Callan Monette

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Education

Ph.D., Bioengineering **2025**
Stanford University **Stanford, CA**
Advancing in vitro models of Osteosarcoma: The impact of scaffold choice and bone niche cells on disease progression and drug response

Master of Science, Bioengineering **2022**
Stanford University **Stanford, CA**

Bachelor of Science, *Cum Laude,* Computational & Applied Mathematics & Statistics **2019**
College of William & Mary **Williamsburg, VA**
Concentration in Mathematical Biology

Teaching & Educator Development Experience

Graduate Teaching Consultant **2021-2024**
Stanford University, Center for Teaching and Learning **Stanford, CA**

- Developed and facilitated workshops including Course Design Fundamentals, Leading Discussions in STEM, Leading Essential Conversations about Identity & Power, and Culturally Responsive Mentorship
- Conducted consultations, small group feedback sessions, and microteaching activities grounded in evidence-based inclusive learning strategies for graduate TAs from 10+ different departments, and received strong positive feedback that participants gained confidence in their teaching abilities and learned teaching strategies that they could implement moving forward.

Trainee, Preparing Future Professors Program **Winter 2024**
West Valley Community College, Biology Department **Saratoga, CA**
Stanford University, Vice Provost of Graduate Education **Stanford, CA**

- Planned and executed two guest lectures to a class of ~40 Introductory Biology students, implementing evidence-based active learning strategies and activities
- Engaged with a weekly practicum featuring teaching-focused faculty and administrators from a variety of institutions including community colleges and public and private teaching-focused universities

Program Facilitator, Community College Faculty Professional Development Program **2023**
Stanford University, Digital Education **Stanford, CA**

- Designed and facilitated a series of professional development sessions for community college faculty members focused on reflection and goal-setting for instructional design
- Advised faculty on adaptation of the Grow with Google Data Analytics Certificate for hybrid and in-person community college courses, with an emphasis on active and project-based learning
- Co-authored a Program Playbook outlining best practices for faculty implementation of Grow with Google Certificates within their own institutions

Pedagogy Program Specialist, Leadership in Inclusive Teaching Fellowship **2023 – 2024**
Lead mentor, Leadership in Inclusive Teaching Fellowship **2022-2023**
Stanford University, Center for Teaching and Learning **Stanford, CA**

- As Pedagogy Program Specialist, oversaw LIT program development, including co-writing a Program Handbook and facilitating two professional development workshops for a learning community of graduate students designing, implementing, and evaluating equity-minded educational development programs in their departments.
- Advised a group of 7 LIT fellows from 4 different departments as they developed and implemented projects related to inclusive teaching and educator training

Instructor, BIOE296: Promoting Effective and Equitable Teaching in Bioengineering **2021 -2023**
Stanford University, Bioengineering Department **Stanford, CA**

- Designed, implemented, and evaluated a novel, quarter-long seminar course focused on evidence-based inclusive pedagogical practices for graduate students
- Co-facilitated course sessions through highly engaging and discussion-based activities centered on principles of active learning, culturally responsive pedagogy, and universal design for learning
- Advocated for long-term sustainability of the course by securing funding (Stanford Leadership in Inclusive Teaching fellowship) and promoting inclusion of the course in the BioE graduate curriculum
- Collectively served 36 students from 4 different departments over 3 quarters teaching

Teaching Assistant Program Coordinator **2021 – 2023**
Stanford University, Bioengineering Department **Stanford, CA**

- Co-designed and facilitated quarterly orientation sessions for Bioengineering TAs centered on goal setting, inclusive teaching practices, and resource dissemination
- Coordinated and served as a mentor in the BIOE Teaching Assistant Mentors program, in which experienced TAs advised new TAs throughout the quarter
- Advocated for graduate TA needs and accomplishments through communications with Bioengineering department faculty and administrators at faculty meetings and organization of BioE TA Awards

Additional Relevant Experience

A full list of workshops I've facilitated can be found at https://tinyurl.com/MonetteWorkshops

West Valley Community College — Saratoga, CA
Guest Lecturer, BIOL 10 — March 2024

Stanford University — Stanford, CA
Course Participant, Teaching as Research — September 2024
Syllabus Reviewer, Course Design Institute — 2023-2024
Mentor, Community College Outreach Program PD Bootcamp — August 2024
Graduate Admissions Committee, Bioengineering Department — Winter 2024
Bioengineering Teaching Assistant Mentor — 2021-2023
Research Mentor, Fan Yang Lab — Summer 2022
Reviewer, Curriculum Equity Review for Bioengineering Senior Capstone — March 2021
Guest Lecturer, STEM Lecturers and Academic Teaching Staff Event Series — March 2021
Teaching Assistant, Fundamentals for Engineering Biology — Winter 2021

College of William & Mary — Williamsburg, VA
Teaching Assistant, Directed Readings in Biology — Spring 2019
Teaching Assistant, Introduction to Molecular and Cell Biology — Fall 2018
Teaching Assistant, Cellular Biophysics & Modeling — Fall 2018
Teaching Assistant, Honors Biology Laboratory — Fall 2017-Spring 2018
Guest Lecturer, Data Science, Theory & Computation — January 2018

Awards/Accomplishments

Justice, Equity, Diversity, and Inclusion (JEDI) Travel Award — 2023
Stanford University, School of Engineering

ARCS Scholarship — 2023-2024
Achievement Rewards for College Scientists (ARCS) Foundation, Northern California Chapter

Leadership in Inclusive Teaching Fellowship — 2021-2023
Stanford University, Center for Teaching and Learning

NIH Graduate Training Grant in Biotechnology (T32) — 2021-2022
Stanford University

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Bioengineering Teaching Assistant Award 2021
Stanford University, Bioengineering Department

Mentors in Teaching Fellowship 2020-2021
Stanford University Center for Teaching and Learning

Honorable Mention, Graduate Research Fellow Program 2020
National Science Foundation

First Runner Up for Undergraduate Grand Prize; Best Innovation in Measurement; Best Model 2017
International Genetically Engineered Machine (iGEM)

Publications

Callan E Monette, Alexis Seymour, William T Yu, Leighton T Wan, Andrew Sho Perley, Ross D Venook (2023). Work in Progress: Designing a course to equip Bioengineering graduate students with effective and equitable teaching skills. *American Society for Engineering Education Annual Conference Proceedings.*

Eva Gonzalez Diaz, Michelle Tai, **Callan E Monette**, Joy Wu, Fan Yang (2023). Spatially Patterned 3D Model Mimics Key Features of Cancer Metastasis to Bone. *Biomaterials.* DOI: 10.1016/j.biomaterials.2023.122163

Amanda N Quay, **Callan E Monette**, Stacey A Huang, Alexa Wnorowski, Anjali Mulchandani, Ronnie Miller (2021) Online Engagement and Outreach Activities in an ASEE Student Chapter During Turbulent Times. *American Society for Engineering Education Annual Conference Proceedings.*

Ethan M Jones*, **Callan E Monette***, John P Marken, Sejal Dhawan, Theresa Gibney, Christine Li, Wukun Liu, Alyssa Luz Ricca, Xida Ren, Xingyu Zheng, Margaret Saha (2018) Modular, part-based control of gene expression response time using protein degradation tags. *bioRxiv.* https://doi.org/10.1101/482331
These authors contributed equally to the work

Ranjani Parthasarathy, **Callan E Monette**, Sabrina Bracero, Margaret S Saha (2018) Methods for field measurement of antibiotic concentrations: limitations and outlook. *FEMS Microbiology Ecology* 94(8) https://doi.org/10.1093/femsec/fiy105

Kalen P Clifton, Ethan M Jones, Sudip Paudel, John P Marken, **Callan E Monette**, Andrew D Halleran, Lidia Epp, Margaret S Saha (2018) The Genetic Insulator RiboJ Increases Expression of Insulated Genes. *Journal of Biological Engineering* 12(23) https://doi.org/10.1186/s13036-018-0115-6

Research Experience

Stanford University, Stem Cell and Biomaterials Engineering Lab **Stanford, CA**
Advisor: Dr. Fan Yang **2020 - 2025**
Developing Tissue Engineered 3D Models for Elucidating Osteosarcoma Biology and Drug Discovery
- Characterized multiple 3D *in vitro* models for high-throughput therapeutic screening of OS
- Investigated the role of the bone cell niche in OS phenotype and drug response using a co-culture model

College of William & Mary, Interdisciplinary Honors Thesis **Williamsburg, VA**
Advisor: Dr. Margaret Saha **2018-2019**
- Built a platform for performing mammalian synthetic biology research at William & Mary
- Led a semester-long seminar course covering recent developments in mammalian synthetic biology

UT MD Anderson Cancer Center, Department of Urology **Houston, TX**
GCC Computational Cancer Biology Fellow; Advisor: Dr. Niki Zacharias Millward **Summer 2018**
- Conducted functional antibody binding assays for application in noninvasive colorectal cancer imaging
- Analyzed metabolomics data from renal cell carcinoma patients for RCC subtype screening

William & Mary International Genetically Engineered Machine (iGEM) **Williamsburg, VA**
Team Co-Leader; Advisor: Dr. Margaret Saha **2017**

Wetlab Researcher; Advisor: Dr. Margaret Saha **2016**

- Designed and executed an original synthetic biology research project to control genetic circuit response time by manipulating protein degradation (2017), providing a suite of genetic parts to precisely and predictably control genetic circuit transfer functions (2016)

William & Mary Diplomacy Lab **Williamsburg, VA**
Synthetic Biology specialist; Advisor: Dr. Margaret Saha **2017-2018**

- Collaborated with U.S. Department of State to investigate challenges in mapping global, environmental antibiotic pollution and resistance development
- Presented findings at the invitation of the U.S. Department of State to world leaders in agriculture, environmental science, international relations, and scientific diplomacy

Presentations & Posters

Beal, S., Laios, E., **Monette, C.E.**, *et al*. (2024, November). Managing the Multiple Roles of Educational Development. Panel presented at POD Network Conference, Chicago, IL.

Monette, C.E., Acedo, M., Levine, P. (2024, November). Democratizing Data Science: A Faculty PD Program for Community Colleges. Poster presented at POD Network Conference, Chicago, IL.

Monette, C.E., Yu, W., Perley, A., *et al.* (2023, June). Work in Progress: Designing a course to equip Bioengineering graduate students with effective and equitable teaching skills. Poster presented at American Society for Engineering Education Annual Conference, Baltimore, MD.

Monette, C.E., Yu, W., Perley, A. (2023, May). Promoting Effective and Equitable Pedagogical Practice in Bioengineering. Presented at the TEACH Conference, Stanford, CA.

Monette, C. E., Gonzalez Diaz, E., *et al.* (2023, October) A Tissue Engineered 3D Osteosarcoma Model to Elucidate Biology and Inform Drug Discovery. Poster presented at the Biomedical Engineering Society (BMES) Annual Conference, San Antonio, TX.

Monette, C. E., Jones, E. M., *et al.* (2019, May) Modular Control of Gene Expression Speed using Protein Degradation Tags. Poster presented at the Research in Computational Molecular Biology (RECOMB) Conference, Washington, DC.

Monette, C. E., Maity, T., *et al.* (2018, July) Nuclear Magnetic Resonance for the Interrogation of Cancer Systems. Poster presented at Institute of Biosciences and Bioengineering Symposium, Houston, TX.

Monette, C.E. (2018, April) Modular Control of Gene Expression Speed using Protein Degradation Tags. Presented at the Institute of Biological Engineering (IBE) Annual Conference, Norfolk, VA.

Parthasarathy, R., **Monette, C. E.**, Bracero, S., & Saha, M. S. (2018, February) Methods for field measurement of antibiotic concentrations: limitations and outlook. Presented at the United States Department of State, Office of International Health and Biodefense, Washington, DC.

Jones, E. M., **Monette, C. E.**, Luz-Ricca, A. (2017, November) Modular Control of Gene Expression Speed using Protein Degradation Tags. Presented at the iGEM Giant Jamboree, Boston, MA.

- *Nominated for Best Presentation*

Dhawan, S., Gibney, T., Jones, E. M., Li, C., Liu, W., Luz-Ricca, A., **Monette, C. E.**, Ren, X., Zheng, X., Conradi Smith, G., Saha, M. S. (2017, November) Modular Control of Gene Expression Speed using Protein Degradation Tags. Poster presented at iGEM Giant Jamboree, Boston, MA.

- *Awarded First Runner-Up for Undergraduate Grand Prize, Best Innovation in Measurement, Best Model, Gold Medal designation; Nominated for Best Foundational Advance, Best Composite Part, Best Part Collection, Best Education & Public Engagement, Best Poster*