

Eric Cordero-Siy

Boston University
Wheelock College of Education and Human Development [♣]
Teaching and Learning
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Education

- Ph.D. 2019 University of Georgia
Mathematics Education
Dissertation: Forms and Functions of Strip Diagrams and Double Number Lines in a Content Course for Prospective Middle School Teachers [♣]
Advisers: Andrew Izsák, Sybilla Beckmann, Jaime Diamond
- M.S. 2010 Ateneo de Manila University
Master of Science in Mathematics Education
- B.S.E. 2007 De La Salle University
Bachelor of Secondary Education, Major in Mathematics Education

Professional Experience

- 2022- Clinical Assistant Professor, Boston University
Boston, MA
- 2019-2022 Research Associate, University of Wisconsin-Madison
Madison, WI
- 2012-2019 Graduate Assistant, University of Georgia
Athens, GA
- 2008-2012 Mathematics Teacher, Ateneo de Manila
Metro Manila, Philippines

Research-oriented scholarship

I have published under two surnames: Siy and Cordero-Siy

Works in Preparation and Under Review

Lolkus, M., Cordero-Siy, E., & Harper, F. Gatekeeping in Mathematics for Social and Racial Justice: A Conversation Among Colleagues. Revise and resubmit for *Teaching for Excellence and Equity in Mathematics*.

Cordero-Siy, E., Lolkus, M., & Harper, F. Whiteness and Fear: Backlash to Mathematics Education Reforms. Under review for *Thresholds in Education*.

Cordero-Siy, E. & Gomez Marchant, C. N. (2022). You Will Not Take Us: A Counter-Story. Under review for *Journal for Theoretical & Marginal Mathematics Education*.

Journal Articles

Cordero-Siy, E. & Ghousseini, H. (2022). Multiple representations and supporting mathematical meaning. *Mathematics Teacher: Learning and Teaching Pre-K-12*, 115(6), 394–403. <https://doi.org/10.5951/MTLT.2021.0155>

Kavanagh, S.S., Resnick, A.F., Ghousseini, H., Gotwalt, E., Cordero-Siy, E., Kazemi, E., & Dutro, E. (2022). Breaking the fourth wall in collaborative research: Beyond the observer/performer binary in research on teacher learning and practice. *Cognition & Instruction*, 40(1), 126–147. <https://doi.org/10.1080/07370008.2021.2010209>

Cordero-Siy, E. (2021). Whose math is it anyways? Using the rules of improvisation in mathematics teaching. *New York State Mathematics Teachers' Journal*, 71(1), 27–31.

Kazemi, E., Ghousseini, H., Cordero-Siy, E., Prough, S., McVicar, E., & Resnick, A. F. (2021). Supporting teacher learning about argumentation through adaptive, school-based professional development. *ZDM Mathematics Education*, 53, 435–448. <http://dx.doi.org/10.1007/s11858-021-01242-5>

Book Chapters

Prough, S., Cordero-Siy, E. (2022). Seeing diversity in children's literature. In Koestler, C., Ward, J., Zavala, W., & Bartell, T (Eds). *Early Childhood Mathematics Lessons to Explore, Understand, and Respond to Social Injustice*. Corwin Publishing.

Tanck, H., Siy, E., Jones, S., & Gomez, C.N. (2020). Paralympics. In Berry, R., Conway, B., IV, Lawler, B. R., & Staley, J. W. (Eds.). *High School Mathematics Lessons to Explore, Understand, and Respond to Social Injustice*. Corwin Publishing. ♣

Jones, S., & Gomez, C.N., Tanck, H., Siy, E. (2020). Intersectionality and the wage gap. In Berry, R., Conway, B., IV, Lawler, B. R., & Staley, J. W. (Eds.). *High School Mathematics Lessons to Explore, Understand, and Respond to Social Injustice*. Corwin Publishing.

Gomez, C. N., & Siy, E. (2016). Problematizing gender: Learning to embrace uncertainty. In D. White, S. Crespo, & M. Civil (Eds.), *Cases for Teacher Educators: Facilitating Conversations about Inequities in Mathematics Classrooms* (pp. 85–94). Information Age Publishing (Association for Mathematics Teacher Educators- AMTE). ♣

Refereed Conference Proceedings

Cordero-Siy, E., Lolkus, M., & Harper, F. (2022). Whiteness in Fearmongering Towards Mathematics Education Reform. In *Proceedings of the 45th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Middle Tennessee State University.

Cordero-Siy, E., Prough, S., Alapala, B., & Ghouseini, H. (2021). Identifying and recontextualizing problems of practice in learning to facilitate discussions with argumentation. In *Proceedings of the 43rd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. PME-NA.

Cordero-Siy, E., Prough, S., McVicar, E., Ghouseini, H., Kazemi, E. (2021). "This is you. This is your family.": A case study on attending to mathematical language development. 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. 1912–1916). Cinvestav/AMIUTEM/PME-NA.

Cordero-Siy, E. (2021). Using strip diagrams to support prospective middle school teachers' explanations for fraction multiplication. 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. 1585–1589). Cinvestav/AMIUTEM/PME-NA.

Prough, S., Cordero-Siy, E., Ghouseini, H. (2021). Developing argumentation practices for teachers. 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. 1963–1964). Cinvestav/AMIUTEM/PME-NA.

Siy, E. (2019). Prospective middle school teachers use of double number lines in a content course. In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.), *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1319–1324). University of Missouri.

Siy, E. (2019). Creating a healthy and rigorous culture of research by revealing our work. In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.), *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 16–21). University of Missouri.

Siy, E., & Foster, J. (2019). Prospective secondary mathematics teachers proposed identities as enacted in imagined discussions. In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.), *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1353). University of Missouri.

Siy, E. (2018). Using strip diagrams to support explanations for keep-change-flip for fraction division. In Hodges, T.E., Roy, G. J., & Tyminski, A. M. (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 678–686). University of South Carolina & Clemson University.

Siy, E. (2018). From batches to parts: Prospective teachers' representations for proportional relationships. In Hodges, T.E., Roy, G. J., & Tyminski, A. M. (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 795–798). University of South Carolina & Clemson University.

Siy, E. (2015). Empowering local languages to create Filipino mathematical vocabulary. In Vistro-Yu, C. (Ed.). *In pursuit of quality mathematics education for all: Proceedings of the 7th ICMI-East Asia Regional Conference on Mathematics Education* (pp. 225–232). Philippine Council of Mathematics Teachers. ☞

Siy, E. (2011). The Role of Visualization in Problem Solving. In Acelajado, M.J., Francisco, F.F., Limjap, A.A., & Soto, C.S. (Eds.) *MATHTED 2011 Proceedings: An International Conference in Mathematics Education* (p. 55–63). MATHTED.

Other

Gomez Marchant, C.N., Cordero-Siy, E. (2022). Were We Supposed to Bring Flowers?: a Counter-story on Distancing and Disconnection While Assimilating. *AERA Division J Newsletter: The Pen, Special Issue*. ☞

Assistant, Mathematics Education Project, Manila, Philippines
 Framework for Philippine Mathematics Teacher Education. Manila: SEI & MATHTED. ☞
 Mathematics Framework for Philippine Basic Education. Manila: SEI & MATHTED. ☞

Research Activity

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| 2019-2022 | <p>Research Associate
 Advancing Teachers' Pedagogical Reasoning and Practices with Tools ☞ aka
 The Labs Project ☞
 PIs: Hala Ghouseini, Elizabeth Dutro, Sarah Kavanagh, Elham Kazemi
 JSMF funded grant focused on supporting teachers to enact argumentation practices in
 mathematics and literacy elementary classrooms</p> |
| 2015 to 2018 | <p>Research Team Member
 Investigating Proportional Relationships from Two Perspectives ☞
 PI: Andrew G. Izsák, Co-PIs: Sybilla Beckmann, Laine Bradshaw
 NSF REAL grant focused on examining how prospective middle and secondary teachers
 understand proportional relationships.</p> |
| 2012 to 2014 | <p>Research Assistant
 Characterizing Critical Aspects of Mathematics Classroom Discourse ☞
 PI: Jessica P. Bishop
 NSF CAREER grant focused on examining discursive constructs that characterize productive
 discourse in grades 5 through 7.</p> |
| Summer 2018 | <p>Research Assistant
 AiMS Modeling in Biology Project ☞
 PI: Daniel Capps, Jonathan Shemwell
 NSF DRK-12 grant focused on developing teachers' capacity to teach biology concepts using
 models and modeling.</p> |

Textbook researcher for the publication: Beckmann, S. (2018). *Mathematics for Elementary Teachers with Activities*, 5th Edition. Boston, MA: Pearson. ☞

Presentations

Conference Presentations

Cordero-Siy, E., Lolkus, M., & Harper, F. (2023). Fear as Whiteness in the Backlash to Mathematics Education Reform. Symposium paper presented as a part of “Framing Mathematics in Sociopolitical Public Discourse” at the annual meeting of the American Educational Research Association, Chicago, IL.

Cordero-Siy, E., Lolkus, M., & Harper, F. (2022). Whiteness in Fearmongering Towards Mathematics Education Reform. Brief Research report presented at the 45th Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Nashville, TN.

Cordero-Siy, E., Lolkus, M., & Harper, F. (2022). Gatekeeping in Social Justice Mathematics: What Counts and Who Decides? Discussion session conducted at the 26th Annual Conference of the Association of Mathematics Teacher Educators, Henderson, NV.

Cordero-Siy, E., Alapala, B. (2022). Problems of Practice in Learning to Facilitate Argumentation Based Discussions. Discussion session conducted at the 26th Annual Conference of the Association of Mathematics Teacher Educators, Henderson, NV.

Cordero-Siy, E., Prough, S., Alapala, B., & Ghouseini, H. (2021). Identifying and recontextualizing problems of practice in learning to facilitate discussions with argumentation. Research report presented at the 43rd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Philadelphia, PA.

Cordero-Siy, E., Prough, S., McVicar, E., Ghouseini, H., Kazemi, E. (2021). “This is you. This is your family.”: A case study on attending to mathematical language development. Brief research report presented at the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Mexico/virtual.

Cordero-Siy, E. (2021). Using strip diagrams to support prospective middle school teachers’ explanations for fraction multiplication. Brief research report presented at the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Mexico/virtual.

Prough, S., Cordero-Siy, E., Ghouseini, H. (2021). Developing argumentation practices for teachers. Poster presented at the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Mexico/virtual.

Cordero-Siy, E., Ghouseini, H., Kazemi, E., Prough, S., McVicar, E. (2021). Supporting Elementary Teachers’ Responsiveness around Facilitating Argumentation. Research report presented at the annual conference of the Association of Mathematics Teachers Educators, virtual.

Ghouseini, H., Prough, S., & Siy, E. (2021). Teachers’ Collaborative Sensemaking about Broadening Student Participation in Mathematics Discussions. Symposium paper presented at the annual meeting of the American Educational Research Association, Division C, virtual.

Cordero-Siy, E. (2021). Elementary Teachers Sensemaking Around Teaching Math for Social Justice in Adaptive Professional Development. Symposium paper presented at the annual meeting of the American Educational Research Association, Sig-RME, virtual.

Siy, E. (2020). Building classroom math talk communities together. Research report presented at the virtual Wisconsin Mathematics Council. [↗](#)

Siy, E. (2019). Prospective middle school teachers use of double number lines in a content course. Brief research report presented at the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education in St Louis, MO.

Siy, E. (2019). Creating a healthy and rigorous culture of research by revealing our work. Plenary presented at the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education in St Louis, MO. [↗](#)

Siy, E. & Foster, J. (2019). Prospective secondary mathematics teachers proposed identities as enacted in imagined discussions. Poster presented at the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education in St Louis, MO.

Siy, E. (2019). Using Strip Diagrams as a Practice in a Middle School Content Course. Research Report presented at the annual conference of the Association of Mathematics Teachers Educators, Orlando, FL.

Siy, E. (2019). Counting by “Ones” on a Double Number Line. Presented at the 2019 Annual Conference of Research Council on Mathematics, Charlotte, NC.

Siy, E. (2018). Using Strip Diagrams to Support Explanations for Keep-Change-Flip for Fraction Division. Research report presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Greenville, SC.

Siy, E. (2018). From Batches to Parts: Prospective Teachers' Representations for Proportional Relationships. Brief research report to be presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Greenville, SC.

Siy, E. (2018). Ethnography as a Method to Analyzing Math Class: The Case of Drawings. Presented at the Fourteenth International Congress of Qualitative Inquiry, University of Illinois at Urbana-Champaign.

Siy, E. (2018). Strip Diagrams: Drawing as Mathematics. Poster presented at the 2018 College of Education Research Conference, University of Georgia, Athens, GA.

Siy, E. (2017). Using Definitions and Representations to Reason about Fraction Multiplication and Division. Presented at the 2018 Georgia Mathematics Conference, Eatonton, GA.

Siy, E. (2017). Improvisation for Teacher Development. Presented at the 2018 Innovation in Teaching Conference, Athens, GA.

Siy, E. (2017). The Evolution of Representations and Talk in a Middle School Content Course. Poster presented at the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Indianapolis, IN.

Siy, E. (2017). The Development and Negotiation of Sociomathematical Norms for Drawings. Brief Research Report presented at the annual conference of the Association of Mathematics Teachers Educators,, Orlando, FL.

Siy, E. (2017). Mathematics and Science as Genderless, Colorless, Acultural, Apolitical—The Safe Space in Education? Presented at the 2017 Connect Conference, University of Georgia, Athens, GA.

Siy, E. (2015). Empowering Local Languages to Create Filipino Mathematical Vocabulary. Presented at the 7th ICMI-East Asia Regional Conference on Mathematics Education, Cebu City, Philippines.

Siy, E., Gomez, C.N. (2015). Two Instruments to Discuss the Influence of Gender in the Mathematics Classroom. Presented at the presented at the annual conference of the Association of Mathematics Teachers Educators, Orlando, FL.

Siy, E., Provido, E. (2011). Teaching and Assessing Using Concepts Maps in Mathematics. Presented at the MATHTED International Conference on Mathematics Education. Columban College, Olongapo, Philippines.

Siy, E., Tulao, M.A. (2009). Mathematical Modeling in the Mathematics Classroom. Presented at the MATHTED International Conference on Mathematics Education. Palawan State University, Palawan, Philippines.

Organized Symposia

“Framing Mathematics in Sociopolitical Public Discourse” at the 2023 American Educational Research Association, SIG 184: Socio-Political Issues in Mathematics and Science Education.

Invited Talks & Panels

Sipnayan: Saan ang tapang mo? Invited speaker at Ateneo de Manila University, Manila, Philippines on April 19, 2023.

“Navigating the Job Market” Invited panelist at the 2022 AMTE Virtual Institute: Unpacking the Hidden Curriculum of Being a Mathematics Teacher Educator, October 19, 2022.

“Mentoring Early Faculty of Color” Invited panelist at the 26th Annual Conference of the Association of Mathematics Teacher Educators, Henderson, NV.

“Aprendiendo a dibujar y dibujando para enseñar: Reflexiones para el aprendizaje de los docentes” Colloquium at Centro de Modelamiento Matemático, Universidad de Chile, September 1, 2020. ^o

“Breaches and Bridges in Mathematics Education: Finding Common Ground” Colloquium at California State University, Chico, October 27, 2017.

“Power of language-in-use: Leveraging discourse in the mathematics classroom.” Colloquium at Ateneo de Manila, Manila, Philippines, May 15, 2014.

Professional Development

Siy, E., Tulao, M. A. (2010) Algebra and Algebraic Thinking. Presented at the Mathematical Pedagogical Knowledge Training Workshop for Mathematics Teachers, Ateneo de Manila, Quezon City, Philippines.

Siy, E., Canonigo, A. (2010). The Concept of Finite Differences and its Use in the Mathematics Classroom. Presented at the Mathematical Enhancements, Recreations, and Innovations Toolkit for Teacher. Department of Education Center, Lahug, Cebu City, Philippines and Baras, Rizal.

Other Media

“Do the Math.” Miss Information: A Trivia Podcast. [Ⓔ]

“The Only Subject That Counts.” Miss Information: A Trivia Podcast. [Ⓔ]

Teaching Math Podcast Summer Book Club on High School Mathematics Lessons to Explore, Understand, and Respond to Social Injustice. [Ⓔ]

Teaching-oriented scholarship

Boston University

Wheelock College of Education and Human Development	SED ME 851 [Ⓔ] (Fall 2022, n = 8) SED ME 503 [Ⓔ]
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College of Arts and Sciences	CAS MA 107 [Ⓔ] (Fall 2022, n = 11) CAS MA 108 [Ⓔ]
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University of Georgia

EMAT3400: Children’s Mathematical Learning (Spring 2015-Spring 2018)

EMAT8990: Academic Job Market (Fall 2018)

Student Teacher Supervision (Spring 2017, Fall 2018)

Other

Academic Coordinator for Duke Talent Identification Program (Summer 2017)

I supervised twenty-two pairs of instructional pairs who taught a variety courses to 8th–10th grade students. Supervision of the pairs included classroom observation and lesson plan development.

BU D&I STARS Program (2022-2023)

I participated as a cohort member of a university-wide program to support underrepresented racial and ethnic groups who are within their first two years of an academic teaching position. STARS participants are nominated each year by college deans.

Service to the Profession

Journal Reviewer	The Mathematics Educator The Asia-Pacific Education Researcher
Associate Editor	The Mathematics Educator* Fall 2016, Spring 2017, Fall 2017, Spring 2018
Proposal Reviewer	National Council of Teachers of Mathematics Research Conference Association of Mathematics Teacher Educators Conference
Professional Memberships	National Council of Teachers of Mathematics Association of Mathematics Teacher Educators Mathematics Education Student Association
Leadership Positions	President (2013), Co-colloquium Chair (2015) Mathematics Education Student Association at the University of Georgia

University Service

2019-2022	DEI change team, Wisconsin Center for Education Research [Ⓐ] University of Wisconsin-Madison The purpose of the change team is to identify DEI barriers in the organization, to recommend and advocate for improvements in alignment with WCER values, and to serve as an advisory body for WCER leadership.
2021-2022	All-Staff Advisory Council, Wisconsin Center for Education Research [Ⓐ] University of Wisconsin-Madison The council works to build intellectual community, enrich professional development, link staff with similar interests, and enhance communication at WCER. Specifically, the long-term goals developed by the committee including intellectual and social community, communication, and advisory.
2014-2019	Facilitator, Safe Space Program, LGBT Resource Center [Ⓐ] University of Georgia Facilitators conducted and created a university-wide training for faculty, staff, and students who are interested in learning about gender and sexual identity, homophobia, heterosexism, and to provide support LGBT+ community.