

Nicole Bowers
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EDUCATION

PhD in Learning, Literacies, and Technologies	2016-2021
Arizona State University, Tempe, AZ	
MA in Molecular Biology	2000-2003
University of Kansas, Lawrence, KS	
BS in Chemistry	1994-1997
Cumberland College, Williamsburg, KY	

Dissertation

Title Remixing Education in the Anthropocene: More-than-Human Process Inquiry with Place
Committee Dr. David Lee Carlson (chair), Dr. Mirka Koro, & Dr. Michelle Jordan

TEACHING EXPERIENCE

Higher Education

Instructor, ASU

Spring 2023- Now

- Leading courses as appointed for the EdD in Leadership and Innovation program. Courses include Systems Change and Leadership, Dynamic Contexts in Education, and Qualitative Methods in Action Research.
- Serving on special projects as appointed.
- Serving on EdD doctoral committees.
- Advising students on research design and methodology.

Academic Associate, ASU

Fall 2022

TEL 713: Qualitative Methods in Action Research

- Led activities to facilitate students' understanding and practice of qualitative research design.
- Provided ongoing feedback on student work.
- Advise students on research design and methodology.

Academic Associate, ASU

Fall 2022

TEL 702: Dynamic Contexts in Education

- Designed and led activities to facilitate students' praxes of ethics, equity, social justice, and critical inquiry.
- Provided ongoing feedback on student work.
- Advised students on research design and methodology.

Faculty Associate, ASU

Spring 2022

TEL 702: Dynamic Contexts in Education

- Designed and led activities to facilitate students' praxes of ethics, equity, social justice, and critical inquiry.
- Provided ongoing feedback for student work.
- Managed course material and assignments in Canvas.

- Designed and piloted face-to-face activities for a hybrid version of a previously online only course.
- Advised students on research design and methodology.

Graduate Teaching Intern, ASU

Spring 2020

COE 503: Introduction to Qualitative Research

- Designed and led class activities for ethnography and case study.
- Assisted instructor during class sessions.
- Managed course material in Canvas.
- Advised students on design and implementation of their final project.

Instructor, ASU

Summer 2019

EED 529: Elementary School Science Methods

- Designed and led activities to facilitate students' best practices in science pedagogy and logistics of hands-on science in elementary school classrooms.
- Designed and led activities to introduce Ambitious Science Teaching, Teacher Adaptive Expertise, The Nature of Science, Emerging Understandings of Science Concepts for Elementary Students, Project and Problem Based Learning, and Science Argumentation and Modeling.
- Facilitated the use of both state standards and NGSS in lesson plan writing and unit design.
- Facilitated student use of various instructional technologies including use of Google Classroom, Concept Mapping Software, Digital Interactive Notebooks, Storybird, Storyboard That, and Animiz.

Graduate Teaching Assistant, ASU

Fall 2018

EED 529: Elementary School Science Methods

- Designed and led lessons on science argumentation, modeling, misconceptions as emergent understanding, and teacher adaptive expertise.
- Designed and led class discussion activities.
- Organized and transferred class content from Blackboard to Canvas.

Graduate Teaching Intern, ASU

Spring 2018

LSE 542: Research Methods in Learning Sciences

- Designed and led activities for design-based research design and implementation.
- Designed and led activities for ethnographic data collection techniques including interviews, observations, and field note taking.
- Supervised students at the zoo as they collected data.
- Designed and facilitated lessons on data management.
- Facilitated student-led creation of curriculum and practices for the zoo night camp.
- Coached students on stake-holder collaboration.

Graduate Teaching Intern, ASU

Fall 2017

EED 411: Science in Elementary Schools

- Assisted instructor during class sessions.
- Designed and led a classroom activity on science argumentation.
- Designed and led a classroom activity on chemistry projects.

Adjunct Instructor, Mesa Community College, Mesa, AZ

2011-2012

BIO 100: General Biology for Non-majors

Assistant Professor, Austin Peay State University, Clarksville, TN

2004- 2007

*This was a non-tenured track position.

Intro to Biology (online); General Biology I and II; Principles of Evolution

K-12

Biology Instructor

2014-2016

BASIS Mesa, Mesa, AZ.

- Taught AP, Honors, and 8th grade Biology.
- Mentored students in projects.
- Designed online material for hybrid learning in Canvas.

Instructor

2007-2010

Szczecin International School, Szczecin, Poland

Middle School Science and IB Chemistry Instructor

- Taught 6th-7th grade science.
- Taught IB Chemistry and ran the Group 4 project.
- Collaborated to reorganize the IGCSE curriculum to fit with various national requirements.
- Acted as a form teacher for grade 6.

Elementary Classroom Teacher

- Acted as the 3rd and 5th grade classroom teacher in separate years.
- Mentored primary teacher colleagues in including more science in their lessons.
- Collaborated to organize primary-wide events and offered extracurricular dance lessons.

RESEARCH EXPERIENCE

Arizona State University, Mary Lou Fulton Teachers College. Tempe, AZ

Project Coordinator

Fall 2022

Project Coordinate

Co-PIs: Dr. Brownell and Dr. Benedict

- Conducted school/teacher recruitment and retention.
- Managed a team of facilitators and research assistants.
- Led teacher professional development and coaching sessions.
- Conducted student assessments and classroom observation.

Graduate Service Assistant

Summer 2020

Design for Global Virtual Collaboration: Women Leadership

Co-PIs: Dr. Thompson and Dr. Oakes

- Co-wrote a grant proposal for the Stevens Initiative.
- Co-designed cross-cultural women's leadership program.
- Co-designed program evaluation metrics.
- Collaborated with Moroccan counterpart in cross-cultural design elements.
- Coordinated among the grant writing team and program participants.

Graduate Research Assistant

2018-2019

Chef in The Garden Program, K-8 School, Scottsdale, AZ

PI: Dr. Merritt

- Co-constructed mini-lessons and demonstrations with the school's master gardener and volunteer chefs based on grade level and standards for different classes.
- Co-constructed follow up lessons with k-8 teachers based on the garden and cooking lessons.

- Designed ethnographic research including writing the IRB, data collection, data management, and data analysis.

Graduate Service Assistant

Winter 2018

Center for Advanced Studies in Global Education, ASU, Tempe, AZ

Co-PIs: Dr. Silova and Dr. Nielsen

- Collaborated in designing the interview protocol for study.
- Collaborated with a Vietnamese counterpart to interview various stakeholders in schools to include parents, teachers, staff, and administration.
- Led photo-voice focus groups with students and teachers at various school sites.
- Managed data for our team.

Graduate Research Assistant

2017-2019

[Connect Science](#) (IES)

Co-PIs: Dr. Rimm-Kaufmann, Dr. Merritt, and Ms. Harkins

University of Virginia, Charlottesville, VA and ASU, Tempe, AZ

- Designed and wrote NGSS science lessons around systems thinking and renewable and non-renewable energy.
- Collaborated on additional NGSS lessons and service-learning lessons.
- Collaborated in performing professional development for NGSS science lessons.
- Collaborated in project meetings to design research with a large, diverse team.
- Managed data for different research projects including, surveys, videos, small group discussions, and student artifacts.
- Consulted on qualitative research design and analysis for other team members' projects.
- Collaborated in planning the dissemination of Connect Science work post-grant.

Graduate Service Assistant

Summer 2017

Quantum Energy and Sustainable Solar Technologies ([QESST](#))

NSF Engineering Research Center (ERC), ASU, Tempe, AZ

Education Director: Dr. Jordan

Engineering Directors: Dr. Holman and Ms. Fischer

- Co-designed the program for both undergraduates and teachers in a team of engineering and educational experts.
- Brought theoretical grounding and practical experience to activity design for the program.
- Collaborated to organize the schedule of activities and run their implementation.
- Facilitated program sessions including audience and presenter roles, reading technical journal articles, introduction to NGSS, and transfer of research experience to curriculum writing.
- Led sessions for engineering graduate student mentors on best practices for mentoring undergraduates.
- Mentored individual teachers in curriculum writing.
- Co-designed the educational research project to include writing the IRB, designing surveys, interview, and observation protocols, and training new researchers in data collection techniques.
- Collected data daily throughout the nine-week program including interviews, surveys, videos, pictures, focus groups, and field notes.
- Collaborated in weekly research meetings with the educational research team.

- Collaborated in weekly program meetings with the program engineers and educational experts.

Research Assistant

Summer 2016

Learning and Cognition Lab (LCL)(IES)

PI: Dr. Chi

- Created intervention videos and teaching protocol for the pilot sessions.
- Recruited 9th grade students for the laboratory pilot intervention.
- Conducted the intervention with individual students in a laboratory setting.
- Collected and analyzed data for the pilot intervention.
- Managed data collected.

University of Kansas, Molecular and Cellular Biology Department. Lawrence, KS

Graduate Research Assistant

2003

Corbin Lab (NIH)

PI: Dr. Corbin

- Constructed transgenic flies with different developmental patterns due to *kirre* and *irre* fragments.
- Ran molecular and cellular assays to analyze data.
- Organized laboratory spending, working with the grant department.
- Mentored undergraduate science students in authentic research in the Corbin Lab.
- Led lab meetings and journal reading groups pertaining to our research.

OTHER RELEVANT EXPERIENCE

Focus Group Data Collector

Winter 2022

Barry Goldwater High School, Phoenix AZ

- Designed protocol for focus group data collection for a project on inner city youth and equitable teacher interaction experience.
- Ran 15 focus groups of 9th-12th graders.
- Organized data.

Volunteer Curriculum Designer and Instructor

Summer 2020- Winter 2021

Arizona Master Naturalists

- Redesigned face-to-face curriculum for online delivery due to COVID.
- Collected and analyzed data from previous class implementations.
- Designed new section on justice, equity, diversity, and inclusion for the master naturalist certification course.
- Facilitated online classes.

Content Editor

Winter 2018

Center for Advanced Studies in Global Education (CASGE), ASU, Tempe, AZ

- Edited for science content in lessons.
- Reformatted lessons to a unified template.
- Performed language and grammar editing.

Math and Science Specialist

Spring 2012

Phoenix College, Phoenix, AZ

- Garnered support for science awareness programs from faculty and outside partners.
- Designed programs to enhance student participation in science courses and activities.
- Designed STEM Scholar's program for inclusion and diversity.
- Mentored STEM Scholars.

- Organized a STEM Scholar space for event planning and tutoring.
- Reported outcomes in compliance with Title V Grant guidelines.
- Advised students on STEM internships and career paths.
- Collaboratively organized a STEM internship fair for college and high school students.
- Created and maintained blog.

PUBLICATIONS

Peer-Reviewed Journal Articles

- Rimm-Kaufman, S. E., Merritt, E. G., Lapan, C., DeCoster, J., Hunt, A. & **Bowers, N.** (2021) Can service-learning boost science achievement, civic engagement, and social skills? A randomized controlled trial of Connect Science. *Journal of Applied Developmental Psychology*, 74, 1-15.
- Merritt, E., & **Bowers, N.** (2020). Missed opportunities for observation-based ecology in the Next Generation Science Standards. *Science Education*, 104(4), 619-640.
- Hunt, A., Rimm-Kaufman, S.E., Merritt, E.G., & **Bowers, N.** (2020). "Because the sun is really not that big": An exploration of fourth graders tasked with arguing from evidence. *The Elementary School Journal*, 121(2), 256-282.
- Bowers, N.**, Merritt, E., & Rimm-Kaufman, S. (2019). Exploring teacher adaptive expertise in the context of elementary school science reforms. *Journal of Science Teacher Education*, 31(1), 34-55.
- Bowers, N.**, Evans, M., Jordan, M., Fisher, K., & Holman, Z. (2019). Fostering self-efficacy and engagement through an undergraduate summer internship: A model for engineering research education. Proceedings publication at the annual meeting of the American Society for Engineering Education, Tampa, FL.
- Merritt, E., **Bowers, N.**, & Rimm-Kaufman, S. (2019). Making connections: Elementary students' ideas about energy resources. *Renewable Energy*, 138, 1078-1086.
- Ricca, B., **Bowers, N.**, & Jordan, M. (2019). Seeking emergence through temporal analysis of collaborative group discourse: A complex systems approach. *The Journal of Experimental Education*, 88(3), 431-447.
- Judson, E., **Bowers, N.**, & Glassmeyer., K. (2019). Recruiting and encouraging students to complete advance placement (AP) science and math courses and exams: Policies and practices. *Journal for the Education of the Gifted*, 42(3), 243-265.

Book Chapters

- Koro, M., Vitrukh, M., **Bowers, N.**, Mark. L., & Wells, T. (2022). Mentoring (maybe) as a philosophical event. In K.W. Guyotte & J.R. Wolgemuth (Eds.), *Philosophical Mentoring in Qualitative Research*. (pp. 211-237). Routledge.
- Bowers, N.** (2022). Creating magical research: Writing for a felt reality in a more-than-human world. In M.F.G Wallace, J. Bazzul, & M. Higgins (Eds.), *Reimagining Science Education in the Anthropocene*. (pp. 73-90). Palgrave.
- Bowers, N.** & Clark, A. (2020). Soil storytelling of public intellectualism: Ideas mattering through care and collectivity. In T.C. Wells, D.L. Carlson, D. L., & M. Koro-Ljungberg (Eds.), *Intra-Public Intellectualism: Critical Qualitative Inquiry in the Academy*. Myers Education Press.

Practitioner Articles

- Merritt, E., & **Bowers, N.** (2019). Cultivating community through a chef in the garden program. *Green Schools Catalyst Quarterly*, 1(3), 56-65.

Close, K., **Bowers, N.**, Mehta, R., Mishra, P., & Henderson, J.B (2018). Students as teachers: How science teachers can collaborate with their students using peer instruction. *iWonder*, (5), 24-28.

Book Reviews

Bowers N.L., and Wilcox J. (2017, February 8). [Review of book *I Love Learning; I Hate School*": An *Anthology of College* by S. D. Blum]. Teachers College of Record. <http://www.tcrecord.org> ID Number: 21821

Select Conference Papers:

- Bowers, N.** (2020, August). *Creating magical research: Writing for a felt reality in a more-than-human world*. Paper presented at the annual meeting of the European Association of the Study of Science and Technology (EASST)/Society for Social Studies of Science (4S), Prague, CZE.
- Ricca, B., & **Bowers, N.** (2020, April). *Knowledge building as an evolutionary process: Towards a method of analysis*. Conference canceled due to COVID-19 pandemic. Paper accepted at the annual meeting of the American Educational Research Association (AERA), San Francisco, CA.
- Bowers, N.**, & Wallace, M. (2019, October). *Defying gravity: Matters of joy-full resistance to neoliberal 'orbits of practice' in STEM teacher education*. Paper presented at the annual meeting of Science Educators for Equity Diversity and Social Justice (SEEDS), Norfolk, VA.
- Bowers, N.** (2019, October). *Technique to technicity: Becoming in qualitative inquiry through writing techniques*. Paper presented at the annual meeting of the National American Association of Environmental Education (NAAEE), Lexington, KY.
- Bowers, N.** (2019, May). *Fractured science: How the multiplicities of science are exposed in the climate change debate*. Paper presented at the annual meeting of the International Congress of Qualitative Inquiry (ICQI), Champaign-Urbana, IL.
- Merritt, E., **Bowers, N.**, & Chapman, T. (2019, March). *Solving problems that matter: Elementary students applying NGSS concepts through environmental service-learning*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Baltimore, MD.

GRANTS AND FELLOWSHIPS

ASU, Mary Lou Fulton Teachers College Conference Travel Grant	
\$750 each	2017, 2018, & 2019
University Graduate Fellowship, ASU	
\$10,000	2016
\$3,000	2017
\$960	2018
\$2000	
\$857	2019
LLT Dissertation Grant Award	
\$1000	2020

TECHNICAL SKILLS

Data Analysis: SPSS, Gephi, Excel, Dedoose, MAXQDA, NVivo

Data Collection: Qualtrics, Survey Monkey, Google Forms

Project Management/Collaboration: Jira, Basecamp, Slack, Trello, Google Docs/Drive, Dropbox, Mural

LMS: Canvas, Blackboard, Google Classroom

Other: Microsoft Suite, LaTeX, Adobe Captivate, Adobe Photoshop, Adobe Premier Pro

SERVICE

<i>Invited Reviewer</i>	
Cultural Studies ↔ Critical Methodologies	2022
Taboo	2021
Reconceptualizing Educational Research Methodology	2021
Science Education	2020/21/22/23
<i>Graduate Student Representative</i>	2019-2020
Learning, Literacies, and Technologies Doctoral Program Committee	
Mary Lou Fulton Teachers College, ASU, Tempe, AZ	
<i>Awards Reviewer</i>	2019
Graduate and Professional Student Association, ASU, Tempe, AZ	
<i>Junior Editor</i>	2018-2019
Taboo: The Journal of Culture and Education, Special Issue on Waste	
<i>Graduate Student Representative</i>	2018-2019
University Hearing Board, ASU, Tempe, AZ	
<i>Reviewer</i>	2018
North American Association for Environmental Education Conference	
<i>Social Media Officer</i>	2017-2018
Teachers College Doctoral Committee, ASU, Tempe, AZ	
<i>Graduate Student Volunteer</i>	2016-2017
Teachers College Doctoral Committee, ASU, Tempe, AZ	
<i>Faculty Representative, Elementary School Science Outreach</i>	2006-2007
Austin Peay State University, Biology Department, Clarksville, TN	
<i>Faculty Representative, Student Recruiting Committee</i>	2004-2007
Austin Peay State University, Biology Department, Clarksville, TN	
<i>Faculty Representative, Textbook Selection Committee</i>	2005, 2007
Austin Peay State University, Biology Department, Clarksville, TN	
<i>Graduate Student Representative, New Professor Search Committee</i>	2002-2003
University of Kansas, Department of Molecular Biosciences, Lawrence, KS	
<i>Vice President, Graduate Student Organization for Molecular Biosciences</i>	2002
University of Kansas, Department of Molecular Biosciences, Lawrence, KS	
<i>Graduate Student Representative, University Senate</i>	2001
University of Kansas, the Department of Molecular Biosciences, Lawrence, KS	
<i>President, University of Kansas Ballroom Dancing Association</i>	2001
University of Kansas, Lawrence, KS	
<i>Vice President, University of Kansas Ballroom Dancing Association</i>	2000
University of Kansas, Lawrence, KS	

PROFESSIONAL MEMBERSHIPS

American Educational Research Association (AERA)
 International Congress of Qualitative Inquiry (ICQI)
 North American Association for Environmental Education (NAAEE)
 Science Educators for Equity Diversity and Social Justice (SEEDS)
 Society for Social Studies of Science (4S)