

Rachel Chaffee, Ph.D.

Senior Education Researcher
American Museum of Natural History
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Education

Ph.D. University of Rochester, Rochester, NY

Warner Graduate School of Education & Human Development
Doctor of Philosophy, Education & Human Development, 2016
Graduate Certificate in Gender and Women's Studies

M.A. State University of New York College at Brockport, Brockport, NY

Master of English, 2006

B.A. Roberts University, Rochester NY

Bachelors of English, Communication minor, 2001

Work Experience

Senior Researcher, Co-Principal Investigator

American Museum Of Natural History, New York, NY

March 2021 - present

Lead the development and implementation of multiple National Science Foundation* awarded longitudinal research studies aimed at creating opportunities and entry points for students from historically underrepresented groups to access educational experiences and develop a sense of belonging in science, technology, computer science, and engineering that will support their interests in pursuing college degrees and careers in STEM.

- Lead research meetings, ongoing communication, project timelines and deliverables across multiple research-based institutions and x-disciplinary university partners, (e.g. SRI International, City University of New York (CUNY), University of California San Diego, and MIT), internal and external evaluators, data analysts, National Science Foundation advisory board members, and project team staff.

- Lead the development, pilot testing, revision and implementation of multiple studies utilizing mixed-methods methodologies, including: develop, pilot test, and implement qualitative and quantitative research instruments; facilitate all data collection across 25 internship programs located in 24 academic and cultural institutions in NYC.
- Conduct the analysis of qualitative data and manage the analysis of quantitative data. ● Write all Institutional Review Board proposals, amendments and consent and assent forms, data sharing agreements, and security protocols to align with safety and policy. ● Lead the development and mentoring of a college student research internship program for internship program alumni pursuing STEM college degrees on a NSF-funded research study.
- Drive outcomes through research-based data and analytics to: develop outreach and inclusive program strategies for increasing diversity in student recruitment across 25 STEM research internship programs; inform programmatic and curricular changes in STEM internships for over 1,000 NYC students participating in STEM internships, annually; inform diversity, equity, and inclusion training to over 350 scientist mentors providing workforce internships in STEM; developing a strategy for measuring partnership success in DEI goals across program directors, managers, and coordinators.
- Lead the development of structured and succinct communication strategy of research findings for a variety of stakeholder audiences, including: program and grant proposals, annual reports for funders, presentations local and national professional conferences, development of promotional videos summarizing the impact of research findings on diversity, equity, and inclusion goals.

*Current Research Studies:

- NSF Grant No. 2100155 - “Staying in Science: Investigating STEM Persistence Among High School Youth.” Awarded May, 2021
- NSF Grant No. 2049022 - “Preparing High School Students for Careers in Machine Learning through Mentored Scientific Research.” Awarded July, 2021
- NSF Grant No. 2033515 - “RAPID: Supports and Challenges in an Educational Crisis: The Impact of the COVID-19 Pandemic on Youth STEM Pathways.” Awarded August 2020 ● NSF Grant No. 1934039 - “Decoding Urban Ecosystems: Computational Thinking Integration in Middle School STEM (Decode-CT).” Awarded January 2020
- Institute of Museum & Library Services, Award # MA-10-19-0593-19 - “Next Generation Museum Conversations.” Awarded January 2020

Postdoctoral Research Fellow

American Museum Of Natural History, New York, NY

January 2017 - March 2021

Responsible for all aspects of implementation of National Science Foundation awarded research study “Staying in Science: Examining the Pathways of Underrepresented Youth Mentored in Research,” Grant No. 1561637. This grant is part of a 10-year longitudinal study examining how STEM-internship program design, implementation, and mentorship impacts students from historically underrepresented groups in their pursuit and persistence of the science, technology and engineering college degrees and careers.

- Facilitated all ongoing communication, project timelines and deliverables across multiple research-based institutions and university partners, including SRI International, City University of New York (CUNY), MIT, external evaluators and data analysts, National Science Foundation advisory board members, and project team staff.
- Developed and implemented a youth co-researcher program that recruited and hired program and research participants to collaborate with a senior research team. ● Lead the development, pilot testing, revision and implementation of qualitative and quantitative research instruments.
- Facilitated all data collection across multiple research sites (up to 24 sites). ● Managed and supported the cleaning, coding, and analysis of qualitative and quantitative data, including the development and revision of variables, codebooks, and a database for longitudinal research.
- Wrote all IRB proposals, amendments and consent and assent forms, data sharing agreements, and security protocols.
- Lead the communications strategy for research and evaluation findings, including: Lead author manuscripts for publication, including literature reviews and conceptual and analytic memos; lead the development of proposals and presentations for stakeholder audiences, including local and national professional conferences; wrote annual NSF reports; developed and wrote social media campaigns and video media content for dissemination of research findings; co-author grant proposals.

Director, Writing Center; Associate Director, University Writing Program

Rochester Institute Of Technology, Rochester, NY

July 2014 –December 2016

Responsible for all aspects of program design and implementation, including the recruitment, hiring, mentoring, training and on-going professional development of a diverse staff of student and faculty academic writing consultants. Developed a training curriculum and program aimed to both hire and mentor staff from diverse backgrounds to provide individual, group, and workshop

experiences to a large and diverse student population of over 16,000 undergraduate and 2,700 graduate students, including students speaking and writing in English as an additional language, Deaf and hard of hearing students, students on the autism spectrum, and students from historically underrepresented groups often marginalized within tech-focused academic settings.

- Managed and coordinated all aspects of the daily operations of the Writing Center (WC), including online writing support, writing consultant schedules, and online scheduling systems.
- Hired, trained, supervised, and evaluated a diverse staff of faculty and student writing consultants.
- Designed and delivered on-going professional development to WC staff in the areas of disciplinary identity development and writing across disciplinary contexts. ● Managed and supported connections between the Writing Commons, the University Writing Program, and the RIT colleges and programs.
- Strategically communicated with all faculty, staff, undergraduate and graduate students regarding services offered by the Writing Commons through multiple publicity strategies, including web, print, and social media.
- Oversaw collection of program data, conducted qualitative and quantitative analysis that supports the ongoing assessment of the program, and wrote mid-year and year-end reports for university stakeholders.
- Developed and evaluated WC policies, including guidelines for supporting a diverse student population.
- Designed and taught an advanced academic writing course on disciplinary identity development and literacy practices that provides undergraduate students in multiple disciplines opportunities to become writing consultants
- Designed and delivered writing support workshops for undergraduates and graduates.

Research Manager & Program Facilitator

University Of Rochester, Rochester, NY

July 2009 - June 2014

Responsible for the implementation and scaling-up of a longitudinal research study on young women's participation and science identity development in an out-of-school time science documentary film-making club: NSF Grant No. 1114481 - "Full-Scale Development: Science STARS-Nurturing Urban Girls' Identities Through Inquiry-Based Science." This grant aimed at providing middle and high school girls from historically underrepresented groups opportunities to pursue science and technology experiences through science investigations and filmmaking.

- Developed and managed NSF programmatic research agenda, including the coordination of communication among PIs and NSF advisory board members.

- Acted as liaison to Rochester City School District administration, staff, and faculty, local education and arts organizations, and youth's families.
- Managed the scaling up of the Science STARS program to two additional sites in Michigan and Washington states.
- Led the development, pilot testing, revision and implementation of qualitative and ethnographic research instruments.
- Led team of doctoral and pre-service teacher researchers in qualitative methods of participant observation at multiple research sites.
- Conducted qualitative and artifact-based analysis; managed and led the cleaning, coding, and analysis of qualitative data, including the development and revision of codebooks. ● Wrote all IRB proposals, amendments and consent and assent forms, data sharing agreements, and security protocols.
- Supported the design and implementation of a female underrepresented minority undergraduate near-peer mentor program to support the development of the program and increase opportunities for urban youth mentorship in science.
- Lead author manuscripts for publication, including literature reviews and conceptual and analytic memos; led the development of proposals and presentations for stakeholder audiences, including local and national professional conferences; wrote annual NSF reports and supported grant writing efforts.

Adjunct Professor

University Of Rochester, Rochester, NY

Warner School of Education; Susan B. Anthony Institute for Gender and Women's Studies, 2013
2007-2014

Developed and taught multiple graduate and undergraduate courses, including:

- A doctoral-level seminar in interview and focus group techniques;
- A doctoral-level graduate course to prepare graduate students to improve academic writing and develop strategies for understanding and writing graduate writing genres;
- A masters-level graduate course to prepare science teachers to effectively use reading, writing, and other forms of literacy to enhance science instruction;
- An undergraduate introductory seminar aimed at introducing STEM majors to feminist perspectives of western sciences.

Research Assistant

University Of Rochester, Rochester, NY

Warner School of Education; Susan B. Anthony Institute for Gender and Women's Studies, 2013
August 2007 - May 2010

Responsible for supporting Principal Investigator in managing and conducting ethnographic fieldwork of engineers publishing productivity in academic settings. This project aimed to examine how to increase the representation of women and individuals from underrepresented groups in engineering and technology research careers.

- Supported Principal Investigator in managing and conducting ethnographic fieldwork of engineers publishing productivity in academic settings.
- Developed and led the research component of the study on women and engineering. ● Trained new graduate research assistants in research methods, including data collection and analysis and developing academic papers for conference presentations and manuscripts for publication.
- Wrote extensive literature reviews, analysis of data, and findings for NSF proposals and presented findings at national and international conferences.

Coordinator, Writing Support Services

University Of Rochester, Rochester, NY

July 2007 - May 2010

Responsible for coordinating all aspects of the Writing Support Services (WSS) program under the direction of the program director. This program aimed at providing M.S. and Ph.D. students academic writing and research support.

- Trained student writing consultants in writing and teaching workshops.
- Developed and implemented writing workshops.
- Oversaw the scheduling of consultants and staffing of writing workshops, including continued management of the online database and scheduling system.
- Collaborated with administration to publicize WSS events and services through orientations and admissions events.
- Managed incoming requests for collaboration and support from faculty and department chairs, including fostering collaboration opportunities across graduate schools and medical programs at the University of Rochester.
- Conducted ongoing observations and mentoring of consultant staff.
- Reviewed student evaluations of consultants in order to provide individual and collective feedback and to identify areas for continuing development of consultants and the program. ● Ensured content of WSS workshops and consulting resources were current and directly relevant to academic writing and research standards.
- Supported program director in conducting annual programmatic reviews and writing annual reports.

Consulting & Evaluation Experience

Lead and/or contributed to the following collaborative evaluation studies aimed at providing students historically underrepresented in ecology and astronomy programmatic and curricular opportunities.

- **City Bats Evaluation, Fordham University, New York, NY, 2019 - 2021**

- Designed and implemented an evaluation to understand the impacts of an urban ecology curriculum on NYCDOE students' understanding, interest, and appreciation of urban ecology and the potential supports and obstacles teachers faced in implementing the curriculum.
- Designed and administered student surveys, conducted teacher interviews, analysis and written synthesis for reports.

- **National Astronomy Consortium (NAC) Evaluation, 2020 - 2021**

- Analysis and synthesis of evaluation case study data to assess the degree to which the NAC is achieving its goals of supporting underrepresented college students into careers in science research, understanding science in industry, and mentoring students into careers that fit with their own strengths and interests.

- **AstroComm NYC Program Evaluation, American Museum of Natural History, 2020 - 2021** ○

Analysis and synthesis of evaluation case study data to assess the degree to which AstroComm NYC is achieving its goals of supporting underrepresented college students into careers in science research, understanding science in industry, and mentoring students into careers that fit with their own strengths and interests.

Awards & Distinctions

2016 Susan B. Anthony Dissertation Award

Most distinguished dissertation in women's and/or gender studies awarded by faculty and administration of the University of Rochester Susan B. Anthony Institute for Gender and Women's Studies

2007-2013 Scandling Scholar

Full doctoral program funding awarded by faculty and administration of the University of Rochester Warner Graduate School of Education

2013 Graduate Teaching Fellowship

Teaching fellowship awarded for designing and teaching a Women's Studies course in her area of expertise. Course: Feminist Philosophies of Science

2010-2011 Pre-dissertation Award

Full dissertation funding awarded for demonstrating potential for an academic career by faculty and administration of the University of Rochester Warner Graduate School of Education

2009-2011, Doctoral Conference Presentation Award

2013 Full conference funding awarded for demonstrating potential to contribute to her field by faculty and administration of the University of Rochester Warner Graduate School of Education

2008-2009, Gender Studies Institute Research Grant

2010 Research grant awarded for promising research that contributes to the field of Gender and Women's Studies by awarded by faculty and administration of the University of Rochester Susan B. Anthony Institute for Gender and Women's Studies

2008 Fellow, National Writing Project

Fellowship awarded for improving knowledge of writing across multidisciplinary classrooms awarded by the University of Rochester Warner School of Education Genesee Valley Writing Project

2008 3-Year Excellence in Teaching Award

Awarded for early career faculty members with exceptional performance in teaching by faculty and administration of Roberts Wesleyan College

Publications

Chaffee, R., Todd, K.T., Gupta, P., May, S., Abouelkheir, M., Lagodich, L., Wang, J., Murphy, C., Lawrence, X. (In Press). Methods for co-researching with youth: A cross-case analysis of centering anti-adultist frameworks. Paper submitted to *International Journal of Qualitative Methods*.

Hammerness, K., Gupta, P., **Chaffee, R.**, Bjorklund, P., MacPherson, A., Abouelkheir, M., Lagodich, L., Podkul, T., Princiotta, D., Anderson, K., Adams, J. D., & Daly, A. (In press). From opportunity gap to opportunity yield: The benefits of out-of-school authentic mentored research for youth historically marginalized communities in STEM. Paper in press in Special Issue of *Journal of Applied Developmental Psychology*.

Chaffee, R., Bjorklund, P., Braverman, C., Gupta, P., Hammerness, K., MacPherson, A., Daly, A., Adams, J. D., Abouelkheir, M., Francis, J., Hinton, P., Lagodich, L., & Wu, L. (Under review). Finding people "like me": Student strategies for increasing belonging and flourishing in STEM. Paper in press in Special Issue of *Journal of Applied Developmental Psychology*.

Hammerness, K., **Chaffee, R.**, Bjorklund, P., Hinton, P., Daly, A., MacPherson, A., Gupta, P., Adams, J. D., Braverman, C., Francis, J., Lagodich, L., Wu, L., Abouelkheir, M. (Under review). A broader look at STEM pathways: The role of flourishing in broadening view of STEM youth development. Paper submitted to *The Journal of Positive Psychology and Well Being*.

MacPherson, A., **Chaffee, R.**, Bjorklund, P., Daly, A., Adams, J. D., Gupta, P., Hammerness, K. (Under review). Pipeline schmipeline: Exploring youth pathways in science. Paper submitted to *Teachers College Record*.

Chaffee, R., Hammerness, K., Gupta, P., Anderson, K., Podkul, T. (2023). Re-examining Wenger's community of practice theoretical framework: Exploring youth learning in science research. In P.Patrick (Ed.), *How People Learn in Informal Science Environments*, pp. 15-35. New York, NY: Springer. <https://doi.org/10.1007/978-3-031-13291-9>

Hammerness, K., MacPherson, A., Gupta, P., **Chaffee, R.**, Wallace, J. & Jain, N. (2023). What we've learned: A research agenda for a museum, six years later. *Curator: The Museum Journal*. <https://doi.org/10.1111/cura.12568>

Hammerness, K., MacPherson, A., Gupta, P., **Chaffee, R.**, Anderson, K., Lagodich, L. & Abouelkheir, M. (2022, March 14). Missed Opportunities in Online Learning. *Inside Higher Education*, available at: <https://www.insidehighered.com/views/2022/03/14/stem-students-struggled-online-learning-opinion>

Chaffee, R., Gupta, P., Jackson, T., Hammerness, K. (2021). Centering Equity and Access: An Examination of a Natural History Museum's Mentored Research Youth Program. In B. Bevan & B. Ramon (Eds.), *Theorizing Equity in the Museum: Integrating Perspectives from Research and Practice*, pp. 50-72. London, Routledge. <https://doi.org/10.4324/9780367823191>

Hammerness, K., MacPherson, A., Gupta, P., Jackson, T. & **Chaffee, R.** (2021, December/January). Partnerships to offer advanced learning to all students. *Phi Delta Kappan*, 103, vol. 4. Pp. 49-53.

Chaffee, R., & Gupta, P. (2018). Accessing the elite figured world of science. *Cultural Studies of Science Education*, 13(3), 797-805. <http://doi.org/10.1007/s11422-018-9858-0>

Chaffee, R., Luehmann, A., & Henderson, J. (2016). "Reflexivity is kicking our asses": Tensions in foregrounding photographs in a multimodal ethnographic analysis of participation. *Anthropology and Education Quarterly*, 47(4), 421-443. <http://doi.org/10.1111/aeq.12169>

Recent Scholarly Presentations

Adams, J. D., Gupta, P., **Chaffee, R.**, Abouelkheir, M., Francis, J. (2024). Whiteness, Slow Violence and the Enclosure of STEM Pathways. A paper presented at the Annual Meeting of the National

Association of Research in Science Teaching (NARST). Denver, CO.

Anna MacPherson, A., **Chaffee, R.**, Bjorklund, P., Daly, A, Adams, J. D., Gupta, P., Hammerness, K. (2024). Pipeline Schimpeline: Exploring Youth Pathways in Science. A paper presented at the Annual Meeting of the National Association of Research in Science Teaching (NARST). Denver, CO.

Gupta, P. **Chaffee, R.**, Crowley, K., Knutson, K., Perez, A. (2023) Studying Floor Facilitator Conversations in a Natural History Museum. A paper presented at the Annual Meeting of the National Association of Research in Science Teaching (NARST). Chicago, IL.

Chaffee, R., Gupta, P., May, S., Todd, K., Abouelkheir, M., Lagodich, L., Hammerness, K., Adams, J. D., & MacPherson, A. (2023). Engaging Youth as Co-Researchers: Exploring Collaborative Methods Aimed at Foregrounding Youth Voices. A poster presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

Hammerness, K., Gupta, P., MacPherson, A., **Chaffee, R.**, Bjorklund, P., Daly, A., Adams, J. D. (2023). *New Measures for a New Look at Youth Pathways*. A paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

Hammerness, K., Gupta, P., MacPherson, A., **Chaffee, R.**, Bjorklund, P., Daly, A., Adams, J. D. (2023). Staying in Science: A longitudinal study of youth persistence in STEM. A paper presented at the International Congress for School Effectiveness and Improvement (ICSEI) Annual Conference in January, 2023 in Santiago, Chile,

Chaffee, R., Gupta, P., Hammerness, K., Podkul, T., MacPherson, A. (2021). Supports and challenges during educational crisis: Impact of the Pandemic on Youth Pathways. A paper presented at the Annual Meeting of the National Association of Research in Science Teaching (NARST). Virtual Conference.

Chaffee, R., Gupta, P., Hammerness, K., Podkul, T., MacPherson, A. (2021). Supports and challenges during educational crisis: Impact of the Pandemic on Youth Pathways. A paper presented at the Annual Meeting of the National Association of Research in Science Teaching (NARST). Virtual Conference.

Chaffee, R., Weckel, M., Gupta, P., Hammerness, K., Podkul, T., & Anderson, K. (2019). Examining Youth Pathways in Conservation and Environmental Science. Paper presented at the Annual Meeting of the American Educational Research Association, Toronto, CA.