

Steven Greenstein, PhD

greensteins@montclair.edu

Associate 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

- 2017 – Present Associate Professor
Doctoral Program Director – Mathematics Education (2019 – present)
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

○ **EDITED JOURNAL ISSUES**

Greenstein, S. & O’Meara, J. “Phenomenologies of Mathematics Teaching and Learning” [Special Issue]. *New Jersey Mathematics Teacher*. (in preparation).

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 PUBLICATIONS

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

Yu, K. & **Greenstein, S.** (to appear). 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*.

Greenstein, S., Looney, B., Kerr, I., Yu, K., Olson, E., & Pomponio, E. (accepted). *Teaching for Deep Creativity through Qualitative Geometry: The Case of Opal, Age 5*. Paper to be presented at the 46th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Cleveland, OH.

Yu, K. & **Greenstein, S.** (2024, February). *Case Studies of Undergraduate Students' Agentic 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., 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. & 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.

Gantt, A., Paoletti, T., & **Greenstein, S.** (2022) "This One is That": A Semiotic Lens on Quantitative Reasoning. 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/pmna.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/pmna.44.2022>

York, T., **Greenstein, S.**, & Akuom, D. (2022) *Embodying Covariation Through Collaborative Instrumentation*. 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/pmna.44.2022>

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

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>

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 Intervoven 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, Su San. (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.

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

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

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.

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>

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. (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.

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.

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.

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

- 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**

Olson, E., **Greenstein, S.**, & Kerr, I. (accepted). *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. Cleveland, OH.

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.

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 Eleventh 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.

○ **GRANT ACTIVITY**

- | | |
|-------------|---|
| 2022 – 2023 | Bristol Myers Squibb Foundation Grant
<i>Convenings on Qualitative Creativity Education: Interdisciplinary Approaches to Enabling Young Children to Become More Fully Creative Thinkers, Makers, and Doers</i>
\$23,000 |
| 2022 – 2023 | Summer Grant Proposal Development Award, Montclair State University
<i>Nurturing Creativity and Innovation through Qualitative Mathematics</i>
\$4,000 |
| 2021 – 2024 | Senior Personnel
<i>MRI: Acquisition of a Multimodal Collaborative Robot System (MCROS) to Support Cross-Disciplinary Human-Centered Research and Education at Montclair State University</i>
NSF: Computer and Network Systems (CNS)
\$289,737 |
| 2021 – 2026 | Collaborator
<i>Quand et comment utiliser du matériel de manipulation en mathématiques au primaire? Développement de pratiques favorisant le raisonnement mathématique [When and how to use manipulatives in elementary mathematics? Developing practices that promote mathematical reasoning]</i>
Social Sciences and Humanities Research Council of the Government of Canada:
Insight Grant
\$273,479 |
| 2018 – 2021 | Principal Investigator
<i>Preservice Elementary Teachers Making for Mathematical Learning</i>
NSF: Discovery Research PreK-12 Program (DRK-12)
\$422,195 |

- 2017 – 2023 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 *UVT'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

○ **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**

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.

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. (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.”

○ **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)

- 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

○ **RESEARCH, WORKING GROUP, AND RELATED EXPERIENCE**

- 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
 - 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 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

○ **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

○ **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 – Editorial Board, *Frontiers in Education*
Review Editor for STEM Education
- 2020 – Editorial Board, *Journal of Mathematical Behavior*
- Present Referee for the journals *Journal of Research in Mathematics Education*; *Journal of Mathematical Behavior*; *Mathematical Thinking and Learning*; *Journal of Humanistic Mathematics*; and PRIMUS. 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.

○ **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