Steven Greenstein, PhD

greensteins@montclair.edu
Professor
Department of Mathematics
Montclair State University
Montclair, NJ

○ EDUCATION

2004 – 2010 Ph.D. Mathematics Education, *THE UNIVERSITY OF TEXAS AT AUSTIN*, Austin, TX
- Dissertation: *Developing a Qualitative Geometry from the Conceptions of Young Children*
- Supervisor: Walter Stroup, EdD

2001 – 2003 M.S. Mathematics, *TEXAS STATE UNIVERSITY*, San Marcos, TX
- Thesis: Variations on the Tower of Hanoi Puzzle
- Chair: Jian Shen, PhD

1991 – 1995 B.S. Mathematics, *GEORGIA STATE UNIVERSITY*, Atlanta, GA

○ EXPERIENCE

2025 – Present
Professor
Associate Chair
MONTCLAIR STATE UNIVERSITY, Montclair, NJ
Department of Mathematics

2017 – 2025
Associate Professor
Doctoral Program Director – Mathematics Education (2019 – 2024)
MONTCLAIR STATE UNIVERSITY, Montclair, NJ
Department of Mathematics

2012 – 2017
Assistant Professor (tenured in 2016)
MONTCLAIR STATE UNIVERSITY, Montclair, NJ
Department of Mathematical Sciences

2010 – 2012
Assistant Professor
UNIVERSITY OF THE VIRGIN ISLANDS, St Thomas, USVI
Department of Mathematical Sciences
Coordinator of *Foundations in Mathematics* Program

2010
Lecturer
THE UNIVERSITY OF TEXAS AT AUSTIN, Austin, TX
Department of Science and Mathematics Education

2008 – 2009	Assistant Instructor, UTeach Program *THE UNIVERSITY OF TEXAS AT AUSTIN,* Austin, TX Department of Science and Mathematics Education
2007 – 2009	Teaching Assistant, UTeach Program *THE UNIVERSITY OF TEXAS AT AUSTIN,* Austin, TX Department of Science and Mathematics Education
2005 – 2006	Assistant Instructor *THE UNIVERSITY OF TEXAS AT AUSTIN,* Austin, TX Department of Mathematics
2003 – 2004	Subject Matter Expert, In-House Teacher *THE UNIVERSITY OF TEXAS AT AUSTIN,* Austin, TX K-16 Education Center
2002 – 2003	Instructional Assistant, "Developmental Mathematics" *TEXAS STATE UNIVERSITY,* San Marcos, TX
2004 – 2005	Instructor, College Algebra *AUSTIN COMMUNITY COLLEGE,* Austin, TX
2000 – 2002	Mathematics Teacher *JOHNSTON HIGH SCHOOL,* Austin, TX
1999 – 2000	High School Mathematics Teacher *PAIDEIA SCHOOL,* Atlanta, GA
1996 – 1999	Upper School Mathematics Teacher *THE GALLOWAY SCHOOL,* Atlanta, GA
1995 – 1996	High School Mathematics Teacher *PACELLI HIGH SCHOOL,* Columbus, GA

○ GRANT ACTIVITY

Under review	Co-PI *Making Space: Mathematics Learning and Identity Development in Making-based Classroom Activities* WT Grant Foundation $600,000

2022 – 2023 Senior Personnel
MRI: Acquisition of an Extended Reality-Based Driving Simulator for User-Centered Interdisciplinary Research and Education at Montclair State University
NSF: Civil, Mechanical and Manufacturing Innovation (CMMI)
$533,798

2022 – 2023 Bristol Myers Squibb Foundation Grant
Convenings on Qualitative Creativity Education: Interdisciplinary Approaches to Enabling Young Children to Become More Fully Creative Thinkers, Makers, and Doers
$23,000

2022 – 2023 Summer Grant Proposal Development Award, Montclair State University
Nurturing Creativity and Innovation through Qualitative Mathematics
$4,000

2021 – 2024 Senior Personnel
MRI: Acquisition of a Multimodal Collaborative Robot System (MCROS) to Support Cross-Disciplinary Human-Centered Research and Education at Montclair State University
NSF: Computer and Network Systems (CNS)
$289,737

2021 – 2026 Collaborator
When and How to Use Manipulatives in Elementary Mathematics? Developing Practices That Promote Mathematical Reasoning
Social Sciences and Humanities Research Council of the Government of Canada: Insight Grant
$273,479

2018 – 2021 Principal Investigator
Preservice Elementary Teachers Making for Mathematical Learning
NSF: Discovery Research PreK-12 (DRK-12)
$422,195

2017 – 2025 Principal Investigator (Co-PI from 2017 – 2018)
Preparing the Effective Elementary Mathematics Teacher
NSF: Noyce Teacher Scholarship Grant
$1,449,992

2017 – 2018 Summer Grant Proposal Development Award, Montclair State University
Designing for Mathematical Experience
$4,000

2013 – 2016 Principal Investigator
Noyce @ Montclair: Preparing the Effective Elementary Mathematics Teacher
NSF: Noyce Capacity Building Grant
$225,000

2013 – 2014 Professional Development for Newark Public Schools (Grades 5 & 6)
Common Core Standards for Mathematics: Race to the Top 3 (sub-award)
$124,000

2011 – 2016 *UVI's Comprehensive Approach to Retention and Persistence in STEM*
NSF HBCU-UP Implementation Grant
Design of Peer-Led Team Learning (PLTL) for STEM students in entry-level mathematics courses (2011 – 2012)

2011 – 2013 Co-Principal Investigator
Noyce Capacity Building Project: STEM Teach VI
NSF: Noyce Capacity Building Grant
$300,000

2007 Innovative Social Entrepreneurship Design & Development Grant
LBJ School of Public Affairs, The University of Texas at Austin
Funding for the development of Distributed Biography
$500

2002 Dell Classroom Innovation Grant
JOHNSTON HIGH SCHOOL, Austin, TX
$5,000

○ EDITED SPECIAL ISSUES OF JOURNALS

Greenstein, S. & O'Meara, J. (2024, Summer) "Phenomenologies of Mathematics Teaching and Learning" [Special Issue]. *New Jersey Mathematics Teacher, 81*(2).

Zhang, D. & **Greenstein, S.** "Teaching Students with Mathematics Learning Disabilities: Research at the Intersection of Mathematics Education and Special Education" [Special Issue]. *Journal of Mathematical Behavior.* (2021). https://www.sciencedirect.com/journal/the-journal-of-mathematical-behavior/special-issue/10ZJDF7SNS8

Greenstein, S. & Russo, M. "Critical Mathematical Inquiry" [Special Issue]. *Bank Street Occasional Paper Series* 41. (2019), Retrieved from https://educate.bankstreet.edu/occasional-paper-series/vol2019/iss41/

○ PEER-REVIEWED JOURNAL PUBLICATIONS

Greenstein, S., Akuom, D., Pomponio, E. (under revision). Explicating the semiotic constitution of enacted mathematical meanings: The case of fraction division mediated by multiple artifacts.

Gantt, A., Paoletti, T., & **Greenstein, S.** (under revision). A semiotic analysis of mediated constructions of quantity.

Paoletti, T., Gantt, A.L., Vishnubhotla, M., & **Greenstein, S.** (2025). Refining Progressions and Tasks: A Case Study of Design Cycles to Support Covariational Reasoning. *Journal of Research in Science, Mathematics and Technology Education, 8*(1), 41-65. https://doi.org/10.31756/jrsmte.813

Greenstein, S., Kerr, I., & Olson, E. (2024). A "Teaching as Emergent Learning" Approach to Teaching Deep Creativity. *LASER Journal, 2*(1). https://digitalcommons.montclair.edu/laser-journal/vol2/iss1/3

Greenstein, S. & O'Meara, J. (2024, Summer). An introduction to the phenomenology of mathematics teaching and learning. *The New Jersey Mathematics Teacher, 81*(2), 6-11.

Yu, K. & **Greenstein, S.** (2024). Novel Representations of the Experiences of Calculus I Students' Participation in the Parallel Spaces of Coursework and Complementary Instruction. *Journal of Research in Science, Mathematics and Technology Education, 7*(SI), 175-193. https://doi.org/10.31756/jrsmte.318SI

Greenstein, S. & Nita, B. (2023). The Harp Project: Collective Learning at the Intersection of the Mathematical and Musical Arts. *PRIMUS, 34*(3), 284-301. https://doi.org/10.1080/10511970.2023.2282547

Bull, G., **Greenstein, S**., Ellis, J., Asim, S., Novitski, R., Whitewolf, E., & Lake, S. (2023). Metadata standards for educational objects. *Contemporary Issues in Technology and Teacher Education, 23*(3). https://citejournal.org/volume-23/issue-3-23/objects-to-think-with/metadata-standards-for-educational-objects

Jansen, A., & **Center for Inquiry and Equity in Mathematics**. (2023). Entangling and Disentangling Inquiry and Equity: Voices of Mathematics Education Professors and Mathematics Professors. *Journal of Urban Mathematics Education, 16*(1), 10-39. https://doi.org/10.21423/jume-v16i1a473

Marshall, A.M., Sword, S., Applegate, M., **Greenstein, S.**, Pendleton, T., Yong, K., Wolfe, J., Chao, T., & Harris, P.E. (2023). "I Got You": Centering Identities and Humanness in Collaborations Between Mathematics Educators and Mathematicians. *Journal of Humanistic Mathematics, 13*(2), 309-337. https://scholarship.claremont.edu/jhm/vol13/iss2/17

Greenstein, S. & Fernández, E. (2023). Learning Mathematics with Mathematical Objects: Cases of Teacher-Made Mathematical Manipulatives. *Contemporary Issues in Technology and Teacher Education, 23*(1). https://citejournal.org/volume-23/issue-1-23/objects-to-think-with/learning-mathematics-with-mathematical-objects-cases-of-teacher-made-mathematical-manipulatives

Greenstein, S. & Limbere, A. (2023). Parents' and Caregivers' Voices in Education Reform. *The New Jersey Mathematics Teacher*, *80*(1), 13-15.

Akuom, D., & **Greenstein, S.** (2022). The Nature of Prospective Mathematics Teachers' Designed Manipulatives and their Potential as Anchors for Conceptual and Pedagogical Knowledge. *Journal of Research in Science, Mathematics and Technology Education*, *5*(SI), 109-125. Bronze Medal Award. https://doi.org/10.31756/jrsmte.115SI

Greenstein, S. & Zhang, D. (2022). Understanding, Honoring, and Enabling the Mathematical Participation of Students with Disabilities through Research at the Intersection of Special Education and Mathematics Education. *The Journal of Mathematical Behavior, 65*. https://doi.org/10.1016/j.jmathb.2021.100919

Zhang, D., Indyk, A., & **Greenstein, S.** (2020). Effects of Schematic Chunking on Enhancing Geometry Performance in Students with Math Difficulties and Students at Risk of Math Failure, *Learning Disability Quarterly*. https://doi.org/10.1177/0731948720902400

Greenstein, S. & Russo, M. (2019). Teaching for Social Justice through Critical Mathematical Inquiry. *Occasional Paper Series, 2019* (41). Retrieved from https://educate.bankstreet.edu/occasional-paper-series/vol2019/iss41/1

Basu, D., & **Greenstein, S.** (2019). Cultivating a Space for Critical Mathematical Inquiry through Knowledge-Eliciting Mathematical Activity. *Occasional Paper Series, 2019* (41). Retrieved from https://educate.bankstreet.edu/occasional-paper-series/vol2019/iss41/4

Greenstein, S. & Baglieri, S. (2018). Imagining Mathematical Thinking for Inclusive Curriculum: A Conversation. *Investigations in Mathematics Learning, 10*(3), 1-12. https://doi.org/10.1080/19477503.2018.1467091

Greenstein, S. (2018). Designing a Microworld for Topological Equivalence. *Digital Experiences in Mathematics Education, 4*(1)*,* 1-19. https://doi.org/10.1007/s40751-017-0035-y

Greenstein, S. & Olmanson, J. (2018). Reconceptualizing Pedagogical and Curricular Knowledge Development Through Making. *The Emerging Learning Design Journal, 4*(1)*,* Article 2.

Greenstein, S. & Ekici, C. (2017). At the Intersection of Teaching and Cultural Diversity: Modeling a Culturally Responsive Mathematics Pedagogy for the U.S. Virgin Islands. *Journal of Mathematics and Culture, 11*(4), 39-82.

Greenstein, S., Leszczynski, E., & Fernandez, E. (2017). 3D Designing for Mathematical Learning, *Mathematics Teaching in the Middle School, 23*(1), 50-53.

Buell, C., **Greenstein, S.**, Wilstein, Z. (2017). Constructing an Inquiry Orientation from a Learning Theory Perspective: Democratizing Access through Task Design. *PRIMUS*, *27*(1), 75-95. (Equal Authorship). https://doi.org/10.1080/10511970.2016.1194339

Greenstein, S. (2014). Making Sense of Qualitative Geometry: The Case of Amanda. *The Journal of Mathematical Behavior*, *36*, 73-94.

Greenstein, S. (2013). Connecting Rate Using Dynamic Representational Technologies. *The New Jersey Mathematics Teacher, 71*(2), 13-20.

○ PEER-REVIEWED PUBLICATIONS AS BOOK CHAPTERS

Greenstein, S., Jeannotte, D., & Pomponio, E. (2024). Making as a Window into the Process of Becoming a Teacher: The Case of Moira. In Benken, B. M. (Ed.) *The AMTE Handbook of Mathematics Teacher Education, Volume 5: Reflection on Past, Present and Future – Paving the Way for the Future of Mathematics Teacher Education.* (pp. 423-445). Information Age Publishing, Inc. https://www.infoagepub.com/products/Reflection-on-Past-Present-and-Future

Greenstein, S., Akuom, D., Pomponio, E., Fernández, E., Davidson, J., Jeannotte, D., & York, T. (2022). *Vignettes of Research on the Promise of Mathematical Making in Teacher Preparation* (pp. 73-109). In F. Dilling, F. Pielsticker, & I. Witzke (Eds.) Learning Mathematics in the Context of 3D Printing: Springer Spektrum, Wiesbaden. https://doi.org/10.1007/978-3-658-38867-6_4

Empson, S., **Greenstein, S.**, Maldonado, L., Roschelle, J. (2012). Scaling Up Innovative Mathematics in Middle Grades Mathematics: Case Studies of "Good Enough" Enactment. In S. Hegedus & J. Roschelle (Eds.), *The SimCalc Vision and Contributions: Democratizing Access to Important Mathematics*. Springer.

Carmona, G. & **Greenstein, S.** (2010). Investigating the Relationship Between the Problem and the Solver: Who Decides What Math Gets Used? In R. Lesh, P. L. Galbraith, C. R. Haines & A. Hurford (Eds.), *Modeling Students' Mathematical Modeling Competencies: ICTMA 13*: Springer.

○ PEER-REVIEWED PUBLICATIONS IN CONFERENCE PROCEEDINGS

Olson, E., **Greenstein, S.**, Bonneau, A., Looney, B., & Frimpong, M. (2025). *Situated and enactive perspectives on the formative potential of agentive games in identity re/formation.* Paper to be presented at the 47th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Penn State University.

York, T., Gantt, A. L., **Greenstein, S.**, Valero, J., & Stepnowski, W. (2025). *Perspectives on Enactive Design for Students' Mathematical Knowing.* Paper to be presented at the 47th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Penn State University.

Greenstein, S., Looney, B., Kerr, I., Yu, K., Olson, E., & Pomponio, E. (2024). *Teaching for Deep Creativity through Qualitative Geometry: The Case of Opal, Age 5*. In Kosko, K. W., Caniglia, J., Courtney, S. A., Zolfaghari, M., & Morris, G. A. (Eds.). Proceedings of the 46th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Kent State University, 461-466. https://doi.org/10.51272/pmena.46.2024

Yu, K. & **Greenstein, S.** (2024, February). *Case Studies of Undergraduate Students' Agentive Participation in the Parallel Spaces of Calculus I Coursework and Peer-Led, Inquiry-Oriented, Complementary Instruction.* Proceedings of the 27th Annual Conference on Research on Undergraduate Mathematics Education (RUME), Omaha, NE.

Greenstein, S., Akuom, D., Pomponio, E., Gantt, A. (2023). *What can semiotic theory contribute to an enactivist analysis of sense making with multiple artifacts?* (pp. 218-227). In Lamberg, T., & Moss, D. (Eds). Proceedings of the 44th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (Vol. 1). University of Nevada, Reno.

Gantt, A., Paoletti, T., & **Greenstein, S.** (2022). *"This One is That": A Semiotic Lens on Quantitative Reasoning.* In Lischka, A. E. (Eds.). Proceedings of the 44th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Middle Tennessee State University, 799-807. https://doi.org/10.51272/pmena.44.2022

Akuom, D., **Greenstein, S.**, & Fernández, E. (2022). *Mathematical Making in Teacher Preparation: Research at the Intersections of Knowledge, Identity, Pedagogy, and Design.* In Lischka, A. E. (Eds.). Proceedings of the 44th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Middle Tennessee State University, 1199-1208. https://doi.org/10.51272/pmena.44.2022

York, T., **Greenstein, S.**, & Akuom, D. (2022). *Embodying Covariation Through Collaborative Instrumentation.* In Lischka, A. E. (Eds.). Proceedings of the 44th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Middle Tennessee State University, 2093-2101. https://doi.org/10.51272/pmena.44.2022

Akuom, D. & **Greenstein, S.** (2021). *Prospective Mathematics Teachers' Designed Manipulatives As Anchors for Their Pedagogical and Conceptual Knowledge* (pp. 851-860). In Olanoff, D., Johnson, K., & Spitzer, S.M. (Eds.). Proceedings of the 43rd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Philadelphia.

Greenstein, S., Pomponio, E., & Akuom, D. (2021). *Harmony and Dissonance: An Enactivist Analysis of the Struggle for Sense Making in Problem Solving* (pp. 509-517). In Olanoff, D., Johnson, K., & Spitzer, S.M. (Eds.). Proceedings of the 43rd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Philadelphia.

Greenstein, S., Jeannotte, D., Fernández, E., Davidson, J., Pomponio, E., & Akuom, D. (2020). *Exploring the Interwoven Discourses Associated with Learning to Teach Mathematics in a Making Context* (pp. 810-816). In A.I. Sacristán, J.C. Cortés-Zavala & P.M. Ruiz-Arias, (Eds.). Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Mexico.

Mohamed, M., Paoletti, T., Vishnubhotla, M., **Greenstein, S.**, & Lim, S. (2020). *Supporting Students' Meanings for Quadratics: Integrating RME, Quantitative Reasoning, and Designing for Abstraction* (pp. 167-175). In A.I. Sacristán, J.C. Cortés-Zavala & P.M. Ruiz-Arias, (Eds.). Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Mexico.

Greenstein, S., Fernández, E. & Davidson, J. (2019). *Revealing Teacher Knowledge Through Making: A Case Study of Two Prospective Mathematics Teachers* (pp. 1151-1156). In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.) Proceedings of the 41st Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education. St. Louis, MO: University of Missouri.

Paoletti, T., **Greenstein, S.**, Vishnubhotla, M., & Mohamed, M. (2019). *Designing Tasks and 3D Physical Manipulatives to Promote Students' Covariational Reasoning* (pp. 3: 193-201). In Graven, M., Venkat, H., Essien, A. & Vale, P. (Eds). Proceedings of the 43rd Annual Conference of the International Group for the Psychology of Mathematics Education. Pretoria, South Africa.

Greenstein, S. & Seventko, J. (2017). *Mathematical Making in Teacher Preparation: What Knowledge is Brought to Bear?* In E. Galindo & J. Newton, (Eds.). Proceedings of the 39th Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education (pp. 821-828). Indianapolis, IN.

Greenstein, S., Panorkou, N., Seventko, J. (2016). *Optimizing Teacher and Student Agency in Minecraft-Mediated Mathematical Activity.* Proceedings of the 38th Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tucson, AZ.

Panorkou, N. & **Greenstein, S.** (2015). *A Learning Trajectory for Transformation-Based Reasoning in Geometry.* In Che, M. & Adolphson, K. (Eds.). Proceedings of the 2015 Research Council on Mathematics Learning (RCML) Conference, Las Vegas, NV.

Greenstein, S. (2013). *Mathematics Thinking and Learning as Microworld-Mediated Mathematical Activity.* In Martinez, M. & Castro Superfine, A. (Eds.). Proceedings of the 35th Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Chicago, IL.

Olmanson, J., **Greenstein, S.**, Smith, A., Brewer, C. (2007, October). *Designing distributed biography: Co-constructing a polyphonic application on borrowed time* (Vol. 25, pp. 21-25). Proceedings of the 25th ACM International Conference on Design of Communication, ACM Press, El Paso, TX.

○ INVITED TALKS

Fall 2025	*Thinking with Things about Mathematical Things* MAA New Jersey Section Meeting, Rowan College at Burlington County.
Fall 2024	*Thinking with Things about Mathematical Things* MAA Eastern Pennsylvania/Delaware Section Meeting, Penn State Abington http://sections.maa.org/epadel/meetings/2024/fall/#greenstein
Fall 2024	*Learning to Teach Elementary Mathematics Through Digital Design, Fabrication, & Evaluation* Fab Learning Academy, https://tinyurl.com/montclairfablearningacademy
Spring 2024	Shapiro, D., Bull, G., & **Greenstein, S.** *Developing an Open-Sourced CAD-Based System and Curriculum for Teachers.* ITEEA's Professional Learning STEMinar Series, https://www.iteea.org/events/developing-an-open-sourced-cad-based-system
Spring 2024	*Improving the Teaching and Learning of Elementary Mathematics Through Digital Fabrication* Fab Foundation, http://tinyurl.com/montclairfabfoundation

Fall 2022 *What might a mathematics look like that changes people's relationships with math for the better?* Math4All podcast, Molly Vokey & Heidi Sabnani, Producers. https://youtu.be/9-F4e8YOPoc

Summer 2022 *Learning to Teach Mathematics through Making* (MathéRéaliser Study Days, Université Laval, Quebec)

Spring 2022 *Learning to Teach Mathematics through Making* (Copernicus Science Centre, Warsaw, Poland)

Fall 2018 *Topology, Technology, and Children's Ideas.* (Rutgers University, New Brunswick, NJ)

Summer 2017 *Orienting Mathematical Inquiry Toward Social Justice.* MAA Project NExT Workshops given at *MathFest*, the annual meeting of the Mathematical Association of America (MAA), Chicago, IL.

Summer 2017 *Topology, Technology, and Children's Ideas.* (Metropolitan State University, St. Paul, MN)

Spring 2016 *Topology, Technology, and Children's Ideas.* (University of Maine, Orono, ME)

Spring 2016 *How to Help Your Child Excel in Mathematics with Dr. Steven Greenstein.* The Mom and Dad Academy, Saban, S., Producer.

Fall 2015 *Topology, Technology, and Children's Ideas.* (Sacred Heart University, Fairfield CT)

Spring 2015 *At the Intersection of Teaching and Cultural Diversity: Modeling a Contextually Situated, Culturally Resonant Pedagogy.* Presented at the Annual Conference of VI-EPSCoR (Virgin Islands Experimental Program to Stimulate Competitive Research): St. Croix, USVI.

Summer 2014 *Developing a Contextually Situated, Culturally Resonant STEM Secondary Teacher Preparation Program.* (University of the Virgin Islands)

Fall 2014 *Noyce @ Montclair: Preparing the Effective Elementary Mathematics Teacher.* Presented at the PARCC Convening for Common Core Math Education, Middlesex County College.

Fall 2011 *Changing the Mathematics and the Mathematics of Change.* Exploring the pedagogical possibilities in undergraduate mathematics classrooms of a variety of computing environments including domain-specific exploratory playgrounds. (University of the Virgin Islands)

Summer 2011 *Learning to Listen, Listening to Learn.* A workshop for secondary mathematics teachers and coaches focused on formative assessment and the development of formative tasks. (University of the Virgin Islands)

○ CONFERENCE PRESENTATIONS AND ACTIVITIES

Panorkou, N., **Greenstein, S.**, Leonard, H., Provost, A. (under review). *Responsive Professional Development for Curricular and Pedagogical Innovation: The Case of Balancing Acts*. Presentation to be given at the Annual Conference of the Association of Mathematics Teacher Educators (AMTE), Portland, OR.

Nathan, M., Kokushkin, V., Tancredi, S., Dimmel, J., **Greenstein, S.**, & Henriquez, E. (2025, October) *Embodied Mathematical Imagination and Cognition (EMIC)*. Research Colloquium to be hosted at the 47th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Penn State University.

Panorkou, N. & **Greenstein, S.** (2025, November). *Balancing Acts: Unlocking the Big Ideas of Equality and Equivalence*. Presentation to be given at the Annual PreK-5 Conference of the Association of Mathematics Teacher Educators in New Jersey (AMTNJ), Lincroft, NJ.

Panorkou, N. & **Greenstein, S.** (2025, May). *"The Balancing Acts Instructional Routine for Developing the Big Ideas of Equality and Equivalence."* Presentation given at the Annual Conference of the New Jersey Association of Mathematics Teacher Educators (NJAMTE), The College of New Jersey.

Yu, K. & **Greenstein, S.** (2025, February). *How Is It That Four Heads are Better Than One?: An Exploratory Analysis of the Emergent Path of Small-Group Problem Solving*. Poster presented at The 27th Annual Conference on Research on Undergraduate Mathematics Education (RUME), Alexandria, VA.

Greenstein, S. & Panorkou, N. (2025, February). *Balancing Acts: An Innovative Instructional Routine for Developing Equality and Equivalence in K-12 STEM Education*. Presentation to be given at the Annual Conference of the Association of Mathematics Teacher Educators (AMTE), Reno, NV.

Olson, E., **Greenstein, S.**, & Kerr, I. (2024, November). *Stretchy Minds: Building Foundations for Deep Creativity Through Early Experiences with Qualitative Geometry*. Proceedings of the 46th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Kent State University.

Greenstein, S. & Akuom, D. (2024, February). *The Promise of Mathematical Making in Teacher Preparation*. Presentation given at the Annual Conference of the Association of Mathematics Teacher Educators (AMTE), Orlando, FL.

Greenstein, S., Yu, K., & Olson, E. (2024, January). *DIY Math Manipulatives for Agentive Teaching and Playful Learning*. Presentation given at eduFab's annual Fab Educators Summit. Virtual meeting.

Basu, D., Davidson, J., & **Greenstein, S.** (2022). *Justice-Oriented Curricular Experience as a Site for Math Education Reform*. Poster presented at the American Association of Colleges and Universities (AAC&U) 2022 Conference on Diversity, Equity, and Student Success.

Bonaccorso, V. & **Greenstein, S.** (2023, June). *Finding Common Ground: Preparing Math Educators and Special Educators.* Presentation given at the Annual Conference of the New Jersey Association of Mathematics Teacher Educators (NJAMTE), The College of New Jersey.

Jansen, A., & **Center for Inquiry and Equity in Mathematics**. (2021). *Entangling and disentangling inquiry and equity: Voices of mathematics education and mathematics professors*. In Olanoff, D., Johnson, K., & Spitzer, S.M. (Eds). Proceedings of the 43rd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (p. 222). Philadelphia, PA.

Akuom, D., Davidson, J., Pomponio, E., Fernández, E., & **Greenstein, S.** (2021, September). *The Personal, Pedagogical, And Problem-Solving Possibilities of Mathematical Making in Teacher Preparation.* Presentation given at the Virtual International Symposium on 3D Printing in Mathematics Education, University of Siegen, Germany.

Akuom, D., & **Greenstein, S.** (2021, April). *Prospective Teachers' Design Decisions, Rationales, and Resources: Re/claiming Teacher Agency Through Mathematical Making.* Paper presented at the Virtual Annual Meeting of the American Educational Research Association (AERA). https://bit.ly/3tbXUPP

Pomponio, E., **Greenstein, S.**, & Akuom, D. (2020). *Making Sense of Senseless Things: An Enactivist Analysis of Harmony and Dissonance in Problem Solving.* In A.I. Sacristán, J.C. Cortés-Zavala & P.M. Ruiz-Arias, (Eds.). Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Mexico (pp. 1015-1016). Cinvestav/AMIUTEM/PME-NA.

Pomponio, E., Davidson, J., **Greenstein, S.**, Fernández, E., Jeannotte, D., & Akuom, D. (2020, October). *ReMaking Teacher Learning: Designing Objects-to-Teach-With to Promote Mathematics Education Reform.* Paper presented at the Annual FabLearn Conference, NYC.

Zhang, D., Indyk, A., & **Greenstein, S.** (2020, April). *Effects of Schematic Chunking Accommodation on Enhancing Geometry Performance in Students with Math Difficulties and Students at Risk of Math Failure.* Paper presented at the Annual Meeting of the American Educational Research Association (AERA), San Francisco. (conference canceled)

Davidson, J., Fernández, E., & **Greenstein, S.** (2019, November). *Teachers Making Manipulatives to Promote Pedagogical Change.* Poster presented at the 41st Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education. St. Louis, MO.

Davidson, J., Basu, D., **Greenstein, S.**, & Davidson, J. (2019, July). *The Power of Mathematical Power to Right Wrongs and Write Rights.* Presentation given at the Free Minds, Free People Conference, Twin Cities, MN.

Basu, D. & **Greenstein, S.** (2018, June). *Designing Tasks that Elicit Children's Multiple Mathematical Knowledge Bases.* Presentation given at the TODOS: Mathematics for All Conference, Scottsdale, AZ.

Panorkou, N. & **Greenstein, S.** (2018, April). *Designing for Student and Teacher Agency in a Sandbox-style Video Gaming Environment.* Paper presented at the Annual Meeting of the American Educational Research Association (AERA), New York.

Greenstein, S. & Anderson, A. (2018, February). *Children's Topological Thinking.* Poster presented at The 21st Annual Conference on Research on Undergraduate Mathematics Education (RUME), San Diego, CA.

Greenstein, S. & Fernández, E. (2017, June). *Developing Teacher Knowledge through Mathematical Making.* Presentation given at the Annual Conference of the New Jersey Association of Mathematics Teacher Educators (NJAMTE), The College of New Jersey.

Greenstein, S. & Olmanson, J. (2017, May). *A Digital Design and Fabrication Approach to Pedagogical and Curricular Exploration in Teacher Preparation and Professional Development.* Presentation given at the Construct3D 2017 Conference, Duke University.

Greenstein, S. & Seventko, J (2017, March). *Pedagogical and Curricular Change Through Making for Mathematical Learning.* Presentation given at the annual meeting of the Research Council on Mathematics Learning (RCML) Conference, Fort Worth, TX.

Seventko, J., Panorkou, N., & **Greenstein, S.** (2017, March). *Balancing Teachers' Goals and Students' Play in a Video Game Environment.* Presentation given at the annual meeting of the Research Council on Mathematics Learning (RCML) Conference, Las Vegas, NV.

Greenstein, S. (2016, November). *Designing Configure: A Microworld for Learning Qualitative Geometry.* Poster presented at the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tucson, AZ.

Greenstein, S. & Olmanson, J. (2016, June) *Designing at the Intersection of Theory, Content, & Pedagogical Experience.* Presented at the 6th Annual Emerging Learning Design Conference (ELD16), Montclair State University, Montclair, NJ.

Greenstein, S. (2016, April). *Using Content Maps to Represent Qualities of Teachers' Mathematical Instruction.* Paper presented at the Annual Meeting of the National Council of Teachers of Mathematics (NCTM), San Francisco.

Buell, C., **Greenstein, S.**, Wilstein, Z. (2015, August). Co-Chairs of the Themed Contributed Paper Session, *Democratizing Access to Authentic Mathematical Activity*, at *MathFest*, the annual meeting of the Mathematical Association of America (MAA), Washington, D.C.

Panorkou, N. & **Greenstein, S.** (2015, August). *A Learning Trajectory for Transformation-Based Reasoning in Geometry.* Poster presented at the 16th Biennial EARLI Conference for Research on Learning and Instruction, Limassol, Cyprus.

Greenstein, S. & Ekici, C. (2015, April). *At the Intersection of Inquiry and Cultural Diversity: Modeling a Contextually Situated, Culturally Resonant Pedagogy*. Paper presented at the Annual Meeting of the American Educational Research Association (AERA), New Orleans.

Greenstein, S., Buell, C., Wilstein Z. (2015, January). *Methods for Democratizing Inquiry for K-16 Students and Teachers*. Presented at the MAA Contributed Paper Session on *Teaching Inquiry* at the Joint Mathematics Meetings, San Antonio, TX.

Greenstein, S., Ekici, C., Wooten, T. (2014, October). *An Analysis of Locally Effective Practices Towards Developing a Contextually Situated STEM Teacher Education Program*. Presented at the International Society of Educational Research (iSER) 2014 World Conference, Cappadocia, Turkey.

Greenstein, S. (2014, October). *If Practice were Privileged Over Content*. Presented at the 25th annual conference of the Association of Math Teachers of New Jersey (AMTNJ), New Brunswick, NJ.

Greenstein, S. (2014, June*). Broadening School-Based Conceptions of Inquiry to Cultivate Critical Consciousness and Develop Mathematical Knowledge*. Presented at the 17th annual Inquiry-Based Learning Conference, Denver, CO.

Greenstein, S., Krupa, E., Wooten, T. (2014, January). *Noyce @ Montclair: Preparing the Effective Elementary Teacher*. Poster presented at the MAA Poster Session of Projects Supported by the NSF Division of Undergraduate Education at the Joint Mathematics Meeting, Baltimore, MD.

Greenstein, S. (2013, May). *Adapting a STEM Teacher Preparation Program for Context and Cultural Resonance*. Interactive Presentation at the 7th Annual UTeach Conference, Austin, TX.

Greenstein, S. (2012, August). *Reconceiving Developmental Mathematics: Embracing the Diversity of Students' Mathematical Knowledge*. Paper presented at *MathFest*, the annual meeting of the Mathematical Association of America (MAA), Madison, WI.

Greenstein, S. (2011, April). *The Development of Young Children's Qualitative Geometric Reasoning*. Paper presented at the Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Indianapolis.

Greenstein, S. (2011, April). *Developing a Qualitative Geometry from the Conceptions of Young Children*. Paper presented at the Annual Meeting of the American Educational Research Association (AERA), New Orleans.

Brewer, C., Olmanson, J., **Greenstein, S.** (2011, April). An Affinity for Design, Deleuze, and Research: Democratized, Heterogeneous, Non-hierarchical Collaboration on a Distributed Writing Tool. In M. Liu (Chair), *An Affinity for Educational Research and Technology Design: Student-led Design, Development, and Inquiry Endeavors.* Paper presented at the annual meeting of the American Educational Research Association (AERA), New Orleans.

Greenstein, S. & Remmler, C. (2011, April). reConfiguring the Teaching Experiment: Developing a Software Environment to Expand the Methodological Possibilities. In M. Liu (Chair), *An Affinity for Educational Research and Technology Design: Student-led Design, Development, and Inquiry Endeavors.* Paper presented at the Annual Meeting of the American Educational Research Association (AERA), New Orleans.

Greenstein, S. (2010, April*). Developing a Qualitative Geometry from the Conceptions of Young Children*. Paper presented at the Annual Meeting of the National Council of Teachers of Mathematics (NCTM), San Diego.

Olmanson, J., **Greenstein, S.** (2009, August). *The Crowdsourcing of Memory: Distributed Biography and Participatory Content Creation*. Presented at the THATCamp Conference on the Digital Humanities, Austin, TX.

Greenstein, S. & Olmanson, J. (2009, August). *Mosaics of Identity and Memory: Situating Distributed Biography within the Digital Humanities*. Presented at the THATCamp Conference on the Digital Humanities, Austin, TX.

Chao, T., Empson, S., **Greenstein, S.**, & Maldonado, L. (2008, July). *Introducing content maps as a tool to analyze connections made within a mathematics classroom: What does learning look like?* Presented at the Algebra Project 25th Anniversary National Conference, "Raising the Floor: Quality Education as a Constitutional Right," Jackson, MS.

Empson, S., **Greenstein, S.**, Maldonado, L., Chao, T. (2008, March) A discourse-analytic perspective on relationships between students' opportunities to engage with mathematics and achievement gains. In J. Roschelle (Chair), *Enhancing Mathematics Learning with Technology: Civic, Teacher, Student, and Content Perspectives on Scaling Up SimCalc*. Symposium conducted at the Annual Meeting of the American Educational Research Association (AERA), New York City.

Greenstein, S., Maldonado, L., & Pierson, J. (2007, July). *Using a computational, finite-difference model to understand the trainer-of-trainers model of teacher professional development*. Paper presented at the 13th International Conference on the Teaching of Mathematical Modeling and its Applications, Bloomington, IN.

Greenstein, S. (2007, July). *Developing a Qualitative Geometry: Documenting and Characterizing the Distinctions Between Geometric Figures that Young Children Make*. Research planning poster presented at the 13th International Conference on the Teaching of Mathematical Modeling and its Applications, Bloomington, IN.

Greenstein, S. (2006, November). *Shaking Hands, Completing Graphs: What can be gained by leveraging everyday experiences in the development of arithmetic models that support algebraic reasoning?* Poster presented at the 28th Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Mérida.

○ SOFTWARE DESIGN AND DEVELOPMENT

Greenstein, S., Remmler, C. (2016) *Configure 2.0*. Available at http://playwithshapes.com.

Greenstein, S., Remmler, C. (2010) *Configure 1.0*. Available at http://bit.ly/configure1 (Configure is a dynamic geometry environment that supports topological transformations and investigations of plane figures.)

Olmanson, J. & **Greenstein, S.** (n.d.). *Distributed Biography*. Austin, TX: Digital Spaces Working Group. (Distributed Biography is a web 2.0-based application that supports the creation, collection, compilation and display of written narratives by multiple individuals about an individual of mutual interest.)

○ OTHER PUBLICATIONS

Greenstein, S. & Kerr, I. (2024). The Stretchy Minds conceptual framework: An enactive approach to teaching qualitative change for deep creativity within elementary mathematics education. [White Paper]. http://dx.doi.org/10.13140/RG.2.2.23519.47528

Bull, G., Long, J., **Greenstein, S.** (2023, November 14). Exploring strategies for extending the use of open hardware in K-12 schools. *Open Science Shop Newsletter*. https://open-science-shop-blog.ghost.io/adapting-open-hardware-products-for-k-12-science-education/

Greenstein, S. (2023). *Fractles: 360/4 Days of Fraction-Packed Fun*. KDP Select. ISBN: 9798368356518. https://a.co/d/fQVQrbs

Davidson, J., **Greenstein, S.**, Basu, D., & Davidson, J. (2020). Making mathematical sense of food justice. In R. Q. Berry, III, B. Conway, IV, B. R. Lawler, & J. W. Staley (Eds.), *High school mathematics lessons to explore, understand, and respond to social injustice*: Corwin Mathematics & National Council of Teachers of Mathematics.

Greenstein, S. & Seventko, J. (2018). Race to 20 [Postscript], *Teaching Children Mathematics, 24*(5), 336.

Greenstein, S. (2016). Making for Mathematical Experience. In *InformalScience.org*. Retrieved from https://www.informalscience.org/news-views/math-and-making.

Greenstein, S., Dance, R., Sandefur, J. (2012). "Foundations in Algebra I & II: A Supplement to Elementary Algebra (1979) by Harold Jacobs."

○ CONSULTANTS ON PROJECTS

2020 – 2025 Consultant, Instructor of Mathematics
Urban Teacher Residency at Montclair State University
Teacher Quality Partnership Grant, U.S. Department of Education

2015 – 2020 Consultant, Instructor of Mathematics
Newark-Montclair Urban Teacher Residency Program
Teacher Quality Partnership Grant, U.S. Department of Education

2014 – 2020 Consultant, STEM Education Research
"*Mare Nostrum Caribbean* (Our Caribbean Sea): Stewardship Through Strategic Research and Workforce Development"
NSF: EPSCoR Research Infrastructure Improvement Grant

○ SELECTED GRANTS NOT FUNDED

2025 – 2028 Co-Principal Investigator
Making Space: Mathematics Learning and Identity Development in Making-based Classroom Activities. NSF: Discovery Research PreK-12 Program (DRK-12)

2025 – 2027 Co-Principal Investigator
Establishing a Culture and Community to Facilitate Extension of Open Science Hardware to K-12 Schools. NSF: Pose Phase II

2024 – 2026 Co-Principal Investigator
Establishing an Ecosystem for Open-Source Educational CAD Models
NSF: Pathways to Enable Open-Source Ecosystems (POSE II)

2023 – 2026 Principal Investigator
Expanding Creativity: Nurturing Transformative Innovation through Qualitative Mathematics
National Science Foundation: EHR Core Research

2013 Principal Investigator
Child's Play: Development and Evaluation of a Mathematical Microworld for Learning Qualitative Geometry
Spencer Foundation Research Grant

○ AWARDS, HONORS, AND FELLOWSHIPS

2019 – 2020 Faculty Fellow, Center of Inquiry and Equity in Mathematics

2016 Funded Research Participant, AERA-Sponsored Research Conference on Making and Learning, Pittsburgh, PA

2011 – 2012 Project NExT Fellowship

2009 – 2010 Continuing Fellowship, The University of Texas at Austin

2008 – 2009 The Cullen Trust Endowment Fellowship, The University of Texas at Austin

2007 Joseph L. Henderson & Kathryn D. Henderson Scholarship, The University of Texas at Austin

2006 Jewel Popham Raschke Endowed Presidential Scholarship in Mathematics Education, The University of Texas at Austin

2003 Graduate Student Award for Outstanding Achievement, Department of Mathematics Texas State University

2003 Outstanding Graduate Student Award, College of Science Texas State University

○ RESEARCH, WORKING GROUP, AND RELATED EXPERIENCE

2024 – Enactivism in Mathematics Education Research (EMERGe) Affinity Group
AN INTERNATIONAL, MULTI-INSTITUTIONAL RESEARCH COLLABORATION

2019 – 2022 Fellow
CENTER FOR INQUIRY AND EQUITY

2006 – 2010 Research Assistant
THE UNIVERSITY OF TEXAS AT AUSTIN, Austin, TX
- SimCalc: Scaling Up Innovative Technology-Based Math

2009 – 2010 Research Assistant: Supplemental Course Instruction
THE UNIVERSITY OF TEXAS AT AUSTIN, Austin, TX
- The College of Natural Sciences Academic Community Program's Math Readiness Initiative

2009 – 2010 Site Support: UTeach Replication
THE UTEACH INSTITUTE at *THE UNIVERSITY OF TEXAS AT AUSTIN,* Austin, TX
- Responsible for the development of Course Content Review Materials for the Knowing and Learning in Mathematics and Science course.

2006 – 2009 *DIGITAL SPACES WORKING GROUP*
- Distributed Biography Project

2005 – 2008 Models and Modeling Working Group
THE UNIVERSITY OF TEXAS AT AUSTIN, Austin, TX
- Development and implementation of Model-Eliciting Activities (MEAs)

○ SELECTED TEACHING EXPERIENCE

- Montclair State University
  - MATH 111: Applied Pre-Calculus
  - MTHM 201 & 302: Mathematics in Elementary Schools I & II
  - MTHM 505: Number & Operations in the Middle Grades
  - MTHM 506: Algebra & Algebraic Thinking in the Middle Grades
  - MTHM 511: Proportional Reasoning in the Middle Grades

  - MATH 271: Selected Topics in Modern Mathematics (from a Learning Perspective)
  - MATH 375: History of Mathematics
  - MATH 574: Problem Solving and Problem Posing in Secondary Mathematics
  - MATH 575: Number Theory
  - MATH 575, SASE 560: Critical Mathematical Inquiry
  - MATH 577: Mathematics Education in the Elementary School
  - MATH 744: Enactive Phenomenology
  - MATH 746: Designing for Mathematical Experience
  - MATH 815: Theories of Learning in Mathematics Education
  - MATH 825: Research in Mathematics Education
  - MATH 830: Academic Writing Seminar; Experiments in Scholarly Inquiry
  - TLRN 523: Understanding Community Cultural Wealth in the Service of Urban Teaching: Elementary Mathematics for Critical Inquiry
  - TLRN 526: Transformative Teaching Praxis in the Service of Urban Schools: Elementary Mathematics for Critical Inquiry
- University of the Virgin Islands
  - MATH 511: Learning Theory for Mathematics Teachers
- The University of Texas at Austin
  - EDC 365: Knowing and Learning in Mathematics and Science

o SERVING THE PROFESSION AND THE COMMUNITY

2023 – Editorial Board, *Digital Experiences in Mathematics Education*
Snapshots Editor

2022 – Editorial Board, *Contemporary Issues in Technology and Teacher Education*
Review Editor for *Objects to Think With*

2021 – Community Reviewer, *Frontiers in Education:* STEM Education

2020 – Editorial Board, *Journal of Mathematical Behavior*

Present Referee for the journals *Journal of Research in Mathematics Education; Journal of the Learning Sciences; Journal of Mathematical Behavior*; *Mathematical Thinking and Learning; Journal of Humanistic Mathematics; PRIMUS; LASER; Investigations in Mathematics Learning.* Proposal reviewer for *Teachers College Press.*

2016 – 2020 Associate Editor, *Journal of Mathematical Behavior*

2016 – 2017 Grant Writer and Administrator, FHAK 2.0 Academy, Newark, NJ
Fall 2016: Secured $5,000 in funding from the Victoria Foundation
Spring 2017: Secured $500 in funding from Investors Bank.

2014 – 2017 Member of the Board of Advisors, South Mountain Co-op
South Mountain Co-op is a democratic free school in Montclair, NJ.

2013 – 2018 Co-Founder and Facilitator of The Good Times Math Gang
"Love Math? We get it. Hate Math? It's not your fault." The GTMG was an after-school experience for students in grades 3 – 8.

2013 – 2014 *Inquiry-Based Learning: Teaching and Learning through Inquisitiveness, Playful Practice, and Curiosity*. Co-facilitator of Henry County Public Schools' Summer Mathematics Institute for Teachers. Sponsored by The Harvest Foundation of Virginia.

2012 – 2014 Mathematics Curriculum Coordinator
Junior University @ The University of the Virgin Islands
Development of curriculum and social justice activities for this summer program for seventh-grade boys in the St. Thomas-St. John School District.

o PROFESSIONAL MEMBERSHIPS

American Educational Research Association (AERA)
Association of Mathematics Teacher Educators (AMTE)
National Council of Teachers of Mathematics (NCTM)
Psychology of Mathematics Education ~ North American Chapter (PME-NA)
TODOS: Mathematics for ALL