

Alexandria Muller | ali.muller@colorado.edu
Curriculum Vitae

Assistant Professor, School of Education
Curator of Education, Museum of Natural History
University of Colorado, Boulder

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EDUCATION

2018 - 2025 **Ph.D. Science Education**, University of California-Santa Barbara
Dissertation Title: An Investigation of Diversity, Equity, Accessibility, and
Inclusion (DEAI) Practices and Challenges in Science Centers
2018 - 2021 **M.A. Science Education**, University of California-Santa Barbara
2013 - 2017 **B.S. Ecology & Evolutionary Biology**, University of Arizona
Minors: Marine Science, Spanish Literature

ACADEMIC POSITIONS

University of Colorado, Boulder

Assistant Professor, School of Education

Aug 2026 – Present

Curator of Education, Museum of Natural History

Aug 2026 – Present

Rowan University

Postdoctoral Research Fellow, Experiential Engineering Education

Sept 2025 – Present

University of California, Santa Barbara

Teaching Assistant

Gevirtz Graduate School of Education

Sept 2018 – May 2025

Department of Earth Sciences

Sept 2018 – Dec 2018

Program Coordinator, Center for Scientific Partnerships

Apprentice Researchers

Summer 2019, 2024

Quantum Foundry Summer Internship Program

Summer 2024

School for Scientific Thought

Sept 2018 – Aug 2025

Graduate Student Researcher

Practice-driven Research to Advance Constructivism-informed Tools
for Informal Contexts in Education (PRACTICE); NSF #1906320

Sept 2019 – Jun 2023

Engineering Explorations, NSF #EEC-1824586

Sept 2018 – Jun 2023

Curie-osity

Sept 2019 – Jun 2023

Enabling Practical-scale Quantum Computing (EPiQC), NSF
#1730088

Sept 2018 – Jun 2019

University of Arizona

Education Outreach Specialist, Biosphere 2

Aug 2016 – May 2018

Undergraduate Student Researcher, Marine Science Lab @ Biosphere 2

Jan 2014 – May 2017

RESEARCH EXPERIENCE

Entrepreneurial Mindset in the First Year (EMIFY)

Developed and implemented study design to investigate community-building practices, teaching approaches, and sense of belonging for first-year engineering program faculty.

Produced 1 publication

Engineering Co-designed Learning in Planetarium Spaces and Exhibits (ECLiPSE)

Collaborated with Rowan's Edelman Planetarium to develop a senior design clinic for engineering students around science communication, exhibit development, and professional skills. We are submitting NSF grants in Spring 2026 to fund this work.

How it Worked Experience

Designed and implemented a study to investigate the learning outcomes of a history-of-engineering course where students develop and implement a museum exhibit around an engineering marvel.

Apprentice Researchers

Designed and led a research study to understand how participation in Apprentice Researchers influences student STEM identity, perceptions of university research, and interest in STEM careers as well as graduate mentor views of mentorship in academia.

Produced 1 publication, 2 conference presentations

Practice-driven Research to Advance Constructivism-informed Tools for Informal Contexts in Education (PRACTICE), NSF AISL#1906320

Conducted a qualitative research study on effective facilitation practices within science museum spaces to inform the development of several museum professional development programs.

Produced 1 publications, 12 conference presentations

Engineering Explorations, NSF RFE #EEC-1824586

Led a team of museum staff, undergraduate, and graduate students in conducting research on what makes quality engineering educational programming that supports the learning of diverse students and teachers using design-based research methods.

Produced 8 publications, 23 conference presentations

The Curie-osity Program

Developed and led several research projects investigating youth and undergraduate students' individual identity, STEM identity, and views of STEM professionals.

Produced 4 publications, 19 conference presentations

Enabling Practical-scale Quantum Computing (EPiQC), NSF #1730088

Used design-based research methods to develop hands-on activities and courses for K-22 students centered around quantum mechanics properties, develop informational Zines, hands on activities, and presentations/lectures, and conducted research on learning trajectories of complex topics.

Produced 2 publications, 5 conference presentations

TEACHING EXPERIENCE

UNIVERSITY

Independent Research Study (ED199)	2018 – 2025
Greenworks (ED136), Teaching Assistant	2022 – 2024
Introduction to Leadership Development (ED173), Teaching Assistant	2019 – 2024
The Research University and The Transfer Student Experience (ED118/20), Teaching Assistant	2021 – 2024
Teaching and Teachers (ED150), Teaching Assistant	2021 – 2022
Elementary Science Teaching Methods (ED320S), Teaching Assistant	2020

Introduction to Oceanography (EARTH4), Teaching Assistant	2018
<u>INFORMAL SETTINGS</u>	
Quantum Computing Instructor, School for Scientific Thought Audience: 9-12 th Grade Students	2019
Exhibit Facilitator, Santa Barbara Natural History Museum Sea Center Audience: All ages museum visitors	2018 – 2019
Reading Tutor, McEnroe Reading and Language Arts Clinic Audience: 1 st – 6 th grade students	2018 – 2019
Education Outreach Specialist, Biosphere 2 Audience: All ages museum visitors, K-12 field trip groups	2016 – 2018
Principal Investigator, Summer Science Academy at the University of Arizona Audience: Undergraduate summer interns	2016 – 2017
Marine Science Outreach Educator, Marine Science Outreach Clinic Audience: K-12 field trip groups	2016
Program Coordinator, Tucson Children's Museum Audience: Children museum visitors	2014
Program Development Intern, Chandler Museum Audience: All ages museum visitors, K-12 field trip groups	2009 – 2013

CURATION OF EDUCATIVE MATERIALS

Engineering Co-designed Learning in Planetarium Spaces and Exhibits (ECLiPSE)

Collaborated with Rowan's Edelman Planetarium to develop a senior design clinic module, museum exhibits, exhibit development guides, and 6 curricular modules. for engineering students around science communication, exhibit development, and professional skills. We are submitting NSF grants in Spring 2026 to fund this work.

First-Year Engineering Clinic

Developed module on professional communication for faculty of FYE instructors and collaborated on the revamping of course materials and assignments.

School for Scientific Thought

Developed and led professional development program for graduate student and postdoctoral fellow instructors on best pedagogical practices for engaging high school students from diverse backgrounds that center student inquiry.

Practice-driven Research to Advance Constructivism-informed Tools for Informal Contexts in Education (PRACTICE)

Co-developed professional development modules for museum facilitators on effective facilitation practices based in Practice-based Facilitation strategies.

UCSB's Quantum Foundry

Collaborated with quantum scientists to develop 5 curricular modules to teach the foundational knowledge of quantum physics to middle and high school students.

Engineering Explorations

Developed 9 curricular modules connecting museum field trip programs to classroom learning and supplemental educative curricular materials.

The Curie-osity Program

Supported the transition of STEM curricular materials and programming online during the onset of the COVID-19 pandemic shutdowns.

Enabling Practical-scale Quantum Computing (EPiQC)

Developed hands-on activities and courses for K-22 students centered around quantum mechanics properties. Collaborated with quantum science researchers to improve science communication materials of quantum concepts via Zines, hands on activities, and presentations/lectures.

Biosphere 2 Outreach

Developed curricular modules for K-12 field trip and summer programming along with associated training materials.

Science Through Literature Program

Developed a program cart for youth visitors to engage in hands-on science activities connected to common children's literature (e.g., creating invisible ink while talking about Harold and the Purple Crayon).

Chandler Museum

Developed Historical Science curriculum to teach visitors about the history of the City of Chandler through hands-on science activities. Wrote curricula and trained staff on how to facilitate programming. Collaborated to develop new exhibits based on artifacts in the Chandler Museum collections that reflected current topics while educating about historical events. Supported the transition of artifacts into digital format for presentation on the new Chandlerpedia Website.

FELLOWSHIPS AND GRANTS

FG11. LEGO Fellowship (\$300,000, under review)

University of Colorado, Boulder, *LEGO Foundation*

FG10. The Max and Victoria Dreyfus Foundation (\$19,945, under review)

Edelman Planetarium

FG9. Inspire Grants for Small Museums (\$75,000)

Edelman Planetarium, *Institute of Museum and Library Services*

FG8. Graduate Opportunity Fellowship (\$24,000)

Graduate Division, *University of California- Santa Barbara*

FG7. Gale and Richard Morrison Fellowship (\$4,500)

Gevirtz Graduate School of Education, *University of California- Santa Barbara*

FG6. Philip and Helen Green Research Fellowship (\$3,340)

Gevirtz Graduate School of Education, *University of California- Santa Barbara*

FG5. Dissertation Fellowship (\$15,000)

Gevirtz Graduate School of Education, *University of California- Santa Barbara*

FG4. Basu Fellowship (\$200)

NARST Equity & Ethics Committee

FG3. Morrison Fellowship Award (\$4,500)*Gevirtz Graduate School of Education, University of California- Santa Barbara***FG2. Regents Fellowship (\$58,000)***University of California- Santa Barbara***FG1. Graduate Research Fellowship Program- Honorable Mention***National Science Foundation***AWARDS****Michael D. Young Engaged Scholar Award**

June 2025

*University of California- Santa Barbara***Education Grad Slam Finalist (\$500)**

March 2025

*Graduate Division, University of California- Santa Barbara***Education Grad Slam 2nd Place (\$250)**

Mar 2023

*Graduate Division, University of California- Santa Barbara***Graduate Research Fellowship Program- Honorable Mention**

April 2020

*National Science Foundation***SERVICE**TO THE PROFESSION**Committee Member**

2023 – Present

NARST Ethics and Equity Committee

Committee Member

2021 – Present

Rising Educational Scholars Helping Advance Partners & Equity (RESHAPE)

Visioning Committee

Committee Member

2024 – 2025

NARST Publications Advisory Committee

Volunteer

2022 – 2024

NARST Graduate Student Networking and Communications Committee

Peer Reviewer

American Society of Engineering Education (ASEE)

Journal of Higher Education Outreach and Engagement (JHEOE)

National Association of Research in Science Teaching (NARST)

American Educational Research Association (AERA)

The Physics Teacher Journal

Physics Education Research Conference (PERC)

UNIVERSITY**Co-President**

2024 – 2025

Graduate Student Association Education, UC Santa Barbara

Graduate Student Member

2024 – 2025

Dean of Students Search Committee, UC Santa Barbara

Graduate Student Member

2022 – 2025

Human Subjects Committee, UC Santa Barbara

Graduate Student Representative

2021 – 2025

GGSE Climate & Communications Task Force, UC Santa Barbara

Vice President of Social and Community Building	2021 – 2022
Graduate Student Association Education, UC Santa Barbara	
Graduate Student Mentorship Consultant	2020 – 2021
Inter-cohort Mentorship Program, UC Santa Barbara	
Graduate Student Representative	2019 – 2020
Funding Workshop Committee, UC Santa Barbara	
Graduate Student Representative	2019
Strategic Planning Committee, UC Santa Barbara	

DISSEMINATED SCHOLARSHIP

(*Museum Practitioners, ^Undergraduate Students)

SUMMARY OF DISSEMINATION EFFORTS

Type	Quantity
Journal Articles	8
Peer-Reviewed Conference Proceedings	7
Book Chapters	4
Publications in Progress	6
Invited Talks	4
Conference Presentations	80
Facilitated Workshops	6

JOURNAL ARTICLES

- J8. **Muller, A.**, Mallouk, K.E., Hylton, J.B., Kecskemety, K. (in press). Supporting Capacity for Change-Making in First-Year Engineering Programs Through an Intentionally Designed Community of Practice. Submitted to *American Journal of STEM Education*.
- J7. Goeke, M., **Muller, A.**, Alvarez-Vargas, D., Van Steenis, E. (2023). Using Mediating Artifacts to Push for Greater Equity in Research Practice Partnerships. *The Assembly*, 5(1), 12-39.
- J6. *Skinner, R., Harlow, D., *Gunther, D., *Wesolowski, K.J., Marckwordt, J., **Muller, A.** (2022). Facilitating Learner-Centered Interactions Through Applied Improvisation. *Connected Science Learning*.
- J5. **Muller, A.**, *Connolly, T., *Skinner, R., Galisky, J., Christman, D., Hirst, C., Harlow, D. (2022). Wondering about Wobbling: An Earthquake design challenge. *Science and Children*.
- J4. Marckwordt, J., **Muller, A.**, Harlow, D., Franklin, D., Landsberg, R. (2021). Entanglement Ball: Using Dodgeball to Introduce Quantum Entanglement. *The Physics Teacher*.
- J3. **Muller, A.**, Christman, D., Rice, M., ^Soto-Apolinar, F., Hirsch, S., Arya, D. (2021). Undergraduate motivations for participating in afterschool programs: A case study of The STEMInist Project. *Afterschool Matters*, 34, 20-29.
- J2. **Muller, A.**, *Connolly, T., *Skinner, R., & Harlow, D. (2020). Extending Learning of Engineering Beyond the Field Trips. *Science and Children*, 58(1), 70-75.

- J1. Harlow, D., *Skinner, R., *Connolly, T., & **Muller, A.** (2020). Partnering to develop coordinated engineering education program across schools, museum field trips, and afterschool programs. *Connected Science Learning*.

PEER-REVIEWED CONFERENCE PROCEEDINGS

- CP7. Tawney, J., **Muller, A.**, Mallouk, K. E., Jamison, C., Perry, J. (2026). Thriving in STEM: A holistic model for postdoctoral training through the Cultivating Outstanding Researchers and Educators (CORE) training program. *2026 American Society for Engineering Education*.
- CP6. **Muller, A.**, Connolly, T., Harlow, D. (2026). Bridging Formal and Informal Learning: Linking Classroom and Museum Experiences in Engineering Education. *2026 American Society for Engineering Education*.
- CP5. **Muller, A.**, Harlow, D., *Skinner, R., Garcia, L. (2021). Student Communication of Engineering Design Solutions. *2021 American Society for Engineering Education Conference Proceedings*.
- CP4. Harlow, D., *Skinner, R., **Muller, A.** (2021). Engineering Explorations: Connecting K-12 classroom learning and field trip experiences through engineering design. *2021 American Society for Engineering Education Conference Proceedings*.
- CP3. Franklin, D., Palmer, J., Jang, W., Lehman, E., Marckwordt, J., Landsberg, R., **Muller, A.**, Harlow, D. (2020). Exploring Quantum Reversibility with Young Learners. *International Computing Education Research Conference Proceedings*.
- CP2. **Muller, A.**, *Connolly, T., *Skinner, R., Christman, D. M. & Harlow, D. (2020). Design Principles to Support Physics and Engineering Learning in Complementary Classrooms and Field Trip Activities. *Physics Education Research 2020 Conference Proceedings*.
- CP1. **Muller, A.**, *Connolly, T., *Skinner, R., Harlow, D., (2019). Design-based research project to develop science and engineering program linking field trip experiences to classroom experiences. *Physics Education Research 2019 Conference Proceedings*.

BOOK CHAPTERS

- B4. Arya, D., Pihen Gonzalez, E., Christman, D., Ozgen, D., Cano, J., **Muller, A.**, Shackley, M., Meier, V., Mottus, R. (2024). Rising with the Tides of Change Through Community Based Literacies. In M. Mahmood, M. Elaine, & J. Cano (Eds.), *University-Community Partnerships for Transformative Education: Sowing Seeds of Resistance and Renewal*.
- B3. **Muller, A.**, Christman, D. M., McBeath Nation, J., ^Mitchell, J., ^Vu, K., ^Paesler, N., Arya, D. J. (2024). Fostering belonging in a university research community of practice. In E. Rueda & C. L. Swift (Eds.), *Academic Belonging in Higher Education* (pp. 128 – 144). Routledge. DOI: 10.4324/9781003443735-12.
- B2. Arya, D., **Muller, A.**, Cano Barrios, J., Huyen, F., Rice, M., Christman, D. (2022). Undergraduate service learning as a context for exploring the ‘Institutional Void’ of higher education. In *Pursuit of Liberation: Critical Service-Learning as Capacity Building for Historicized, Humanizing, and Embodied Action*.

- B1. Harlow, D., Marckwordt, J., **Muller, A.** (2019). Looking Ahead: A Vision of Informal Science Education in 2070. In B. Akpen (Ed) *Science Education: Visions of the Future*.

PUBLICATIONS IN PROGRESS

- IP6. Mallouk, K.E., **Muller, A.** (in preparation). Salient Taxonomies for First-Year Engineering Programs. Targeting *Journal of Teaching in Higher Education*.
- IP5. **Muller, A.**, Mallouk, K.E., Kecskemety, K., Hylton, J.B., Bringardner, J. (in preparation). Leadership Identity Development in Leaders of First-Year Engineering Programs. Targeting *Studies in Engineering Education*.
- IP4. **Muller, A.** (in preparation). A Framework for Engaging in DEAI Efforts. Targeting *Journal of Museum Education*.
- IP3. Andersen, A., **Muller, A.**, Chen, J., Harlow, D., and *Skinner, R. (in preparation). “Yes, and!” How improvisation supports creative facilitation. Targeting *Journal of Museum Education*.
- IP2. **Muller, A.**, Chatterton, K., ^Trat, J., ^Elliott, C. (in preparation). Research is for Me: How participation in high school research internship promotes sense of belonging in STEM research communities of practice. Targeting *Journal of Women and Minorities in Science and Engineering*.
- IP1. **Muller, A.**, Marckwordt, J., *Skinner, R., Harlow, D. (in preparation). Informal Science Educators Perceptions of their Role in Visitor Science Identity Development. Submission to *Journal of Museum Education*.

INVITED TALKS

- IT4. **Muller, A.** (2026, February 2) Engineering Co-designed Learning in Planetarium Spaces and Exhibits (ECLiPSE). Presented at Rowan University College of Engineering, Glassboro, New Jersey, United States.
- IT3. **Muller, A.** (2026, January 15) The THRIVE Postdoctoral Experience. Presented at the Gevirtz Graduate School of Education, Santa Barbara, California, United States.
- IT2. Harlow, D., **Muller, A.**, (2019, November 8) The Design of Museums and Aquariums. Presented at Stanford University, Virtual.
- IT1. **Muller, A.**, Harlow, D., (2019, August 7) Engineering Explorations: How do we make field trips last?. Presentation at the University of California at Santa Barbara Graduate Division, Santa Barbara, California, United States.

CONFERENCE PRESENTATIONS

- P81. **Muller, A.** (2026, April 19-22). A Framework for Systematic Radical Reimagining of Science Museums. [Paper presentation]. NARST Annual International Conference, Seattle, WA, United States.
- P80. **Muller, A.**, Trat, J., Ibsen, W. (2026, April 19-22). *Fostering Belonging in a STEM Academic Community of Practice through a Summer Research Internship*. [Paper presentation]. NARST Annual International Conference, Washington, D.C., United States.

- P79. Trat, J., Elliott, C., **Muller, A.**, Ibsen, W. (2025, May 15-16). Pipettes & Perspectives: Measuring Belonging in STEM Community of Practice One Drop at a Time. [Poster Presentation]. Gevirtz Graduate School of Education Research Conference, Santa Barbara, CA, United States.
- P78. **Muller, A.**, *Comer, A., *Threlkeld, J., *Todd, K.T. (2024, September 27-30). *IDEAs at Work: Exploration of Creative Approaches to Inclusion, Diversity, Equity, and Accessibility*. [Conference session]. Association for Science and Technology Centers (ASTC) Annual Conference, Chicago, Illinois, United States.
- P77. Garcia, R., Connolly, T., **Muller, A.**, Goeke, M. (2024, September 27-30). *Swipe Right on Research Practitioner Partnerships: How to Find “the One” for You*. [Conference session]. Association for Science and Technology Centers (ASTC) Annual Conference, Chicago, Illinois, United States.
- P76. **Muller, A.**, ^Castillo, A., ^Rodrigues, K., Ebrahimi, S., (2024, May 17-18). *Systems for DEAI: How science museums are structured to support DEAI initiatives* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P75. ^Rodrigues, K., **Muller, A.** (2024, May 17-18). *Science and Technology Centers as Ecosystems: How Understanding Museums as a System Illuminates Barriers to Diversity, Equity, Accessibility, and Inclusion (DEAI) Practices* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P74. ^Ebrahimi, S., **Muller, A.** (2024, May 17-18). *Trends of Geopolitical and Organizational factors within Diversity, Equity, Accessibility, and Inclusion (DEAI) Efforts within Science Museums* [Poster presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P73. **Muller, A.** (2024, April 11-14). Dreaming DEAI: Leadership visions and implementation efforts of DEAI work in science and technology centers [Poster presentation]. In Goeke, M., Muller, A. (Chairs). *Past, present, and futures: Intentional dreaming with early-career researchers about museum education and research* [Structured poster session]. American Education Research Association (AERA) Conference, Philadelphia, Pennsylvania, United States.
- P72. **Muller, A.**, *Skinner, R., & Harlow, D. (2024, April 11-14). Challenging traditional museum facilitation practices through practice-based facilitation professional development. In A. Muller & A. Hock (Chairs), *Educational partnerships as collective resistance: Perspectives from emerging scholars and collaborators* [Structured poster session]. American Education Research Association (AERA) Conference, Philadelphia, Pennsylvania, United States.
- P71. Goeke, M., **Muller, A.** (2024, April 11-14). *Past, present, and futures: Intentional dreaming with early-career researchers about museum education and research* [Structured poster session]. American Education Research Association (AERA) Conference, Philadelphia, Pennsylvania, United States.
- P70. **Muller, A.**, Hock, A. (2024, April 11-14). *Educational partnerships as collective resistance: Perspectives from emerging scholars and collaborators*. [Structured poster session]. American Education Research Association (AERA) Conference, Philadelphia, Pennsylvania, United States.

- P69. **Muller, A.** (2024, March 17-20). *Towards a more equitable future for science museums* [Poster presentation]. NARST Annual International Conference, Denver, Colorado, United States.
- P68. McCurdy, R., Fantacone, D., **Muller, A.**, & Simon, M. (2024, March 17-20). *Connecting science to every student's lived experiences: Promoting equitable science learning through diverse contexts and perspectives* [Conference session]. NARST Annual International Conference, Denver, Colorado, United States.
- P67. **Muller, A.**, *Skinner, R., & Harlow, D. (2024, March 17-20). *Museum facilitator understanding of exhibit potential for open-ended and interactive facilitation encounters* [Poster presentation]. NARST Annual International Conference, Denver, Colorado, United States.
- P66. Hock, A., Berger, W., **Muller, A.**, Mahoney, C., Arce-Trigatti, P., Wentworth, L. (2023, October 26-28). *RESHAPE Presents: Towards a Field of Collaborative Education Research* [Workshop presentation]. Connected Learning Science Conference, Virtual.
- P65. Andersen, A., ^Chen, J., **Muller, A.**, Harlow, D., and *Skinner, R., (2023, May 26-27). “Whoosh, Bang, Pow!” *What happens when you apply improvisation to education?* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P64. Andersen, A., **Muller, A.**, Chen, J., Harlow, D., and *Skinner, R., (2023, May 19-20). “Yes, and!” *How improvisation supports creative facilitation* [Poster presentation]. Language, Interaction, and Social Organization Conference, Santa Barbara, California, United States.
- P63. **Muller, A.**, ^Churchley, N., ^Yun, T., Garcia, L. (2023, April 18-21). *Who Can Be a Scientist?: Youth perceptions of STEM pathways* [Paper presentation]. NARST Annual International Conference, Chicago, Illinois, United States.
- P62. Andersen, A., **Muller, A.**, Chen, J., Harlow, D., and *Skinner, R. (2023, April 18-21). *Practice-based facilitation and improvisation support facilitator confidence* [Poster presentation]. NARST Annual International Conference, Chicago, Illinois, United States.
- P61. **Muller, A.**, Lucas, K., Garcia, L. (2023, April 13-16). *Views of a Biology-focused First-Year Seminar Across Stakeholder Perspectives* [Round Table Presentation]. American Education Research Association (AERA) Conference, Chicago, Illinois, United States.
- P60. Christman, D., **Muller, A.** (2023, April 13-16). *A System of Misfits: How COVID-19 disrupted undergraduate's perceived belonging in the university bioecological system* [Round Table Presentation]. American Education Research Association (AERA) Conference, Chicago, Illinois, United States.
- P59. Arya, D., Cano, J., Christman, D., Meier, V., Mottus, R., **Muller, A.**, Ozgen, D., Gonzalez, E., Shackley, M. (2023, April 13-16). *Agency, Co-Learning, and Belonging: A Three-Pronged Approach for Transforming K-12 Learning* [Poster presentation]. American Education Research Association (AERA) Conference, Chicago, Illinois, United States.
- P58. Andrade Martínez, F., Andersen, A., Riordan Jr, E., Hill, A., **Muller, A.**, Lambert, R. (2022, October 6-7). *Reimagining Hybrid Learning: A case study of shifting pedagogy to center*

humanism in course design [Paper presentation]. Engaging Teaching Symposium III, Santa Barbara, California, United States.

- P57. Mendoza, M., Harlow, D., Azzam, D., Yatchisin, G., Andersen, A., Bianchini, J., Chagolla, D., Kia-Keating, M., Milem, J., Ozuna, C., Pihen, E., Shackley, M., Su, J., Villasenor, B., **Muller, A.** (2022, May 20-21). *Sustainable Development and Climate Justice in the GGSE* [Conference session]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P56. **Muller, A.**, Christman, D., ^Barron, S., Harlow, D. (2022, May 20-21). *The Engineering Design Process in the Eyes of Students* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P55. ^Paesler, N., **Muller, A.**, Christman, D., Arya, D. (2022, May 20-21). *COVID-19 and College Identities: How COVID-19 Has Impacted College Students' Self-Identity* [Poster presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P54. ^Mitchell, J., **Muller, A.**, Christman, D. (2022, May 20-21). *Let's CHAT about COVID-19: Organizational and Functional Changes in Afterschool Programs Due to COVID-19 From a CHAT Perspective* [Poster presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P53. **Muller, A.**, Christman, D. (2022, April 22-25). *Flexible Research Practices in Afterschool Programs in the Face of a Global Pandemic* [Paper presentation]. American Educational Research Association (AERA) Conference, San Diego, California, United States.
- P52. Mitchell, J., **Muller, A.**, Christman, D., Arya, D. (2022, April 22-25). *"You're Muted": How afterschool programs worked to support youth voices in the face of COVID-19* [Paper presentation]. American Educational Research Association (AERA) Conference, San Diego, California, United States.
- P51. **Muller, A.**, ^Barron, M., Christman, D., *Skinner, R., Harlow, D. (2022, March 27-30). *Student Depictions of the Engineering Design Process* [Paper presentation]. NARST Annual International Conference, Virtual.
- P50. Christman, D., ^Ortega, K., ^Paesler, N., **Muller, A.**, ^Chen, C., ^Vu, K. (2022, March 27-30). *Youth Science Identity and Perspectives of Scientists after Participation in a STEM-based Afterschool Program* [Paper presentation]. NARST Annual International Conference, Virtual.
- P49. Christman, D., **Muller, A.** (2021, January 9-12). *Floating and Falling: 3rd grader's depictions of forces in wind columns* [Poster presentation]. AAPT Annual Winter Meeting, Virtual.
- P48. ^Randall, A., Rioux, M., **Muller, A.**, Bianchini, J., Viskupic, K. (2021, October 10-13). *Experiences and Perceived Training Needs of Geoscience Graduate Teaching Assistants* [Paper presentation]. Geological Society of America Conference, Virtual.
- P47. Harlow, D., *Skinner, R., **Muller, A.**, *Wesolowski, K. J., ^Randall, A. (2021, May 11-18). *Engineering Explorations*. 2021 STEM For All Video Showcase: COVID, Equity, and Social Justice. <https://stemforall2021.videohall.com/presentations/2014>

- P46. *Skinner, R., Harlow, D., Hough, S., Marckwordt, J., **Muller, A.**, *Wesolowski, K. (2021, May 11-18). *Informal STEM Facilitator Training Program*. 2021 STEM For All Video Showcase: COVID, Equity, and Social Justice. <https://stemforall2021.videohall.com/presentations/2083>
- P45. Randall, A., **Muller, A.**, ^Barron, M., Harlow, D. (2021, August 4-5). *Relations between Teacher, Students, and Content in Physics-based Engineering Activities* [Poster presentation]. Physics Education Research Conference (PERC), Virtual.
- P44. Harlow, D., *Skinner, R., **Muller, A.** (2021, July 26-29). *Engineering Explorations: Connecting K-12 Classroom learning and field trip experiences through engineering design* [Paper presentation]. American Society for Engineering Education (ASEE) Conference, Virtual.
- P43. **Muller, A.**, ^Randall, A., *Skinner, R., Harlow, D. (2021, July 31-August 3). *Teacher views of physics-based engineering activities* [Paper presentation]. American Association of Physics Teachers (AAPT) Conference, Virtual.
- P42. ^Mitchell, J., **Muller, A.**, Christman, D., Arya, D. (2021, May 14-15). *Education in the COVID-19 Era: A study of the organizational changes made within informal educational programs due to COVID* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P41. ^Chen, C., **Muller, A.**, Christman, D., Arya, D. (2021, May 14-15). *Undergraduate considerations when selecting a major to study at a four-year institution* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P40. ^Ortega, K., Chen, C., **Muller, A.**, Christman, D., Arya, D. (2021, May 14-15). *Youth Perceptions of Authors and Scientists in an Afterschool Program* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P39. ^Randall, A., Rioux, M., **Muller, A.**, Bianchini, J. (2021, May 14-15). *Assessing geoscience graduate teaching assistants' experiences and perceived training needs for classroom and field settings* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P38. Christman, D., **Muller, A.** (2021, May 14-15). *Somewhat an Engineer?: A Rasch Model analysis of likert-scale items to understand student ideas about scientists and engineers* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P37. Lucas, K., Garcia, L., **Muller, A.** (2021, May 14-15). *Filling the Void: The Role of Seminars in Supporting First-Year Students* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P36. **Muller, A.**, Christman, D., ^Chen, C., Arya, D. (2021, May 14-15). *Into the Unknown: An investigation into the lived experience of undergraduate students* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.
- P35. **Muller, A.**, *Skinner, R., Harlow, D. (2021, May 14-15 May 14-15). *Crafts to Communicate: How first-grade students leverage physical representations of design solutions to communicate ideas in*

engineering activities [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Santa Barbara, California, United States.

- P34. ^Mitchell, J., Christman, D., **Muller, A.**, Arya, D. (2021, May 3). *Fighting Zoom Fatigue: How literacy-based programs engaged youth and undergraduate facilitators during the COVID-19 pandemic* [Poster presentation]. Undergraduate Research and Creative Activities (URCA) Colloquium, Virtual.
- P33. **Muller, A.**, van Loon, K., Hay, M., Marckwordt, J., *Skinner, R., Harlow, D. (2021, April 7-11). *Informal Science Educators' Perceptions of Effective Facilitation Practices* [Paper presentation]. NARST Annual International Conference, Virtual.
- P32. **Muller, A.**, Christman, D. M., Ortega, K., Arya, D., Hirsch, S. (2021, April 7-11). *The Weight of Motivational Factors on Undergraduate Students' Decision to Join STEM Youth-Based Programming* [Poster presentation]. NARST Annual International Conference, Virtual.
- P31. **Muller, A.**, ^Randall, A., ^van Loon, K., ^Schwab, D., *Connolly, T., *Skinner, R., Harlow, D. (2021, April 8-12). *Teacher Perceptions of Engineering and Students' Potential in Engineering Activities* [Paper presentation]. American Educational Research Association (AERA) Conference, Virtual.
- P30. **Muller, A.**, Harlow, D., *Skinner, R. (2021, April 8-12). *Practices and Associated Strategies to Inform Facilitation of Visitors-centered Learning in Informal Science Education*. [Paper presentation]. American Educational Research Association (AERA) Conference, Virtual.
- P29. Marckwordt, J., **Muller, A.**, Christman, D. (2021, April 8-12). *Informal Educators' Approaches to Creating Rich Learning Experiences within a Physical Science Museum*. [Paper presentation]. American Educational Research Association (AERA) Conference, Virtual.
- P28. **Muller, A.**, Christman, D., Galisky, J., *Skinner, R., Hirst, C., Garcia, L. (2021, April 8-12). *Design Principles for Developing Accessible Engineering Curricula Linking Formal and Informal Spaces* [Poster presentation]. Curriculum Camp, Virtual.
- P27. **Muller, A.**, Harlow, D. (2020, July 6). *Environeering: Preparing teachers to prepare children for environmental innovation* [Conference session]. The California Higher Education Sustainability Conference, Virtual.
- P26. Christman, D., **Muller, A.**, Rice, M., ^Soto-Apolinar, F., Hirsch, S., Arya, D. (2020, July 22). *Supporting Undergraduate Facilitators to Strengthen Physics Outreach Programs* [Paper presentation]. Physics Education Research Conference (PERC), Virtual.
- P25. **Muller, A.**, *Skinner, R., *Connolly, T., Christman, D., Harlow, D. (2020, July 22). *Design Principles to Support Physics and Engineering Learning in Complementary Classrooms and Field Trip Activities* [Paper presentation]. Physics Education Research Conference (PERC), Virtual.
- P24. Franklin, D., Palmer, J., Landsberg, R., Singhal, K., Marckwordt, J., **Muller, A.**, Salac, J., Harlow, D. (2020, March 11-14). *Initial Learning Trajectories for K-12 Quantum Computing* [Poster presentation]. ACM Special Interest Group on Computer Science Education, Virtual.

- P23. Harlow, D., *Skinner, R., **Muller, A.** (2020). *Designing Complementary Activities for Learning in Classrooms and Field Trips to an Interactive Science Center*. Accepted for presentation at 2020 NARST Annual International Conference. (**Presentation was accepted but not presented because NARST 2020 was cancelled due to novel coronavirus COVID-19).
- P22. **Muller, A.**, ^Corona, V., *Skinner, R., *Connolly, T., Harlow, D. (2020). *Teacher Learning through Participation in an Outreach Program to Link Field Trips with Classroom Curriculum*. Accepted for presentation at 2020 NARST Annual International Conference. (**Presentation was accepted but not presented because NARST 2020 was cancelled due to novel coronavirus COVID-19).
- P21. Hansen, A.K., **Muller, A.**, ^Camara, Q., ^Kaur, P., ^Martinez, A. (2020). *Connecting STEM learning across boundaries: Secondary teachers' experiences facilitating field trips in Central California*. Accepted for presentation at 2020 American Educational Research Association (AERA) Conference. (**Presentation was accepted but not presented because AERA 2020 was cancelled due to novel coronavirus COVID-19).
- P20. **Muller, A.**, Harlow, D., *Skinner, R. (2020). *Delphi study to identify key facilitator practices and strategies across informal science education spaces*. Accepted for presentation at 2020 American Educational Research Association (AERA) Conference. (**Presentation was accepted but not presented because AERA 2020 was cancelled due to novel coronavirus COVID-19).
- P19. ^Ravi, P., ^Paesler, N., **Muller, A.**, Rice, M., Arya, D., Hirsch, S. (2020, April 3). *Changes in Desired Career and College Major in 4-6th Grade Youth as a Result of Participation in STEM Programming* [Poster presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.
- P18. ^Vu, K., **Muller, A.**, Rice, M., Arya, D., Hirsch, S. (2020, April 3). *The Differences in Benefits from Participation in a STEM Outreach program for Undergraduate STEM and non-STEM Facilitators* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.
- P17. ^Chen, C., ^Roche, J., **Muller, A.**, Rice, M., Arya, D., Hirsch, S. (2020, April 3). *STEM Programs' Impact on the School Subject Interests of Girls* [Poster presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.
- P16. ^Clemens, H., **Muller, A.**, Christman, D. M., Rice, M., Arya, D., Hirsch, S. (2020, April 3). *How Participation in STEM Focused Programming Resonates with Youth* [Poster presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.
- P15. **Muller, A.**, *Skinner, R., Harlow, D. (2020, April 3). *Designing Complementary Activities for Learning in Classrooms and Field Trips to an Interactive Science Center* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.
- P14. **Muller, A.**, *Skinner, R., Harlow, D. (2020, April 3). *Delphi Study to Identify Key Facilitator Practices and Strategies Across Informal Science Education Spaces* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.

- P13. **Muller, A.**, ^Schwab, D., ^van Loon, K., *Connolly, T., *Skinner, R., Harlow, D. (2020, April 3). *Identifying Key Components of Engineering Design Curriculum to Inform Future Curriculum Development* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.
- P12. **Muller, A.**, Rice, M., Christman, D., ^Soto- Apolinar, F., Hirsch, S., Arya, D., Hirsch, S. (2020, April 3). *Undergraduate Motivations to Participate as Facilitators in Youth-Based Programming* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.
- P11. Marckwordt, J., **Muller, A.**, Christman, D., *Skinner, R., Harlow, D. (2020, April 3). *Facilitator Understanding of Effective Open-Ended Facilitation Practices in a Science Museum* [Paper presentation]. Gevirtz Graduate School of Education Research Symposium, Virtual.
- P10. **Muller, A.**, *Spracher, K. (2020, March 4-6). *Expanding the Vision: University Research Practice Partnerships* [Conference session]. California Association of Museums (CAM) Conference, Los Angeles, California, United States.
- P9. *Francis, D., Landsberg, R., *Culp, K., *Maktoufi, R., **Muller, A.**, Marckwordt, J., Harlow, D. *SubbaRao, M. (2019, Sept 21-24). *Conquering Complexity with Active Engagement* [Paper presentation]. Association of Science and Technology Centers (ASTC) Conference, Toronto, Canada.
- P8. Harlow, D., *Skinner, R., Hansen, A., **Muller, A.**, Macias, M., Nation, J., Marckwordt, J., Pulgar, J., Spina, A., Arevalo, A., Lucas, K. (2019, July 24-25). *Museum-based physics education research through research-practice partnerships (RPPs)* [Parallel session]. Physics Education Research Conference (PERC), Provo, Utah, United States.
- P7. **Muller, A.**, *Skinner, R., Harlow, D. (2019, July 24-25). *Design-based research project to develop a science and engineering education program linking field trip experiences to classroom experiences* [Symposium Poster]. Physics Education Research Conference (PERC), Provo, Utah, United States.
- P6. Marckwordt, J., **Muller, A.**, Harlow, D., Landsberg, R., Franklin, D., Palmer, J., Singhal, K. (2019, July 24-25). *Outreach to the Public: Interactive Activities to Lay the Foundation for Quantum Computing* [Symposium Poster]. Physics Education Research Conference (PERC), Provo, Utah, United States.
- P5. **Muller, A.**, Marckwordt, J., Connolly, T., *Skinner, R., Harlow, D. (2019, July 22-24). *Engineering Explorations: Integrating Physics and Engineering Activities into Classrooms* [Paper presentation] American Association of Physics Teachers (AAPT) Conference, Provo, Utah, United States.
- P4. Markwordt, J., **Muller, A.**, Harlow, D., Landsberg, R., Franklin, D. (2019, July 22-24). *Make Quantum Computing More Accessible Through Interactive Activities* [Paper presentation] American Association of Physics Teachers (AAPT) Conference, Provo, Utah, United States.
- P3. **Muller, A.**, Marckwordt, J., Harlow, D., Landsberg, R., Franklin, D., Palmer, J., Singhal, K. (2019, May 22-23). *Outreach to the Public: Interactive Activities to Lay the Foundation for Quantum Computing* [Poster presentation]. EPiQC NSF Retreat, Chicago, Illinois, United States.

- P2. **Muller, A.**, Cole, J., *Lane, F. (2017, May 12). *Plastic Degradation in a Marine Environment* [Poster presentation]. University of Arizona Spirit of Inquiry Poster Conference, Tucson, Arizona, United States.
- P1. **Muller, A.** (2014, April 10). *Teaching Science through Popular Literature* [Poster presentation] University of Arizona's Honors College First Year Poster Conference, Tucson, Arizona, United States.

FACILITATED WORKSHOPS

- W6. **Muller, A.** (2023, November 7). Constructive Feedback [Workshop]. NARST Graduate Student Committee Academic Writing Series, Virtual.
- W5. **Muller, A.** (2023, October 24). Intro to Academic Writing [Workshop]. NARST Graduate Student Committee Academic Writing Series, Virtual.
- W4. **Muller, A.**, Balajiee, A., Hock, A., ^Arce-Trigatti, P., Wentworth, L. (2023, February 6). *Building the Field for Collaborative Education Research: A Framework*. Presented for the Rising Educational Scholars Helping Advance Partnerships & Equity (RESHAPE) Network, Virtual.
- W3. Sharkey, J., Kirskey, J., **Muller, A.** (2020, March 3). *Funding 102- University Funding Opportunities*. Presented for the Girvetz Graduate School of Education, Santa Barbara, California, United States.
- W2. Sharkey, J., Kirskey, J., **Muller, A.** (2019, December 9). *Funding 101- Departmental Funding Opportunities*. Presented for the Girvetz Graduate School of Education, Santa Barbara, California, United States.
- W1. **Muller, A.**, Lambert, S. (2019, November 9). *The Chemistry of the Oceans*. Presented for the I Heart STEM Festival, Santa Barbara, California, United States.