

# *Eric Siy*

## Curriculum Vitae

University of Wisconsin-Madison  
 Wisconsin Center for Education Research\*  
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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
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*

2019-Present	Research Associate, Wisconsin Center for Education Research for the project Advancing Teachers' Pedagogical Reasoning and Practices with Tools* funded by the James S. McDonnell Foundation*
2012-2019	Research Assistant & Instructor of Record, University of Georgia Athens, GA
2008-2011	Mathematics Instructor, Ateneo de Manila Metro Manila, Philippines

## *Publications*

### **Works in Preparation and Under Review**

Kazemi, E., Ghouseini, H., **Siy, E.**, Prough, S., McVicar, E., Resnick, A.F. (under review).  
 Supporting teacher learning about argumentation through adaptive, school-  
 based professional development submitted to ZDM.

### Book Chapters & Contributions

- 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). Charlotte, NC: Information Age Publishing (Association for Mathematics Teacher Educators- AMTE).\*
- Tanck, H., **Siy, E.**, Jones, S., & Gomez, C.N. (in press). Geometry and Social Justice: Using the Paralympics and Transformations to Talk About Ableism. 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*. Thousand Oaks, CA: Corwin Publishing.\*
- Jones, S., & Gomez, C.N., Tanck, H., **Siy, E.** (in press). 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*. Thousand Oaks, CA: Corwin Publishing.\*

### Conference Proceedings

- 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). St Louis, MO: University of Missouri.
- 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). St Louis, MO: 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* (p. 1353). St Louis, MO: University of Missouri.
- Siy, E.** (2018). *Using strip diagrams to support explanations for keep-change-flip for fraction division*. In T. E. Hodges, G. J. Roy, & A. M. Tyminski (Eds.), *Proceedings of the fortieth annual meeting for the North American Chapter for the Psychology of Mathematics Education* (pp. 679–685). Greenville, SC.
- Siy, E.** (2018). *From batches to parts: Prospective teachers' representations for proportional relationships*. In T. E. Hodges, G. J. Roy, & A. M. Tyminski (Eds.), *Proceedings of the fortieth annual meeting for the North American Chapter for the Psychology of Mathematics Education* (pp. 795–798). Greenville, SC.

- 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). Cebu City, May 11-15. Quezon City: Philippine Council of Mathematics Teachers (MATHTED), Inc.\*
- 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). Manila, Philippines, MATHTED.

### Other

- Assistant, Mathematics Education Project, Manila, Philippines  
 MATHTED & SEI. (2010). *Framework for Philippine Mathematics Teacher Education*.  
 Manila: SEI & MATHTED.\*
- MATHTED & SEI. (2010). *Mathematics Framework for Philippine Basic Education*.  
 Manila: SEI & MATHTED.\*

## Research Activity

### Research Assistant

- 2012 to 2014      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.

### Research Team Member

- Spring 2019      Using Collective Argumentation to Develop Teaching Practices Integrating Coding Within the Science and Math Curriculum\*  
 PI: Timothy Foutz  
 NSF STEM + Computing grant focused on supporting elementary teachers to extend programming knowledge to pedagogy.
- Summer 2018      AiMS Modeling in Biology Project\*  
 PI: Daniel Capps  
 NSF DRK-12 grant focused on developing teachers' capacity to teach biology concepts using models and modeling.
- 2015 to 2018      Investigating Proportional Relationships from Two Perspectives\*  
 PI: Andrew G. Izsák  
 NSF REAL grant focused on examining how prospective middle and secondary teachers understand proportional relationships.

### Textbook Researcher

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

### *Scholarly Presentations*

#### Conference Presentations

- Siy, E.,** Jones, K., Miller, E., Prough, S., Valentine, C. (2020). *Building classroom math talk communities together*. To be presented at the fifty-second Wisconsin Mathematics Council in Green Lake, Wisconsin.
- 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, St Louis, MO.
- 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, 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, St Louis, MO.
- Siy, E.** (2019). *Using Strip Diagrams as a Practice in a Middle School Content Course*. Presented at the 2019 Annual Meeting of the Association of Mathematics Teachers (AMTE) 23rd Annual Conference, 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 fortieth 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 presented at the fortieth 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*. Presented at the 2017 Annual Meeting of the Association of Mathematics Teachers (AMTE) 21st Annual Conference, 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 2015 Annual Meeting of the Association of Mathematics Teachers (AMTE) Nineteenth Annual Conference, 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.

### Professional Development Workshops

- 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 ECOTECH Center, Lahug, Cebu City, Philippines and Baras, Rizal.

**Siy, E.** (2010) The Assessment of Critical Thinking in Mathematics. CAMPMATH, Ateneo de Manila.

### **Invited Talks**

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

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

## *Teaching & Supervision*

### **University of Georgia**

#### EMAT3400: Children’s Mathematical Learning

Spring 2015-Spring 2018: Instructor of Record for the first of two mathematics education methods courses for prospective elementary school teachers including a field experience at a local school.

Fall 2014: Teaching Assistant for Jaime Diamond

#### EMAT8990: Academic Job Market

Fall 2018: Seminar leader on navigating the academic job market including writing application documents, interviewing, and presenting research.

### **Student Teacher Supervision**

Spring 2017, Fall 2018: Supervised prospective secondary mathematics teachers in their capstone field placement.

### **Internship Programs**

This is a list of courses where I participated as an intern to plan and enact lessons. I am prepared to teach lessons with similar content.

#### Secondary Grades Education Courses

(interned with Kevin Moore, Brenda King, Patricia Wagner, Spring 2014; Patricia Wilson, Fall 2014; Hyejin Park, Spring 2017)

Content courses focused on quantitative and covariational reasoning with topics including angles, trigonometry, functions, rate of change

Methods courses focused on student learning, whole-class instruction, and equity.

#### Middle Grades Education Courses

(interned with Sybilla Beckmann, Spring 2015-Spring 2017)

Content courses focused on number, operations, and multiplicative reasoning with topics including fractions, multiplication, division, fraction operations, ratio, proportions, statistics, and probability.

#### Elementary Grades Education Courses

(interned with Jaime Diamond, Spring 2016)

Content courses focused on number, operations, measurement, and geometry.

Methods courses focused on whole-class instruction, equity, and assessment.

### **Ateneo de Manila**

Math classes taught: Algebra Support (2008-2010) for students who need additional support prior to taking college level mathematics, Pre-Calculus (2008-2010), Math Appreciation (Spring 2009), Applied Calculus for Business (2008-2010), Calculus for Computer Science (Spring 2010)

### **Other**

#### **Academic Coordinator for Duke Talent Identification Program (Summer 2017)**

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

### *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    Facilitator, Safe Space Program, LGBT Resource Center,  
University of Georgia  
I helped facilitate and create a university-wide forum for faculty, staff, and students who are interested in learning about gender and sexual identity, homophobia, heterosexism, and to provide support LGBT+ community.\*