# Kathryn Ileana Ribay

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## ACADEMIC APPOINTMENTS

**San José State University**
> Assistant Professor of Teacher Education, 2022-present

## EDUCATION

**Stanford Graduate School of Education**
- Ph.D. in Curriculum and Teacher Education (Science Education), June 2022
- Committee: Dr. Bryan A. Brown (primary advisor), Dr. Janet Carlson, Dr. Antero Garcia
- Dissertation: *"Considering chemistry education for social justice: Examining teachers' conceptions and applications"*

**Rutgers-Camden University**
- M.S. in Chemistry, January 2016
- Original Research Thesis: "*Hybrid Modeling of Estrogen Receptor Binding Agents Using Advanced Cheminformatics Tools and Massive Public Data*"

**Harvard Graduate School of Education**
- Ed.M. in School Leadership, May 2010
- Concentration: Teacher Leadership; Area of Focus: Instructional Leadership

**Harvard University**
- A.B. in Chemistry, June 2006

**Teaching Certification**
- New Jersey Standard Certificate, Teacher of Chemistry

## PEER-REVIEWED PUBLICATIONS

Brown, B. A., Boda, P. A., **Ribay, K.**, Wilsey, M. & Pérez, G. (2021) A technological bridge to equity: How VR designed through culturally relevant principles impact students appreciation of science. *Learning, Media and Technology.* doi: 10.1080/17439884.2021.1948427

Brown, B. A., Pérez, G., **Ribay, K.**, Boda, P. A., & Wilsey, M. (2021). Teaching culturally relevant science in virtual reality: "When a problem comes, you can solve it with science." *Journal of Science Teacher Education, 32*(1), 7-38. doi: 10.1080/1046560X.2020.1778248

Brown, B. A., **Ribay, K**., Pérez, G., Boda, P. A., & Wilsey, M. (2020). A virtual bridge to cultural access: Culturally relevant virtual reality and its impact on science students. *International Journal of Technology in Education and Science, 4*(2), 86-97. doi: 10.46328/ijtes.v4i2.45

**Ribay, K**., Kim, M.T., Wang, W., Pinolini, D., & Zhu, H. (2016). Predictive modeling of estrogen receptor binding agents using advanced cheminformatics tools and massive public data. *Frontiers in Environmental Science, 4*(12). doi: 10.3389/fenvs.2016.00012

## PEER-REVIEWED CONFERENCE PRESENTATIONS

**Ribay, K.** The Critical Role of Justice-Oriented Teachers in Responding to Covid-19 Educational Shifts. Meeting of Science Educators for Equity, Diversity, and Social Justice. January 2021.

Brown, B.A., **Ribay, K.**, Pérez, G. A Bridge Across Cultures: How Virtual Reality Can Transform Culturally

Relevant Science Teaching. Meeting of the American Education Research Association. San Francisco, CA, April 2020. (Conference cancelled)

**Ribay, K.** Engaging in Professional Development Research that is Justice-Centered and Teacher-Centered. National meeting of Science Education at the Crossroads. Montgomery, AL, November 2019. Available online at sciedxroads.org/confer/proceedings

**Ribay, K**., Dozier, S., and Reigh, E. Building Community Around Science for Social Justice. National Science Teaching Association Annual Conference. St. Louis, MO, April 2019. Workshop.

**Ribay, K.** A Dynamic Framework to Describe Teachers' Conceptions of Integrating Social Justice into Chemistry Classrooms. Meeting of the National Association of Research in Science Teaching. Baltimore, MD, April 2019.

Lowell, B., Reigh, E., and **Ribay, K**. From Inquiry to the Science and Engineering Practices: Implications for Professional Development. Meeting of the National Association of Research in Science Teaching. Baltimore, MD, April 2019. Poster Presentation.

**Ribay, K**., Pérez, G., Brown, B.A., Boda, P.A., and Aleman, D. Using Culturally Relevant Virtual Reality to Connect Science to Community. Meeting of the American Educational Research Association. Toronto, Ontario, April 2019.

Reigh, E., **Ribay, K.**, Dozier, S., and Bergstadt, L. Chem4SJ: Activities for Social Justice Teaching. California Science Teachers Association Conference. Pasadena, CA, November 2018.

Dozier, S., **Ribay, K**., and Reigh, E. Sci4SJ: Building Community around Science for Social Justice. California Science Teachers Association Conference. Pasadena, CA, November 2018.

**Ribay, K**. Chemistry for social justice: Considering green chemistry in the classroom. Environmental Justice to Social Equity symposium, American Chemical Society Green Chemistry and Engineering Conference. Portland, WA, June 2018.

**Ribay, K.** Teaching chemistry for social justice: Teachers' conceptions of integrating social justice into chemistry classrooms. Graduate Research Symposium, Meeting of the National Association of Research in Science Teaching. Atlanta, GA, March 2018. Poster presentation.

**Ribay, K**., Reigh, E., and Dozier, S. Engaging teacher agency and reflection around social justice in the science curriculum. Meeting of Science Educators for Equity, Diversity, and Social Justice. Davis, CA, January 2018.

## FELLOWSHIPS

***William R. and Sara Hart Kimball Fellow, Stanford Graduate Fellowship*** (Stanford University, $106,960)
- 3-year fellowship, tuition and stipend support
- 1 of 324 named graduate fellows university-wide

***Enhancing Diversity in Graduate Education Fellow*** (Stanford University, $12,800)
- 2-year fellowship, travel and research support

***Camden Graduate Scholarship*** (Rutgers-Camden University, $1000, 2014-2015)

***Dean's Fellowship*** (Rutgers-Camden University, $1000, Spring 2014)

## HONORS & AWARDS

***Stanford Community Impact Award*** (Stanford Alumni Association, 2021)
- Awarded by university faculty and staff in recognition of the positive impact on the Stanford community created by the events and community of the GSE Women of Color Collective

***Doctoral Student Recognition Award for Outstanding Service*** (Stanford GSE, 2020)
- Awarded by Graduate School of Education faculty and students in recognition of exemplary teaching and support of first year doctoral students in the proseminar program

***Chester A. Olinger Award for Outstanding Teaching*** (Collingswood High School, 2016)
- Awarded by the graduating senior class in recognition of outstanding teaching

***Secondary Teacher of the Year*** (Collingswood School District, 2016)
- Awarded by district leadership in recognition of outstanding teaching


## RESEARCH EXPERIENCE

**Research Assistant** *(September 2016-present)*
***Science in the City, Stanford Graduate School of Education***
***PI: Bryan A. Brown***
- Assisted on randomized control trial of culturally relevant virtual reality science lessons
- Qualitative analysis of interview data, content analysis of student work products, comparative quantitative analysis of survey data
- Designed lessons and conducted tests of virtual reality science lessons in multiple cohorts over two academic years, including coordinating with teachers and interviewing elementary aged students
- Co-author on three papers from the study

**Instrument Design** *(September 2018-December 2018)*
***Center on Research and Education, Southern Methodist University***
- Collaborated on an evaluation instrument to assess videos of classroom lessons for the Education for Sustainability project in the Galapagos Islands
- Identified key constructs and rubric language to assess shifts in student-centered instruction

**Research Assistant** *(January 2018-August 2018)*
***Center to Support Excellence in Teaching, Stanford Graduate School of Education***
- Assisted with the development and implementation of the ChemEx$^2$ professional development program
- Designed and conducted an evaluative research study
- Analyzed interviews, surveys, and work products to identify teacher shifts in thinking about inquiry
- Co-author on a poster from the study presented at NARST 2019


## UNIVERSITY TEACHING EXPERIENCE

### INSTRUCTOR OF RECORD

***Santa Clara University School of Education and Counseling Psychology***
- EDUC 288A: Secondary Science Methods 1 (Fall 2020)
- EDUC 288B: Secondary Science Methods 2 (Winter 2021)

This 2-course sequence is a teaching methods course for master's students working on their MAT/ single subject science teaching credential.

***University of San Francisco School of Education***
- TEC 673: Curriculum: Currents and Controversies (Spring 2020, Fall 2020, Fall 2021)

This course is a master's level course for elementary and secondary credential candidates that investigates curriculum theory and applies it to current and historical curriculum controversies.

***Stanford Graduate School of Education***
- EDUC 325A: Graduate Proseminar 1 (Fall 2018, Fall 2019)
- EDUC 325B: Graduate Proseminar 2 (Winter 2019, Winter 2020)
- EDUC 325C: Graduate Proseminar 3 (Spring 2019, Spring 2020)

This 3-course sequence is a general overview of education research required for all first-year doctoral students in education at Stanford. The three courses focus on teaching and learning, social forces that shape education, and history and policy. As the graduate co-instructor, I selected readings, planned lessons, led discussions, graded assignments, and provided continuity across quarters.

***Stanford Teacher Education Program, Stanford University***
- EDUC 267B: Science Curriculum and Instruction 2 (Fall 2019)
- EDUC 267C: Science Curriculum and Instruction 3 (Winter 2020)

This course sequence is a teaching methods course for master's students completing their single subject science teaching credential.

## TEACHING ASSISTANT

***Stanford Graduate School of Education***
- EDUC 200B: Introduction to Qualitative Research Methods (Denise Pope, Fall 2021)

***Stanford Teacher Education Program, Stanford University***
- EDUC 267A: Science Curriculum and Instruction 1 (Bryan A. Brown, Summer 2019)
- EDUC 388A: Language Policies and Practices (Ramón Martinez, Winter 2019, 2021, 2022)
- EDUC 299: Equity and Education (Antero Garcia and Jonathan Rosa, Fall 2018, 2019, 2021)
- EDUC 240: Adolescent Development (Shayna Sullivan, Fall 2017)

# K-12 TEACHING EXPERIENCE

**Collingswood Public Schools** *(September 2010-June 2016)*
*Science Teacher*
- Courses: Chemistry, Integrated Science, Culinary Chemistry, Environmental Biology, Inclusion Chemistry
- Curriculum Design: Chemistry, Integrated Science, Culinary Chemistry

**Camden City School District** *(September 2006-July 2009)*
*Science Teacher*
- Courses: Chemistry, Bilingual Chemistry, Physics, Honors Physics
- District service: Physics curriculum design (Summer 2009), Title I Unified Plan committee (2008-2009)

**Ignite Camden Summer Program** *(Sumer 2013)*
*Science Teacher*
- Developed and implemented inquiry-based science lessons for $3^{rd}$-$8^{th}$ graders
- Mentored college-age counselors in teaching strategies

# PROFESSIONAL DEVELOPMENT EXPERIENCE

**Research Experience for Teachers, Stanford University** *(Summer 2021, 2022)*
*Workshop Facilitator*
- Presented a 90-minute workshop on *Teaching STEM for Social Justice* to teachers enrolled in the Research Experience for Teachers program at Stanford University
- Supported teachers in integrating social justice into their summer curriculum design project

**Center to Support Excellence in Teaching, Stanford University** *(Summer 2017, 2018)*
*Workshop Designer and Facilitator*
- Developed the concept for a summer workshop on Teaching Chemistry for Social Justice
- Co-facilitated two cohorts of the workshop in which secondary chemistry teachers learned about social justice approaches to teaching and writing social justice-focused units aligned with the Next Generation Science Standards
- Supported the facilitation of the ChemEx$^2$ course, summer 2018

**Galápagos Conservancy, Galápagos, Ecuador** *(May 2017-December 2018)*
*Workshop Facilitator*
- Designed and co-facilitated four week-long professional development institute sessions in Spanish for secondary chemistry and physics teachers in Galapagos, Ecuador, with a focus on strengthening teachers' content knowledge and helping them to develop student-centered lesson strategies
- Developed strategies for connecting the Ecuadorian chemistry content standards to the Education for Sustainability project

## CURRICULUM WRITING EXPERIENCE

**OpenSciEd Secondary Science Curriculum** *(2021-2022)*
*Curriculum Writer*
- Participated in unit co-design and wrote individual lessons for High School Biology Unit 1 (Ecosystems); High School Chemistry Units 2 & 4 (Electrostatics, Chemical Reactions).

## INVITED PRESENTATIONS

Ribay, K. *Incorporating culturally relevant virtual reality into science instruction.* Guest lecture in EDU 6305, Differentiated Instruction in Science, Southern Methodist University. April 2021.

Ribay, K. *Moving from antiracist talk to antiracist action: Research-backed strategies from education.* Current Issues in Genetics Seminar Series, Department of Genetics, Stanford University School of Medicine. November 2020.

Ribay, K. *Supporting the instruction of modeling as a scientific practice.* Inter-American Teacher Education Network, Organization of American States, Stanford Cooperation Exchange. February 2020.

Ribay, K. and Dozier, S. *Curriculum encounter: Using data to advance climate justice.* Guest lecture in EDUC 231, Teaching Science in the Secondary Classrooms, University of California, Santa Cruz. February 2020.

Ribay, K. *Science and language: Do the words we use matter?* Guest lecture in MCB 15, Current Topics in the Biological Sciences, University of California, Berkeley. February 2018.

Ribay, K., Reigh, E., and Dozier, S. *Chemistry for social justice: A disciplinary perspective on social justice teaching.* Pondering Excellence Series, Center to Support Excellence in Teaching, Stanford University. February 2018.

## PROFESSIONAL AND UNIVERSITY SERVICE

Conference Proposal Reviewer
      Science Educators for Equity, Diversity, and Social Justice
      National Association for Research in Science Teaching
Manuscript Reviewer
      *Journal of Chemical Education*
Women of Color Collective at Stanford GSE Leadership, 2020-2021
Stanford Dissertation Support Grant Advisory Committee, 2019-2020
Mentor, Stanford GSE Graduate Student Mentoring Program

## PROFESSIONAL MEMBERSHIPS

American Chemical Society
National Association for Research in Science Teaching
American Educational Research Association
National Science Teaching Association
American Association of Chemistry Teachers