

Danielle C. Spitzer

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Professional Appointments

2023–present UNIVERSITY OF PITTSBURGH
Teaching Assistant Professor of Biological Sciences

Education

2017–2023 UNIVERSITY OF CALIFORNIA, BERKELEY
Ph.D. in Molecular and Cell Biology
– Certificate in Teaching and Learning in Higher Education

2014–2017 UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
B.S. in Biology and Women’s & Gender Studies, Chemistry minor
– Highest Honors, with Distinction

Teaching Experience

2023–present UNIVERSITY OF PITTSBURGH
Instructor of Record — BIOSCI/NROSCI 1250: *Human Physiology*
– Enrollment: 130, Fall 2023
Instructor of Record — BIOSCI 1010: *Communicating in the Biological Sciences*
– Enrollment: 22, Fall 2023

2021 THE MARINE BIOLOGICAL LABORATORY
Teaching Assistant — *Embryology: Concepts & Techniques in Modern Developmental Biology*
– Enrollment: 18, Summer 2021

2018–2022 UNIVERSITY OF CALIFORNIA, BERKELEY
Instructor — MCB 375: *Pedagogy for MCB Grad Student Instructors*
– Enrollment: 74 (total), 19 (my section), Fall 2023
– Co-instructors: Robin Ball and Hannah Nilsson (most instruction done in individual sections)
Graduate Student Instructor^{*†} — MCB 141: *Developmental Biology*
– Enrollment: 120 (total), 60 (my discussion sections), Spring 2020
Graduate Student Instructor — MCB 136: *Human Physiology*
– Enrollment: 120 (total), 60 (my discussion sections), Fall 2018

2015–2017 UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
Developer, Instructor — SPCL 400: *Landmark Discoveries in Mole. Bio. & Genetic Engineering*
– Enrollment: 6, Spring 2017
– Co-developer and co-instructor: Jeet Patel
Lead Supplementary Instructor[‡] — BIOL 202: *Molecular Biology and Genetics*
– Enrollment: ~220/semester

^{*†‡} indicates teaching award received for this role

Professional Development and Leadership in Teaching

- 2022–present **Center for Physiology Education Core Concepts Monthly Huddle** — Group member
- 2022 **UC Berkeley Presidential Chair Fellows Curriculum Enrichment Grant Program** — Graduate Student Assistant Researcher with MCB136 Physiology Re-Design Team
– Highlighted in: [“Phixing Physiology: Course revamp trains students to think like scientists”](#)
- 2021–present **Anatomy and Physiology Online Teaching and Learning Community** — Group member
- 2020–present **University STEM Education Community of Practice** — Group member and organizer
- 2020 **UC Berkeley MCB Online Learning Task Force** — Working group member
– Created a web page: [“Resources for Teaching Remotely”](#)
- 2019–2020 **UC Berkeley MCB Graduate Teaching Course** — Working group member
– Highlighted in: [“New Berkeley pedagogy course introduces the science of teaching”](#)
- 2018–2023 **UC Berkeley Science Education Journal Club** — Founder and organizer
– Highlighted in: [“Strategic Teaching: Science Education Journal Club supports evidenced-based pedagogy”](#)
- 2017 **NIH High School Scientific Training and Enrichment Program** — Amgen Education Fellow
– Highlighted in: [“Building a Toolkit for Becoming an Effective Mentor and Educator”](#)

GUEST INSTRUCTION

- 2023 **BIOL 103: How Cells Function.** UNC Chapel Hill, ~100 students
- 2022 **MCB 32: Introductory Human Physiology.** UC Berkeley, ~420 students
- 2022 **MCB 136: Human Physiology.** UC Berkeley, ~150 students (4 class sessions)
- 2016 **BIOL 202: Molecular Biology and Genetics.** UNC Chapel Hill, ~220 students

COURSEWORK

- 2018 UC Berkeley PMB 375: *Workshop on teaching*
- 2018 CIRT Network MOOC: *An Introduction to Evidence-Based Undergraduate STEM Teaching*

Research Experience

- 2017–2023 UNIVERSITY OF CALIFORNIA, BERKELEY, DEPT. OF MOLECULAR AND CELL BIOLOGY
Graduate Student Researcher, NSF Graduate Research Fellow — Iswar Hariharan Lab
– Dissertation project: Cell adhesion molecules as regulators of epithelial growth in *Drosophila*
– Mentorship: Luigi Viggiano (undergrad), Anthony Rodríguez-Vargas (rotation student)
- 2014–2017 UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL, DEPT. OF PATHOLOGY AND LAB MEDICINE
Research Assistant — Scott Williams Lab
– Honors thesis project: Investigating a potential role for Nectin-2 and -4 in palate closure
- 2016 COLUMBIA UNIVERSITY, DEPT. OF GENETICS AND DEVELOPMENT
Amgen Scholar — Benjamin Ohlstein Lab

2015 THE RESEARCH FOUNDATION FOR SUNY; SUNY ALBANY, DEPT. OF BIOLOGY
Research Assistant — Melinda Larsen Lab

ADVANCED TRAINING

2019 THE MARINE BIOLOGICAL LABORATORY
Student — *Embryology: Concepts & Techniques in Modern Developmental Biology*

Professional Service and Activities

- 2023-2024 **Pitt Biological Sciences Undergraduate Honors Committee** — Member
- 2020-2021 **UC Berkeley MCB Graduate Program Admissions Committee** — Student Representative for the Division of Genetics, Genomics, & Development (elected position)
- 2019-2023 **Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS, UC Berkeley Graduate Chapter)** — Member, Internal Affairs Co-Chair (2021-2022)
- 2019-2021 **UC Berkeley inclusive Molecular and Cell Biology (iMCB+)** — General member, Research Group member, Research Group Lead (2020-2021)
– Co-authored reports: “Data Collection Using Qualitative Interviews” (2020), “Best Practices for Tutoring of Graduate Students” (2021).
- 2019-2021 **UC Berkeley Marian E. Koshland Memorial Graduate Student-Run Seminar Series** — Organizing Committee member (elected position)
- 2018-2023 **UC Berkeley MCB Graduate Network** — Member
– Member of a committee that organized and hosted the 2019 MCB Wellness Symposium.
- 2018-2019 **UC Berkeley MCB Undergraduate Student Association (mcbUSA)** — Mentor
- 2016-2017 **UNC Biology Student-Faculty Forum** — Founding member
- 2014-2017 **UNC Beta Beta Beta Biological Honor Society (Tau Iota Chapter)** — Member, Fundraising Chair (2015-2016), Co-President (2016-2017)

PANEL PRESENTATIONS (*denotes moderator role)

2022	*Third Year Fireside Chat	Berkeley MCB Graduate Network
2021	*Fourth Year Fireside Chat	Berkeley MCB Graduate Network
2021	New GSI Orientation: former GSI panel	Berkeley Dept. of Molecular and Cell Bio.
2021	Acing the grad school interview	Berkeley MCB/PMB admissions committees
2020	How to choose a rotation	Berkeley MCB Graduate Network
2020	Virtual teaching technology workshop	Berkeley MCB Graduate Network
2020	*Fellowship panel for graduate students	Berkeley SACNAS
2020	*NSF GRFP fellowship panel for REU students	Berkeley SACNAS
2019	*How to pass your qualifying exam	Berkeley MCB Graduate Network
2019	*NSF GRFP fellowship panel for graduate students	Berkeley SACNAS

PEER REVIEW

Ad hoc reviewer for: CourseSource

Publications

1. [preprint] The cell adhesion molecule Echinoid promotes tissue survival and separately restricts tissue overgrowth in *Drosophila* imaginal discs.
Spitzer, DC, Sun, WY, Rodríguez-Vargas, A, Hariharan, IK (2023). bioRxiv. doi.org/10.1101/2023.08.04.552072
2. Simulating cortical rotation, axis induction, and experimental embryology in amphibian embryos using clay models.
Spitzer, DC (2023). CourseSource. 10. doi.org/10.24918/cs.2023.22
3. AGS3 antagonizes LGN to balance oriented cell divisions and cell fate choices in mammalian epidermis. Patiño Descovich, C, Lough, KJ, Jena, A, Wu, JJ, Yom, J, Spitzer, DC, Uppalapati, M, Kedziora, KM, Williams, SE (2023). eLife. 12. [PMID: 37017303](https://pubmed.ncbi.nlm.nih.gov/37017303/)
4. A flagellate-to-amoeboid switch in the closest living relatives of animals.
Brunet, T, Albert, M, Roman, W, Coyle, MC, Spitzer, DC, King, N (2021). eLife. 10. [PMID: 33448265](https://pubmed.ncbi.nlm.nih.gov/33448265/)
5. Disruption of the nectin-afadin complex recapitulates features of the human cleft lip/palate syndrome CLPED1.
Lough, KJ, Spitzer, DC, Bergman, AJ, Wu, JJ, Byrd, KM, Williams, SE (2020). Development. 147(21):dev189241. [PMID: 32554531](https://pubmed.ncbi.nlm.nih.gov/32554531/)
6. Telophase correction refines division orientation in stratified epithelia.
Lough, KJ, Byrd, KM, Descovich, CP, Spitzer, DC, Bergman, AJ, Beaudoin, GM, Reichardt, L, Williams, SE (2019.) eLife. 8. [PMID: 31833472](https://pubmed.ncbi.nlm.nih.gov/31833472/)
7. RAR α and RAR γ Reciprocally Control K5⁺ Progenitor Cell Expansion in Developing Salivary Glands.
DeSantis, KA, Stabell, AR, Spitzer, DC, O'Keefe, KJ, Nelson, DA, Larsen, M (2017). Organogenesis. 13(4): 125-140. [PMID: 28933645](https://pubmed.ncbi.nlm.nih.gov/28933645/)
8. Closing the gap: mouse models of cell adhesion in secondary palatogenesis.
Lough, KJ, Byrd, KM, Spitzer, DC, Williams, SE (2017). J Dent Res. [Special Issue on Orofacial Clefting, Craniofacial and Dental Anomalies] 96(11): 1210-1220. [PMID: 28817360](https://pubmed.ncbi.nlm.nih.gov/28817360/)

Presentations

ORAL PRESENTATIONS

1. Context matters: Loss of Echinoid can cause clonal elimination or organ overgrowth.
Berkeley MCB Thesis Research Presentations. Berkeley, CA, May. 18, 2023.
2. Context matters: Loss of Echinoid can cause clonal elimination or organ overgrowth.
Berkeley MCB Genetics, Genomics, Evolution, and Development Retreat. Pacific Grove, CA, Oct. 23, 2022.
– *Best Talk Award*
3. Enhancing equity by enriching physiology courses with active learning and low-stakes assessments.
Berkeley Teaching and Learning Project Showcase. Online, May 6, 2022.
– *Co-presented with Diana Bautista, Ellen Lumpkin, and Madeline Arnold.* [Slide deck](#) / [Video \(07:18-33:02\)](#)
4. Cell adhesion molecules as mediators of competitive cell-cell interactions in *Drosophila* epithelia.
Berkeley MCB Genetics, Genomics, and Development Retreat. Online, Oct. 23, 2020.
5. Calibrating an internal clock for precise staging of *Drosophila* larval development.
Berkeley MCB Student Microsymposium. Berkeley, CA, Apr. 30, 2018
6. Modeling and modifying tumor-host interactions in *Drosophila*.
Berkeley MCB Student Microsymposium. Berkeley, CA, Dec. 5, 2017.

- Investigating a potential role for Nectin-2 and -4 in palate closure.
John K. Koeppe Undergraduate Honors Research Symposium. Chapel Hill, NC, Apr. 5, 2017.
- Identification of genes regulating amitotic division of enterocytes in *Drosophila melanogaster*.
Amgen Scholars Program final presentation, New York, NY, Jul. 28, 2016.

POSTER PRESENTATIONS

- Context matters: regulation of cell growth and survival in mosaics.**
Berkeley MCB Cell, Development, and Physiology Retreat. Pacific Grove, CA, Sep. 24, 2022.
- Context matters: regulation of cell growth and survival in mosaics.**
Joint Society for Developmental Biology and Pan-American Society for Evolutionary Developmental Biology Meeting. Vancouver, BC, Jul. 17-Jul. 20, 2022.
- Hands-on simulation of *Xenopus* development and experimental embryology engages students and promotes learning.**
Joint Society for Developmental Biology and Pan-American Society for Evolutionary Developmental Biology Meeting. Vancouver, BC, Jul. 17-Jul. 20, 2022.
- Context-dependent regulation of cell growth and survival by the cell adhesion molecule Echinoid.**
Berkeley MCB Genetics, Genomics, and Development Retreat. Berkeley, CA, Oct. 15, 2021.
- Design of a genetic screen that will identify novel non-autonomous regulators of epithelial growth and cell survival in *Drosophila*.**
Marine Biological Laboratory Embryology Course, Woods Hole, MA, Jun. 2-Jul. 15, 2019.

Public Outreach and Education

- 2019–2020 **Letters to a Pre-Scientist**
 2019 **Skype a Scientist**
 2018–2020 **Science at Cal: Grounds for Science** (Organizer)

OUTREACH PRESENTATIONS

- 2021 Feminist developmental biology: how to build a body (and a better world)
 Berkeley High School STEMInist Club
 2020 A scientist's perspective on the novel coronavirus
 Colonie Central High School (alma mater)

Professional Affiliations

- 2020– **Society for the Advancement of Biology Education Research**
 2020– **Society for Developmental Biology**
 2019– **Genetics Society of America**

Fellowships, Awards, and Honors

- 2022 **Best Talk Award: Genetics, Genomics, Evolution, and Development Retreat** (UC Berkeley)
 2022 **Graduate Division Conference Travel Grant** (UC Berkeley)
 2022 ***Teaching Effectiveness Award** (UC Berkeley) [[Award essay](#)]
 Recognizes outstanding GSIs who identified a particular teaching problem in their classes and developed, implemented, and assessed an appropriate and effective response.
 2022 **Graduate Assembly Professional Development Award** (UC Berkeley)
 2021 **†Outstanding Graduate Student Instructor Award** (UC Berkeley)

2017–2022 **Graduate Research Fellowship** (NSF)

2017 **Carolina Research Scholar** (UNC)

2017 **Irene F. Lee Award** (UNC)

Presented annually to the woman of the senior class who is judged most outstanding in leadership, character, and scholarship.

2017 **Phi Beta Kappa** (UNC)

2016 **†Student Undergraduate Teaching and Staff Award** (UNC)

Teaching Assistant Award: a university-wide, student-selected award based on demonstrated and consistent excellence in undergraduate teaching.