rifamycins as potential broad-spectrum therapy for multidrug-resistant *Acinetobacter baumannii* and select agent microorganisms." *Future Microbiology*. July, 2012, pp. 1011-1020

Intern with Paul Hoeprieh's Lab, Biosciences and Biotechnology Department (6/20/10-9/20/10) (40 hours/week)

- Biochemical isolation of compounds in sea sponge extracts using high pressure liquid chromatography and mass spectroscopy
- Tested isolated compounds from sea sponge against 6 select agents and measured inhibition of growth using a cellular respiration assay (Biolog) and cell growth assay (optical density)
- Began repurposing project

Intern with ES&H and Paul Hoeprieh's Lab, Biosciences and Biotechnology Department (6/10/09-9/20/09) (40 hours/week)

- Used excel to record and track employee compliance with safety classes
- Updated protocols to eliminate safety hazards
- Began work with sea sponge extracts (see above)

Presentations

- Oral presentation to MCDB department. "How to soften a hard heart" University of Colorado, Boulder, CO. September 2018.
- Oral presentation for Biophysics supergroup. "The role of matrix stiffness in pathological cardiac fibroblast signaling" University of Colorado, Boulder, CO. April 2017.
- Poster presentation at Heart Valve Society Annual Meeting. "Serum from transcatheter aortic valve replacement patients reveals links to valvular interstitial cell activation" Aguado BA*, Schuetze KB*, Christensen TL, Grim JC, McKinsey TA, and Anseth KS. Monaco. March 2017. *Awarded best poster.*
- Poster presentation at Biophysical Society Annual Conference. "The role of matrix stiffness in pathological cardiac fibroblast signaling" Christensen TL*, Anseth KS, Leinwand LA, New Orleans, LA. February 2017.
- Oral presentation to MCDB department. "The role of matrix stiffness in pathological cardiac fibroblast signaling" University of Colorado, Boulder, CO. March 2017.
- Oral presentation to MCDB department. "How do cardiac fibroblasts sense and respond to mechanical cues?" University of Colorado, Boulder, CO. October 2015.
- Poster presentation at MCDB annual retreat. "Understanding the role of matrix stiffness in directing cardiac fibroblast phenotype" Christensen TL*, Anseth KS, Leinwand LA, Vail, CO. October 2015.
- Poster presentation at Butcher symposium. "Understanding the role of matrix stiffness in directing cardiac fibroblast phenotype" Christensen TL*, Anseth KS, Leinwand LA, Westminster, CO. November 2015.

Awards and Certificates

- AHA Predoctoral Fellowship (2018-present)
- "Best should teach" silver award for graduate teaching lead work
- NIH T32 Biophysics Training Fellowship (2016-2018)
- Responsible Conduct of Research Certificate (2015)
- Graduate Teaching Certificate (in progress)
- Biophysics Certificate (in progress)

Leadership

United Government of Graduate Student (UGGS) Representative for MCDB

- Attended monthly UGGS meeting with representatives from other departments to discuss important issues specific to graduate students and work to resolve these issues

Graduate Teaching Program Lead (2016-2017)

- Mentoring graduate student teachers across departments, educating teachers about different teaching and learning styles through seminars, doing teaching consultations, organizing events to encourage collaboration between departments

Expanding your Horizons Project Leader (2016)

- Hosted a seminar for girls in middle school to learn about materials science with a PowerPoint presentation and hands-on activities

Mentoring undergraduates during graduate work (current)

- Mentored 2 undergraduate students who wrote senior theses on their lab work. Helped with project design and taught them lab techniques

Posiba Data Analytics Team Manager (2014)

- Ran meetings, assigned tasks to team members, and ensured that deadlines were met

Women's captain of UCSD cycling team (2010-2012)

- Organized women's specific events and helped to organize races