

KATHRYN LANOUILLE

William & Mary, School of Education, Department of Curriculum and Instruction
301 Monticello Avenue Williamsburg, VA 23185 Email: lanouette@wm.edu

EDUCATION

- 2019 PhD **University of California, Berkeley**
PhD, Learning Sciences and Human Development
The potential of place: Leveraging children's local knowledge and participatory GIS mapping to conceptualize ecological systems in elementary science instruction
Committee: Geoffrey Saxe (chair), Michelle Hoda Wilkerson, Kathleen Metz, Kimiko Ryokai (School of Information)
- 2006 MS **Bank Street Graduate School of Education**
Childhood Education and Museum Education
- 2001 BA **Oberlin College**
Politics

ACADEMIC APPOINTMENTS

- 2020 - present **Assistant Professor, Learning Sciences & Science Education**
William & Mary, School of Education, Curriculum & Instruction
Affiliated Faculty, Arts & Sciences, Institute for Integrative Conservation
Affiliated Faculty, Arts & Sciences, Environment & Sustainability Program
- 2019 - 2020 **Postdoctoral Researcher**
University of California Berkeley, Graduate School of Education
Writing Data Stories: Integrating Computational Data Investigations into the Middle School Science Classroom, PI: Dr. Michelle Hoda Wilkerson

AWARDS & FELLOWSHIPS

- 2022 AERA Division C New Faculty Mentoring Program
- 2017 - 2018 National Academy of Education/ Spencer Dissertation Fellowship
- 2016 - 2017 Research + Practice Collaboratory Fellow (UW/ NSF)
- 2009 National Oceanic and Atmospheric Administration (NOAA) Teacher at Sea Fellow

PUBLICATIONS

JOURNAL SPECIAL ISSUE/ EDITORIALS

Lanouette, K. & Taylor, K. H. (Eds). (2022). Learning within socio-political landscapes: (Re)imagining children's geographies. *Occasional Paper Series*, (48), 3-12.
DOI: <https://doi.org/10.58295/2375-3668.1471>

REFEREED JOURNAL ARTICLES

Lanouette, K. (2022). Emotion, place and practice: Exploring the interplay in children's engagement in ecologists' sampling practices. *Science Education*, 106, 610-644.
DOI: <https://doi.org/10.1002/sc.21702>

Wilkerson, M., Lanouette, K. & Shareff, R. (2022). Exploring variability during data preparation: a way to connect data, chance, and context when working with complex public datasets, *Mathematical Thinking and Learning*, 24:4, 312-330, DOI: [10.1080/10986065.2021.1922838](https://doi.org/10.1080/10986065.2021.1922838)

Lee, V. R., Wilkerson, M. H., & **Lanouette, K.** (2021). A call for a humanistic stance toward K-12 data science education. *Educational Researcher*, 50(9), 664-672.
DOI: <https://doi.org/10.3102/0013189X21104881>

Van Wart, S., **Lanouette, K.**, & Parikh, T. (2020). Scripts and counterscripts in community-based data science: Participatory digital mapping and the pursuit of a Third Space. *Journal of the Learning Sciences*, 29(1), 127-153, DOI: <https://doi.org/10.1080/10508406.2019.1693378>

Murata, A., Siker, J., Kang, B., Baldinger, E.M., Kim, H.J., Scott, M., & **Lanouette, K.** (2017). Math talk and student strategy trajectories: The case of two first grade classrooms. *Cognition and Instruction*, 35(4), 290-316, DOI: [10.1080/07370008.2017.1362408](https://doi.org/10.1080/07370008.2017.1362408)

BOOK CHAPTERS

Van Wart, S., **Lanouette, K.**, & Parikh, T.S. (2022). Scripts and counterscripts in community-based data science: Participatory digital mapping and the pursuit of a Third Space. In M. Wilkerson & J. Polman (Eds.), *Situating data science: Exploring how relationships to data shape learning* (pp. 127-153). Routledge.

Lanouette, K. (2018). Children's reasoning about animal lifecycles: Tradeoffs across four designs. In A. Baker, *Design Research in Education: A Practical Guide for Early Career Researchers* (pp. 207-223). Routledge.

MANUSCRIPTS IN PREPARATION OR UNDER REVIEW

Lanouette, K., Van Wart, S. & Parikh, T. (under review). Expansive modeling: Participatory digital mapping, dynamic data and children's science argumentation about socio-ecological systems

Lanouette, K. (under review). Appearing and disappearing in the data: Emotion within children's data modeling.

Lanouette, K. & Lee, V. (in preparation). Hyperlocal expertise: Schoolyards as sites for ambitious data sensemaking.

REFEREED PRINT PROCEEDINGS OF CONFERENCES

(* student authorship)

Lanouette, K., Kim, E., & Krause, G. (2023). Fostering subjective understandings: Exploring the role of place and transdisciplinarity in a US teacher education program. In (Eds), *Proceedings of the 17th International Conference of the Learning Sciences – ICLS 2023*. Montreal, Canada: International Society of the Learning Sciences.

Lanouette, K., Church, M.,* & Maynard, C.* (2023). *Appearing and disappearing in the data: Emotional configurations within children's data modeling practices*. In (Eds), *Proceedings of the 17th International Conference of the Learning Sciences – ICLS 2023*. Montreal, Canada: International Society of the Learning Sciences.

Lanouette, K. (2022). Children's place-based gesture: An understudied resource in socio-ecological sensemaking. In Chinn, C., Tan, E., Chan, C., & Kali, Y. (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022*. (pp.1337-1340). Hiroshima, Japan: International Society of the Learning Sciences. <https://2022.isls.org/proceedings/>

- Curnow, J., Davidson, S., Jaber, L. Z., **Lanouette, K.**, Southerland, S. A., Veal, T., Bell, P., & Uttamchandani, S. (2021). Emotional Configurations Across Learning Environments. In de Vries, E., Hod, Y., & Ahn, J. (Eds.), *Proceedings of the 15th International Conference of the Learning Sciences - ICLS 2021*. (pp. 803-810). Bochum, Germany: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/7586>
- Lanouette, K.**, Rivero, E., Barton, J., Bulalacao, N., Lopez, M. L., Cortes, K., Roberto, C., Gutiérrez, K., Wilkerson, M. H., Lee, H., Stokes, D., Finzer, W., Erickson, T., Petrosino, T., & Haldar, L. (2020). Writing data stories: Reauthoring scientific data through syncretic computational investigations in middle school science. In C. Matuk & S. Yoon (Orgs.) and J. Polman (Disc.), *Data literacy for social justice*. In Gresalfi, M. and Horn, I. S. (Eds.), *Proceedings of the 14th International Conference of the Learning Sciences (ICLS) 2020*, Volume 1 (pp. 343-349). Nashville, Tennessee: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/6656>
- Van Wart, S., **Lanouette, K.** & Parikh, T.S. (2020). Scripts and counterscripts in community-based participatory mapping. In C. Matuk & S. Yoon (Orgs.) and J. Polman (Disc.), *Data literacy for social justice*. In Gresalfi, M. and Horn, I. S. (Eds.), *Proceedings of the 14th International Conference of the Learning Sciences (ICLS) 2020*, Volume 1 (pp. 343-349). Nashville, Tennessee: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/6656>
- Lanouette, K.** & Van Wart, S. (2019). Moving between experience, data and explanation: The role of interactive GIS maps in elementary science sensemaking. In K. Lund, G. Nicolai, E. Lavoué, C.H. Gweon & M. Baker (Eds.), “A wide lens: Combining embodied, enactive, extended, and embedded learning in collaborative settings,” *Proceedings of the International Conference on Computer Supported Collaborative Learning (CSCL) 2019* (Vol. 2, pp. 553-556). Lyon, France: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/4453>
- Wilkerson, M., **Lanouette, K.**, Shareff, R. L., Erickson, T., Bulalacao, N., Heller, J., St. Clair, N., Finzer, W., & Reichsman, F. (2018). Data moves: Restructuring data for inquiry in a simulation and data analysis environment. In J. Kay & R. Luckin (Eds.), “Rethinking learning in the digital age: Making the learning sciences count,” *Proceedings of the International Conference of the Learning Sciences (ICLS) 2018* (Vol. 3, pp. 78-80). London, UK: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/636>
- Lanouette, K.**, Van Wart, S., & Parikh, T. (2016). Supporting elementary students’ science learning through data modeling and interactive mapping in local spaces. In C.K. Looi, J. Polman, U. Cress & P. Reimann (Eds.), “Transforming learning, empowering learners,” *Proceedings of the International Conference of the Learning Sciences (ICLS) 2016* (Vol. 1, pp. 570-577). Singapore: International Society of the Learning Sciences.
- Lanouette, K.**, Berson, E., & Metz, K. (2014). What does “doing” science mean in the elementary school classroom?: Bruno Latour, inscriptional transformations, and a new look at children’s interactions with phenomena. In J. Polman, E. Kyza, D. O’Neill, I. Tabak, W. Penuel, S. Jurow, K. O’Connor, T. Lee, & L. D’Amico (Eds.), “Learning and becoming in practice,” *Proceedings of the International Conference of the Learning Sciences (ICLS) 2014* (Vol. 2, pp. 1537-1538). Boulder, CO: International Society of the Learning Sciences.

PRESENTATIONS

REFEREED CONFERENCE PRESENTATIONS

- Lanouette, K.** (2023, April). *Emotion in Analyzing and Interpreting Data: Implications for Children's Considerations of Distribution and Variation in Elementary Science*. In S. Lee & A. Pierson (Chairs), *Affect and Emotion as Productive Sensemaking Resources in STEM Education [Symposium]*. Paper presented at the annual meeting of the American Educational Research Association (AERA) in Chicago, IL.
- Lanouette, K., Kim, E., & Krause, G.** (2023, April). *Fostering Subjective Understandings: Exploring The Role Of Place And Transdisciplinary In A Teacher Education Program*. Paper presented at the annual meeting of the American Educational Research Association (AERA) in Chicago, IL.
- Kim, E., **Lanouette, K.** & Krause, G. (2023, April). *Centering Social Studies in Elementary Education: A Critical Transdisciplinary Approach*. Paper presented at the annual meeting of the American Educational Research Association (AERA) in Chicago, IL.
- Lanouette, K. & Lee, V.** (2022, April). Hyperlocal expertise: Schoolyards as rich and complex contexts for developing children's data practices. In S. Yoon and C. Miller (Chairs), *Data Literacy in Context: Culturally Oriented and Place-Based Learning with Data*. Paper presented at the 2022 Annual Meeting of the American Educational Research Association (AERA) in San Diego, CA.
- Wilkerson, M.H., **Lanouette, K.**, & Shareff, R. (2019). *Learning to transform data: A longitudinal interview study*. Paper presented at the Eleventh International Research Forum on Statistical Reasoning, Thinking, and Literacy (SRTL-11) in Los Angeles, CA.
- Wilkerson, M.H. & **Lanouette, K.** (2019). *Making data useful: A longitudinal examination of young adults' developing data transformation processes*. Poster presented at the 2019 Annual Meeting of the American Educational Research Association (AERA) in Toronto, Canada.
- Lanouette, K.** (2018). *Earthworms, ecological reasoning and participatory GIS mapping: Design-based research on children's developing understanding of life underfoot at the elementary school*. In G.L. Wimberly & F.J. Levine (Chairs), *Promising Scholarship in Education: NAEd/ Spencer Dissertation Fellows and Their Research*. Invited poster session at the annual meeting of the American Educational Research Association (AERA) in New York, NY.
- Lanouette, K.** (2018). *Clash and confluence: The role of emergent goals and feelings in children's ecology practices*. Invited paper presented at the spring retreat of the National Academy of Education (NAEd) in Washington, D.C.
- Lanouette, K.** (2017). *Ecologies underfoot: A design-based research study of elementary students' integration of local knowledge and data representations using participatory GIS mapping*. Invited poster presented at the fall retreat of the National Academy of Education (NAEd) in Washington, D.C.
- Wilkerson, M. H. & **Lanouette, K.** (2017). *Connecting research and creating frameworks: A report from the youth, learning, and data science summit*. Paper presentation at the Tenth International Research Forum on Statistical Reasoning, Thinking, and Literacy (SRTL-10) in Rotorua, New Zealand.
- Lanouette, K., Van Wart, S., & Parikh, T.** (2017). *Situating children's ecological reasoning: Elementary students' use of participatory GIS mapping in everyday contexts*. In T. M. Philip (chair), *Digital Learning Technologies in the Cultural Contexts of Classrooms: Possibilities (and Cautions) for*

Expanded Student Meaning Making. Symposium conducted at the meeting of the Jean Piaget Society (JPS) in San Francisco, CA.

Van Wart, S., **Lanouette, K.**, & Parikh, T. (2016). *Local ground: Supporting data-driven inquiry with youth*. Poster paper presented at the annual meeting of the American Educational Research Association (AERA) in Washington, DC.

Lanouette, K., Berson, E., & Metz, K. (2014). “*Doing*” science in the elementary school classroom: *Latour analysis of inscriptions linking classroom and fieldwork*. Paper presented at the annual meeting of the National Association of Research on Science Teaching (NARST) in Pittsburg, PA.

Murata, A., Siker, J., Kang, B., Kim, H-J., Baldinger, E., Scott, M., & **Lanouette, K.** (2014). *Classroom group learning and individual student learning: Case of two first grade number talk lessons*. Paper presented at the annual meeting of the American Educational Research Association (AERA) in Philadelphia, PA.

REGIONAL CONFERENCE PRESENTATIONS

Lanouette, K. (November, 2022). *Placed-based Lesson Plans for Elementary Science: Framework, Praxis and Plans*. Presented at the annual Virginia Association of Science Teachers (VAST) Professional Development Institute in Williamsburg, VA.

RESEARCH EXPERIENCE

2019 - 2020 **Postdoctoral Scholar**
Writing Data Stories: Integrating Computational Data Investigations into the Middle School Science Classroom (NSF 1900606, Wilkerson, PI, Gutierrez, Finzer, & Lee, Co-PIs)
Coordinating research design, implementation and initial analysis of project studying middle school students using data visualization tools to develop socio-critical data literacies in science argumentation

On the following projects, I have worked as a **graduate student researcher**:

2017 - 2018 **Data Science Games: Student Immersion in Data Science Using the Common Online Data Analysis Platform** (NSF IIS-1530578: Wilkerson, Finzer, Erickson & Reichsman)
Assisted with research design and analysis of longitudinal semi-structured interviews of high school and community college youth reasoning about socio-ecological data sets

2016 **Youth, Learning, and Data Science Summit: Connecting Research and Creating Frameworks** (NSF IIS-1541676: Wilkerson, Lee, Parikh, and Polman, PIs)
Co-organized summit bringing together researchers in computer science, information visualization and K-12 education to promote cross dialogue around learning and data science

2014 - 2017 **Local Ground: A Contextually Grounded Approach for Learning Data Science Skills** (NSF 1319849: Parikh, PI)
Designed, implemented and researched 4th/ 5th grade multi-month science and data science curriculum involving *Local Ground*, a digital participatory GIS mapping tool

2013 - 2014 **Effects of Context-Focused and Practice-Based Professional Development Models on Teacher Knowledge, Classroom Practice and Student Learning in Science** (NSF 0545445: Shinohara, Heller and Little, PIs).

Engaged in qualitative and mixed-method video analysis to examine facilitation practices in science teacher professional development programs across three different programs

UNIVERSITY TEACHING EXPERIENCE

William & Mary

2023 **Instructor, Department of Curriculum and Instruction**

EDUC 492: *Research in Education** (Spring 2023, Fall 2023)

ELEM 406: *Science Planning, Instruction, and Assessment* (Fall 2023)

CRIN E06: *Science Planning, Instruction, and Assessment* (Fall 2023)

EDUC 310: *Foundations of US Education* (Spring 2023)

2022 **Instructor, Department of Curriculum and Instruction**

EDUC 492: *Research in Education** (Spring 2022, Fall 2022)

ELEM 406: *Science Planning, Instruction, and Assessment* (Fall 2022)

CRIN E06: *Science Planning, Instruction, and Assessment* (Fall 2022)

2021 **Instructor, Department of Curriculum and Instruction**

EDUC 310: *Foundations of US Education* (Spring 2021, Fall 2021)

ELEM 406/ CRIN E06: *Science Planning, Instruction, and Assessment* (Fall 2021)

ELEM 441: *Teachers, Schools and Communities* (Spring 2021)

EPPL 775: *Doctoral Internship in University Teaching* (Spring 2021)

CONS 490: *Conservation Practicum (Independent Research- Spring, Summer, Fall 2021)*

2020 **Instructor, Department of Curriculum and Instruction**

ELEM 406/ CRIN E06: *Science Planning, Instruction, and Assessment* (Fall 2020)

CONS 490: *Conservation Practicum (Independent Research - Fall 2020)*

(* denotes newly developed course)

University of California Berkeley

2013 **Instructor, Berkeley Teacher Educator Program (BTEP)**

EDUC 236A: *Foundations for Teaching Elementary Science*

2012 - 2013 **Field Supervisor, Berkeley Teacher Educator Program (BTEP)**

Bank Street Graduate School of Education

2010 - 2011 **Instructor**

EDUC 535: *Science for Teachers*, a science methods course for pre-service and in-service teachers in the Nursery-6th grade bilingual, special, and general education programs at Bank Street Graduate School of Education

K-12 CLASSROOM TEACHING EXPERIENCE

2003 - 2012 **Elementary School Teacher**, New York City

Elementary Science Teacher (2006-2012), Elementary Classroom Teacher (2003-2006)

UNIVERSITY MENTORSHIP EXPERIENCE

2022 **Faculty Mentor**, Undergraduate Research in Education Lab (Spring 2022- present)

Support two undergraduate students engaging in mixed methods analysis related to children's science/ data science learning and emerging technologies

2021 **Faculty Mentor**, Doctoral Internship in University Teaching

Mentored PhD student in university teaching by co-teaching EDU 310

- 2020-2023 **Faculty Mentor**, Institute for Integrative Conservation
Supporting design and study of multi-media curriculum focused on ecology, sustainability, and Western/ Indigenous epistemologies for children (8-12 years old), partnering with external collaborators
- 2017 - 2019 **Graduate Student Mentor**, Getting into Graduate School (GiGS) Program
Mentored first generation and historically underrepresented students to select, apply and enroll in graduate school programs through a partnership with the Office of Graduate Diversity
- 2017 **Researcher Mentor**, NSF Research Experiences for Undergraduates Program (REU)
Applied for and received funding through NSF REU program to mentor an undergraduate researcher as part of existing NSF project
- 2016 - 2017 **Researcher Mentor**, UCB's Undergraduate Research Apprenticeship Program (URAP)
Co-mentored two undergraduates in conducting mixed methods educational research related to elementary math and science content

INFORMAL SCIENCE AND CONSERVATION EDUCATION AND RESEARCH

- 2010 **Freelance Exhibit Evaluator**, Institute for Learning Innovation
Conducted formative and summative research at NY Hall of Science and Central Park Zoo
- 2006 **Teaching Fellow**, Bronx Zoo
Taught onsite science programs to K - 6th grade students from tri-state area schools
- 2002 - 2003 **Research Associate**, Trust for Public Land
Conducted research on water quality and urban park financial resources, as part of multi-state Environmental Protection Agency (EPA) funded water quality demonstration projects
- 2001 **Backcountry Climbing Ranger**, National Park Service, Olympic National Park
Led backcountry trail maintenance, glacier travel, and wilderness rescue operations

SERVICE & PUBLIC OUTREACH

Service to the Discipline and Profession (International & National Service)

Editorship/ Journal Reviewer Experience

Guest Co-Editor, *Bank Street Occasional Paper Series #48: Learning Within Socio-Political Landscapes: (Re)imagining Children's Geographies*, 2022

Editorial Board, *Cyberlearning Research Center (CIRCL) Rapid Community Reports*, 2018-2020

Reviewer, *Journal of Learning Sciences*, 2023-present

Reviewer, *Science Education*, 2021- present

Reviewer, *Cognition & Instruction*, 2020 - present

Reviewer, *Journal for STEM Education Research*, 2020 – present

Reviewer, *Science & Education*, 2019 - present

Conference Reviewer Experience

Reviewer, *International Conference of the Learning Sciences*, 2018-present

Reviewer, *AERA Learning Sciences SIG*, 2019, 2021-present
Reviewer, *Computer Supported Collaborative Learning Conference*, 2019

NSF Panel Reviewer

ITEST Panel Reviewer, 2020 (October 2020)
DRK-12 Panel Reviewer, 2022 (January 2022)

Service to the University/ School/ Department

- 2022-2023 **Faculty Member**, William & Mary Faculty Research Committee
- 2021-2022 **Faculty Member**, University Teaching and Learning Project (MAXQDA), including Teaching & Learning Symposium presentation (April, 2022) *MAXQDA in Qualitative Research*. (<https://stli.wm.edu/2022tlsymposium/symposium/>)
- 2021- 2022 **Faculty Secretary**, School of Education
- 2021-2022 **Elementary Education Advisor**, Curriculum and Instruction Program
- 2021-2022 **Faculty Collaborator**, Diversity, Equity and Inclusion Grant (School of Education) Collaborated with colleagues in Elementary Education Program (Dr. Krause, Dr. Kim, and Dr. Johnson) to redesign collaborative and social justice focused undergraduate and graduate methods courses
- 2021 **Course Designer**, School of Education (designed schoolwide *EDU492: Research in Education* course, fostering faculty/ student research collaborations and mentoring
- 2021 **Invited Presenter**, W & M Scholars Undergraduate Research Experience (WMSURE) Presented overview of educational research methods to WMSURE undergraduates
- 2018 **Student Representative**, Culture, Cognition, and Learning Sciences Faculty Search University of California Berkeley Graduate School of Education
- 2017 **Co-organizer**, Youth, Learning and Data Science Summit (NSF Funded summit) University of California Berkeley Graduate School of Education and School of Information

Service to Community and Communication

- 2023 Lanouette, K. Invited talk “Getting Local with Science and Data Science” at William & Mary School of Education Brown Bag Lecture Series (April, 2023). Williamsburg, VA.
- 2023 Lanouette, K. Invited talk “Emotion, Place and Practice” at University of Calgary (virtual) with Learning Sciences Seminar taught by Dr. Pratim Sengupta (March, 2023)
- 2023 Lanouette, K. & Taylor, K. H. Invited Talk “Reimagining Children’s Geographies” at Bank Street Graduate School of Education. (January, 2023). New York, NY.
- 2022 Lanouette, K., Van Wart, S., & Lee, V. Invited Professional Development Workshop, City University of New York – CITE Faculty Workshop. “Getting Local With Data: K-8 Collaborations Interweaving Data into Learning about Science, Math and Much More” (2022, July). New York, NY [Virtual].

Lanouette, K. **Invited Panelist**, *Modernizing Mathematics and Data Science*. Deeper Learning Conference (March, 2022). Virtual, San Diego, CA

2020 **Content Advisor**, Scholastic Publishing

Advised editors of *SuperScience*, a 3rd - 6th grade monthly science-based periodical, 2017 - 2020

PROFESSIONAL AFFILIATIONS

American Educational Research Association (AERA)

International Society of the Learning Sciences (ICLS)

National Association of Research in Science Teaching (NARST)

CERTIFICATIONS

New York State Professional Teaching Certification, Certification in Childhood Education
Certificate # 1314697