

Paulette Vincent-Ruz
Curriculum Vitae

University of Michigan
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EDUCATION

University of Pittsburgh

Ph.D., Learning Sciences and Policy 2019
Dissertation Advisor: Christian D. Schunn, Ph.D.
“Conceptualizing Science Identity: Its Nature and the Gendered Role It Plays in Early
Secondary Students’ Science Choices”

Universidad Nacional Autónoma de México, Mexico City, Mexico

B.Sc., Chemical Engineering (Honors) 2013
Dissertation Advisor: Luis D. Miranda, Ph.D.
“Dehydroalanine synthesis for the study of palladium catalyzed tandem reaction”

APPOINTMENTS

University of Michigan

Post-doctoral Fellow 2020-*current*
Advisor: Timothy A. McKay, Ph.D.
Focus: Discipline Based Education Research (Chemistry)

- Design and evaluation of classroom interventions with an equity focus
- Support for instructors to make equitable changes on remote instruction during COVID-19 crisis
- Grant writing experience

University of Pittsburgh

Post-doctoral Research Associate 2019
Advisor: Kevin Binning, Ph.D. & Christian D. Schunn, Ph.D.
Focus: Discipline Based Education Research (Chemistry)

- Designed surveys to measure science related attitudes in college
- Design of implementation of POGIL curriculum in large enrollment General Chemistry I classrooms
- Designed TA training to support POGIL instruction in large enrollment General Chemistry I classrooms

- Evaluation of classroom interventions with an equity focus
- Grant writing experience

PUBLICATIONS

Refereed Journal Articles

* Indicates corresponding author

Vincent-Ruz, P.*, (*in press*). What does it mean to think like a chemist? In Neiles, K. & Koenig, A. (Eds.), *Becoming a Chemist: Scaffolding Professional Skills into Undergraduate Curricula* (1st ed). American Chemical Society

Vincent-Ruz, P.*, Meyer, T., Roe, S. G., & Schunn, C. D. (2020). Short-Term and Long-Term Effects of POGIL in a Large-Enrollment General Chemistry Course. *Journal of Chemical Education*, 97(5), 1228-1238.

Vincent-Ruz, P.*, & Schunn, C. D. (2019). Identity Complexes and Science Identity in Early Secondary: Mono-topical or in Combination with Other Topical Identities. *Research in Science Education*, 1-22.

Cannady, M., **Vincent-Ruz P.**, Chung J., & Schunn C. D. (2019) Scientific Sensemaking: Intellectual resources that predict content learning *Contemporary Ed. Psychology*, 59, 101802

Witherspoon, E. B., **Vincent-Ruz, P.**, & Schunn, C. D. (2019). When making the grade isn't enough: The gendered nature of premed science course attrition. *Educational Researcher*, 48(4), 193-204.

Vincent-Ruz P. *, & Schunn C. D. (2018) The nature of Science Identity and its role as driver of student choices. *International Journal of STEM*, 5(1), 48-60.

Vincent-Ruz, P. *, Grabowski, J. J., & Schunn, C. D. (2018). The Impact of Early Participation in Undergraduate Research Experiences on Multiple Measures of Premed Path Success. *Scholarship and Practice of Undergraduate Research*, 1(3), 13-18.

Vincent-Ruz, P. *, Binning, K., Schunn, C. D., & Grabowski, J. J. (2018). The Effect of Math SAT on Women's Chemistry Competency Beliefs. *Chemistry Education Research and Practice*, 19, 342-351.

Vincent-Ruz, P. *, & Schunn, C. D. (2017). The increasingly important role of science competency beliefs for science learning in girls. *Journal of Research in Science Teaching*, 54(6), 790-822. doi:10.1002/tea.21387

Mijangos M. V., González-Marrero J., Miranda L. D., **Vincent-Ruz P.**, Lujan-Montelongo A., Olivera-Díaz D., et al. (2012). Microwave-assisted C-3 selective oxidative radical alkylation

of flavones. *Organic and Biomolecular Chemistry*, 10(15), 2946–2949.
<http://doi.org/10.1039/C2OB25249J>

Technical Reports

Vincent-Ruz, P., Dorph, R., Cannady, M. A., & Schunn, C. (*in preparation*) Measures Technical Brief: Science Identity.

Chung, J., Cannady, M. A., Schunn, C., Dorph, R., & **Vincent-Ruz, P.** (2016) Measures Technical Brief: Scientific Sensemaking. Retrieved from: <http://www.activationlab.org/wp-content/uploads/2016/02/SensemakingReport-3.2-20160331.pdf>

AWARDS

2019 Student Leadership Award, *University of Pittsburgh School of Education*

CAS Future Leaders in Chemistry Award, *American Chemical Society*

INVITED TALKS AND PANELS

2020 Becoming a chemist: The role of chemistry identity on persistence and development of chemist's professional skills CINVESTAV, Mexico December 3rd, 2020

Short and longterm effects of POGIL in large enrollment General Chemistry course – Portland State University Chemistry Department November 6th, 2020

Becoming a chemist: The role of chemistry identity on persistence and development of chemist's professional skills - University of Sydney Chemistry Department October 25th, 2020

REACT Framework as a starting point to solve equity problems in Chemistry Education - University of Michigan Department of Chemistry Seminar Series October 15th, 2020

REACT Framework as a starting point to solve equity problems in Chemistry Education - Canadians Working for Inclusivity in Chemical Sciences, CIC Talk Series October 7th, 2020

C&EN Futures Festival, leading scientists look to discoveries of tomorrow – American Chemical Society, August 25th, 2020

Learning Environments in the time of COVID-19 – Panel, at University of Michigan Ann Arbor; June 10th, 2020

Learning Environments in the time of COVID-19 – Center for Academic Innovation's AIM Research Data Privacy Panel; May 26th, 2020

Teaching in the Times of Covid-19 – Webinar for Life Sciences South Florida/Florida International University; April 14th, 2020

Becoming a chemist: Scaffolding authentic professional skill experiences into the undergraduate chemistry and biochemistry curricula – Panel at the American Chemical Society Spring Conference; Philadelphia, PA. March 23th, 2020 (Cancelled) *

2019 Measuring and Defining Engagement – Panel at the Visitors Studies Association; Detroit, MI. July 13th 2019

2018 Supporting freshmen undergraduate students STEM trajectories– School of Chemistry, Universidad Nacional Autonoma de Mexico; Mexico City, Mexico, August 17th.

**Conference cancelled due to COVID-19 Pandemic*

CONFERENCE PAPERS AND PRESENTATIONS

2020 **Vincent-Ruz P.**, Meyer T., Roe S.G., & Schunn C. D. Short and long-term effects of POGIL in a large enrollment general chemistry course *NARST* Portland, OR (Cancelled)*

Vincent-Ruz, P., & Schunn, C.D. Gendered Effects of. POGIL intervention in a large enrollment general chemistry course *ACS* Philadelphia, PA (Cancelled)*

2019 **Vincent-Ruz, P.**, Mapping #ChemTwitter: Structure, challenges & opportunities *ACS* Orlando, FL

Vincent-Ruz, P., & Schunn, C.D. Science Identity's gendered role on middle-schoolers' career preferences *NARST* Baltimore, MD

2018 **Vincent-Ruz, P.**, & Schunn, C.D. The influence of gender and ethnicity on student's endorsement of Science Identity *Gender & STEM Conference* Eugene, OR

Vincent-Ruz, P., Witherspoon, E.B., & Schunn, C.D. The role of attitudinal factors on the gendered nature of pre-med STEM course attrition *Gender & STEM Conference* Eugene, OR

Vincent-Ruz, P., & Garcia, G.A. STEM professors' sensemaking of culturally relevant pedagogy at one Hispanic-Serving Institution. *National Association for Research in Science Teaching Association* Atlanta, GA

Vincent-Ruz, P., Page, L.C., & Schunn, C.D. The effect of early undergraduate research experiences on STEM pathway persistence & degree attainment. *Society for Research in Education Effectiveness* Washington, DC

- 2017 Vincent-Ruz, P.,** Binning, K.R., Schunn, C.D., & Grabowski, J.J., The effect of SAT math scores on women's self-efficacy and its implications for chemistry learning *National Association for Research and Science Teaching* San Antonio, TX

Vincent-Ruz, P., Dorph, R., & Schunn, C.D. For whom does Science Identity matter? *American Educational Research Association* San Antonio, TX

**Conference cancelled due to COVID-19 Pandemic*

CONFERENCE POSTERS

- 2019 Vincent-Ruz, P. & Schunn, C. D.,** An Understanding of the Impact of a Process Oriented Guided Inquiry Learning (POGIL) intervention on students' attitudes and academic achievement. *GORDON Chemistry Education Conference* Lewiston, ME

- 2015 Vincent-Ruz, P.,** Cannady, M., Schunn, C. D., & Dorph, R. Measuring the skills that predict learning in middle-school science *REASON spring school on scientific reasoning and argumentation* Munich, Germany

GRANTS

- 2020 National Science Foundation (Submitted Aug 2020)**
Fostering classroom equity in large enrollment courses, through a tailored instructor intervention Timothy A. McKay (PI), **Paulette Vincent-Ruz (Co-PI)**
\$150,000
- SPENCER Foundation (Unfunded)**
“Pandemic Effects on STEM Student Pathways: An Examination of COVID-19 Impacts on Three Processes of Student Persistence in STEM Degree Programs” Timothy A. McKay (PI), **Paulette Vincent-Ruz (Co-PI)**, W. Carson Byrd (Co-PI), Benjamin P. Koester, and Steve Lonn
\$50,000
- National Science Foundation (Unfunded)**
RAPID: “Pandemic Effects on STEM Student Pathways: An Examination of COVID-19 Impacts on Three Processes of Student Persistence in STEM Degree Programs” Timothy A. McKay (PI), **Paulette Vincent-Ruz (Co-PI)**, W. Carson Byrd (Co-PI), Benjamin P. Koester, and Steve Lonn
Planned resubmission December 2020 \$200,000

- 2019** **National Science Foundation (Unfunded)**
ECR DBER DCL: Testing a Functional Framework for Student Engagement in Transformed Active Learning Classrooms **Paulette Vincent-Ruz (PI)**, Sean Garret-Roe (Co-PI)
\$500,000
- 2018** **Office of the Chancellor, University of Pittsburgh (Awarded)**
“Building Bridges: Sustaining our Commitment to Equity and Justice by Empowering Minoritized Students to Transform the Educational Landscape in Pittsburgh and Beyond” Valerie Kinloch (PI), **Paulette Vincent-Ruz (Co-PI)**, Ashley Shafer (Co-PI), Nicole Cristobal (Co-PI) & Xhey Evans-El (Co-PI)
\$50,000

RESEARCH EXPERIENCE

- 2020** **Sloan Equity and Inclusion in STEM Introductory Courses**
The SEISMIC project aims to advance equity and inclusion in foundational STEM courses. Our model for change is grounded in recent research exploring the reasons for the relatively slow adoption of evidence-based approaches to STEM education
Research Scientist
 - Quantitative data analysis
 - Grant writing
- 2019-2020** **Social Belonging Intervention**
Do admissions messages convey to students that diverse students are valued on campus and that students can grow to belong in the college community and succeed?
Research Scientist
 - Survey development and validation
 - Quantitative data analysis
 - Project management
- 2018-2020** **Understanding the Effect of POGIL on student’s critical outcomes**
Research Scientist
 - Survey development and validation
 - Intervention implementation and design
 - Quantitative data analysis
 - Project management
 - Grant Writing

- 2018-2019** **Using Social Network Analysis to understand the diffusion of information of chemistry on social media**
Partnership with: Chemistry & Engineering News, American Chemical Society
Research Scientist
 - Social network analysis
- 2017-2018** **Becoming a Hispanic Serving Institution: A Multiple Case Study Approach to Understanding the Process of Enrolling and Serving Latina/o Students**
PI: Gina Ann Garcia
Graduate Student Researcher
 - Qualitative data analysis
- 2016-2018** **Build, Understand, & Tune Interventions that Cumulate to Real Impact**
Advisor: Christian D. Schunn
Graduate Student Researcher
 - Survey development and validation
 - Quantitative data analysis
 - Project management
- 2014-2018** **Collaborative Research: Studying the Malleability and Impact of Science Learning Activation**
Advisor: Christian D. Schunn
Graduate Student Researcher
 - Survey development and validation
 - Quantitative data analysis

TEACHING EXPERIENCE

Teaching Assistant

Teaching and Learning in Secondary Science and Mathematics 3
Professor: Dr. Kari Kokka

Spring 2019

Teaching Assistant

History and Politics of Higher Education
Professor: Dr. Gina A. Garcia

Fall 2018

Professional Development for K-12 Teachers

Research Experience for Teachers
Design Based Learning Curriculum Development
48-Hour Workshop per year

2016-2018

K-12 Teaching Experience

Colegio Frances del Pedregal, Mexico City, Mexico

Chemistry Teacher –9th grade

2013

PROFESSIONAL SERVICE

National Associations Service

Co-Chair of the EEC Symposium Committee. Equity and Ethics Committee, *NARST*
(2020-2023)

Journal Reviewing

Research in Science Education

Science Education

Chemistry Education Research and Practice

Conference Reviewing

NARST Annual Meeting Proposal Reviewer

AERA Annual Conference Proposal Reviewer

DEPARTMENTAL/UNIVERSITY SERVICE

President of the Council for Graduate Students in Education (2018-2019)

Vice-President of the Council for Graduate Students in Education (2017-2018)

School of Education Dean Search Committee (2016)

PROFESSIONAL MEMBERSHIPS

National Association for Research on Science Teaching

American Educational Research Association

American Chemical Society

ADVANCED STATISTICAL TRAINING & SOFTWARE KNOWLEDGE

Advanced Statistical Skills

Latent Class Analysis

Hierarchical Linear Modeling

Factor analysis

Item Response Theory Analysis

Coarsened Exact Matching

Social Network Analysis

Maximum Likelihood Modeling

Proficiency with statistical software

R (Advanced)

ORA for Social Network Analysis (Intermediate)

