

# Halil Ibrahim Tasova

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## EDUCATION

- 2020 **Ph.D., Mathematics Education**, University of Georgia, Athens, GA  
(expected) Dissertation: *Developing Middle School Students' Meanings for Constructing Graphs Through Reasoning Quantitatively*  
Committee members: Kevin C. Moore (chair), Amy Ellis, Sybilla Beckmann
- M.A., Mathematics**, University of Georgia, Athens, GA
- 2011 **M.S., Mathematics Education**, Marmara University, Istanbul, Turkey  
Thesis: Investigating thinking and visualization skills of pre-service mathematics teachers in modeling activities and performance  
Committee members: Ali Delice (chair), Emin Aydin, Esra Bukova-Guzel
- 2008 **B.S., Secondary Mathematics Education**, Marmara University, Istanbul, Turkey

## RESEARCH INTEREST

Quantitative and Covariational reasoning, Students' interpretation and construction of graph, Teaching experiment methodology

## PROFESSIONAL POSITIONS

- 2016–present Graduate Assistant, University of Georgia, Athens, GA
- 2013–2014 Project Member, The Scientific and Technological Research Council of Turkey (TUBITAK), Ankara, Turkey
- 2008–2013 High School Mathematics Teacher, Istanbul, Turkey
- 2004–2008 Student Assistant (part-time), Marmara University, Istanbul, Turkey

## RESEARCH EXPERIENCE

- 2019–present Graduate Research Assistant  
Generalization Across Multiple Mathematical Areas (GAMMA-CAT), National Science Foundation funded project.  
PIs: Amy Ellis (University of Georgia), Elise Lockwood (Oregon State University), Erik Tillema (Indiana University /IUPUI), Kevin C. Moore (University of Georgia).  
University of Georgia, Athens, GA

- 2016–present Graduate Research Assistant  
 Advancing Secondary Mathematics Teachers' Quantitative Reasoning, National Science Foundation funded project. PI: Kevin C. Moore  
 University of Georgia, Athens, GA
- 2017–2018 Graduate Research Assistant  
 Generalization Across Multiple Mathematical Areas (GAMMA), National Science Foundation funded project.  
 PIs: Amy Ellis (University of Georgia), Elise Lockwood (Oregon State University), Erik Tillema (Indiana University /IUPUI), Kevin C. Moore (University of Georgia).  
 University of Georgia, Athens, GA
- 2015–2016 Research Team Member  
 Investigating Proportional Relationships from Two Perspectives (InPREP2), National Science Foundation funded project  
 PIs: Andrew G. Izsák, Sybilla Beckmann, and Laine Bradshaw,  
 University of Georgia, Athens, GA
- 2010–2011 Principle Investigator  
 Investigating thinking structures and visualization skills of pre-service mathematics teachers in modeling activities and performance, Marmara University Science and Research Council funded graduate project (€6000)  
 Marmara University, Istanbul, Turkey

## **TEACHING EXPERIENCE**

- Instructor of Record, University of Georgia,  
 Precalculus (Fall 2019)
- Teaching Assistant, University of Georgia,  
 Teaching Secondary School Mathematics I (Spring 2019)  
 Field Experience in Secondary School Mathematics I (Spring 2019)  
 Connections in Secondary Mathematics I (Spring 2017, Spring 2018, Spring 2019)  
*The Mathematics Educator* Seminar (Co-instructor, Summer 2017, Fall 2019)
- Guest Lecturer, University of Georgia (Spring 2019)  
 Arithmetic for Elementary School Teachers
- Professional Development Facilitator, The University System of Georgia,  
 STEM initiative, Lesson Study in Clarke County School District (Fall 2016, Spring 2017)
- Mathematics Teacher, Istanbul, Turkey (Fall 2008 – Spring 2013)  
 Pre-algebra, Algebra I, Algebra II, Geometry  
 Supervised after school Math Club, which included weekend events  
 Served as an advisor to a small group of students who were competing in Math Olympiads

## **PUBLICATIONS**

### **Peer Reviewed Journal Articles**

1. Lee, H., Moore, K. C., & Tasova, H. I. (2019). Reasoning within quantitative frames of reference: The case of Lydia. *The Journal of Mathematical Behavior*, 53, 81–95.
2. Tasova, H. I., & Delice, A. (2012). An analysis of pre-service mathematics teachers' performance in modelling tasks in terms of spatial visualisation ability. *Research In Mathematics Education*, 14(3), 297–298. doi:10.1080/14794802.2012.734994
3. Delice, A., & Tasova, H. I. (2012). An investigation of mathematics teacher trainees' modelling skills based on their thinking structures. *The Journal of SAU Education Faculty*, 24, 67–88.
4. Delice A., & Tasova, H. I. (2011). Influence of individual and group work on the process and the performance of modeling activities. *Marmara University Atatürk Education Faculty Journal of Educational Sciences*, 34(34), 71–97.

### **Peer Reviewed Proceedings**

5. Moore, K. C., Liang, B., Tasova, H. I., & Stevens, I. E. (in press). Abstracted quantitative structures. PMENA 2019
6. Tasova, H. I., Liang, B., & Moore, K. C. (2019). Generalizing actions of forming: Identifying patterns and relationships between quantities. In A. Weinberg, D. Moore-Russo, H. Soto, & M. Wawro (Eds.), *Proceedings of the Twenty-Second Annual Conference on Research in Undergraduate Mathematics Education* (pp. 602–610). Oklahoma City, OK.
7. Tasova, H. I., & Moore, K. M. (2018). Generalization of an invariant relationship between two “quantities.” In T.E. Hodges, G. J. Roy, & A. M. Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 588–595). Greenville, SC: Hoosier Association of Mathematics Teacher Educators.
8. Ellis, A., Tasova, H. I., & Singleton, B. (2018). How quantitative reasoning can support graph understanding in Algebra. In T.E. Hodges, G. J. Roy, & A. M. Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 195–198). Greenville, SC: Hoosier Association of Mathematics Teacher Educators.
9. Liang, B., Stevens, I. E., Tasova, H. I., & Moore, K. C. (2018). Magnitude reasoning: Characterizing a pre-calculus student's quantitative comparison between covarying magnitudes. In T.E. Hodges, G. J. Roy, & A. M. Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 608–611). Greenville, SC: Hoosier Association of Mathematics Teacher Educators.
10. Ellis, A., Ely, R., Singleton, B. & Tasova, H. I. (2018). Scaling continuous covariation: Supporting middle school students' algebraic reasoning. In T.E. Hodges, G. J. Roy, & A. M.

- Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 147–154). Greenville, SC: Hoosier Association of Mathematics Teacher Educators.
11. Tasova, H. I., Stevens, I. E., & Moore, K. C. (2018). A framework for analyzing written curriculum from a shape-thinking and (co)variational reasoning perspective. In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro & S. Brown (Eds.), *Proceedings of the Twenty-First Annual Conference on Research in Undergraduate Mathematics Education* (pp. 1527–1533). San Diego, CA.
  12. Tasova, H. I., Koklu, O., Arican, M., & Olmez, I. B. (2017). *Student and school level correlates of mathematics performance in United States regarding PISA 2015*. In E. Galindo & J. Newton (Eds.), *Proceedings of the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1107–1110). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.
  13. Lee, H. Y., Tasova, H. I., & Moore, K. C. (2017). Reasoning within quantitative frames of reference and graphing: The case of Lydia. In E. Galindo & J. Newton (Eds.), *Proceedings of the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 753–756). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.
  14. Tasova, H. I., & Delice A. (2012). Influence of thinking structures on process of modelling activities. Paper presented at the annual meeting of 10. Ulusal Fen Bilimleri ve Matematik Egitimi Kongresi, Nigde, Turkey. Retrieved from [http://kongre.nigde.edu.tr/xufbmek/dosyalar/tam\\_metin/pdf/2422-30\\_05\\_2012-17\\_24\\_31.pdf](http://kongre.nigde.edu.tr/xufbmek/dosyalar/tam_metin/pdf/2422-30_05_2012-17_24_31.pdf)
  15. Tasova, H. I., & Delice, A. (2010). An analysis of pre-service mathematics teachers' performance in modelling tasks in terms of Krutetskii thinking structures. Paper presented at the annual meeting of 9. Ulusal Fen Bilimleri ve Matematik Egitimi Kongresi, Izmir, Turkey.
  16. Tasova, H. I., & Delice, A. (2011). An analysis of pre-service mathematics teachers' performance in modelling tasks in terms of spatial visualization ability. In C. Smith (Ed.), *Proceedings of the British Society for Research into Learning Mathematics* (pp. 150–155). Oxford: BSRLM.
  17. Basturk, S., Tasova, H. I., & Seckin, G. (2008). Investigating teacher's practices according to level of students. In O. Demirel & A. M. Sunbul (Eds.), *Further Education in the Balkan Countries*, 9(2) p. 859–865.

## Abstracts

18. Tasova, H. I., Liang, B., Stevens, I. E., & Moore, K. C. (2019). Characterizing two undergraduate students' quantitative comparisons of covarying quantities' magnitudes. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 40(1), 421. Available at [http://jointmathematicsmeetings.org/amsmtgs/2217\\_abstracts/1145-j5-1210.pdf](http://jointmathematicsmeetings.org/amsmtgs/2217_abstracts/1145-j5-1210.pdf)
19. Moore, K. C., Stevens, I. E., Liang, B., & Tasova, H. I. (2019). Concept construction and abstracted quantitative structures. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, &

S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 40(1), 421. Available at [http://jointmathematicsmeetings.org/amsmtgs/2217\\_abstracts/1145-j5-1564.pdf](http://jointmathematicsmeetings.org/amsmtgs/2217_abstracts/1145-j5-1564.pdf)

20. Tasova, H. I. & Moore, K. C. (2018). Justification of an invariant relationship between two quantities: Coordinating quantities vs. steepness of tangent lines. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 39(1), 462. Available at [http://jointmathematicsmeetings.org/amsmtgs/2197\\_abstracts/1135-j5-1148.pdf](http://jointmathematicsmeetings.org/amsmtgs/2197_abstracts/1135-j5-1148.pdf)

### **Manuscript Under Review**

21. Ellis, A., Ely, R., Singleton, B. & Tasova, H. I. (submitted). Scaling continuous covariation. *Educational Studies in Mathematics*.

### **Manuscripts in Preparation**

22. Tasova, H. I., Stevens, I. E., & Moore, K. C. (in preparation). Analyzing Calculus textbooks from a shape-thinking and (co)variational reasoning perspective.
23. Moore, K. C., Stevens, I. E., Liang, B., Tasova, H., Castillo-Garsow, C. (in preparation) All-encompassing meaning for graphs.
24. Tasova, H. I., & Moore, K. M. (in preparation). Generalization of an invariant relationship between two “quantities.”
25. Tasova, H. I., Liang, B., & Moore, K. C. (in preparation). Generalizing actions of forming: Identifying patterns and relationships between quantities

### **Published Curricula**

26. Moore, K. C., Liang, B., Tasova, H. I., Stevens, I. E. (2019). *The Advancing Reasoning Covariationally (ARC) curriculum*.  
<https://sites.google.com/site/advancingreasoning/resources/arc-curriculum?authuser=0>
27. Erbas, A. K., Cetinkaya, B., Guven, B., Karatas, I., & Cinkır, Z. (Eds.). (2013). *Mathematics for Grade 9, 1<sup>st</sup> Textbook*. Ankara, Turkey: National Ministry of Education Publications [Listed as a contributing author].  
(*This textbook was a collaborative work by math educators. I was a contributing author.*)
28. Erbas, A. K., Cetinkaya, B., Guven, B., Karatas, I., & Cinkır, Z. (Eds.). (2013). *Mathematics for Grade 9, 2<sup>nd</sup> Textbook*. Ankara, Turkey: National Ministry of Education Publications [Listed as a contributing author].
29. Erbas, A. K., Cetinkaya, B., Guven, B., Karatas, I., & Cinkır, Z. (Eds.). (2013). *Mathematics for Grade 9, 3<sup>rd</sup> Textbook*. Ankara, Turkey: National Ministry of Education Publications [Listed as a contributing author].

### **Other Publications**

30. Tasova, H. I. (2009). 3D Geometry is easier now. *Bilgi Cagi*, 63, 42–43.

## REFEREED PRESENTATIONS (\*denotes the presenter)

### International

- \*Tasova, H. I., & Moore, K. M. (2018, November). *Generalization of an invariant relationship between two "quantities."* Paper presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.
- Ellis, A., \*Tasova, H. I., & Singleton, B. (2018, November). *How quantitative reasoning can support graph understanding in Algebra.* Paper presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.
- \*Liang, B., Stevens, I. E., Tasova, H. I., & Moore, K. C. (2018, November). *Magnitude reasoning: Characterizing a pre-calculus student's quantitative comparison between covarying magnitudes.* Paper presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.
- \*Ellis, A., \*Ely, R., Singleton, B. & Tasova, H. I. (2018, November). *Scaling continuous covariation: Supporting middle school students' algebraic reasoning.* Paper presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.
- \*Tasova, H. I., Koklu, O., Arican, M., & Olmez, I. B. (2017, October). *Student and school level correlates of mathematics performance in United States regarding PISA 2015.* Paper presented at the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, IN.
- \*Lee, H. Y., \*Tasova, H. I., & Moore, K. C. (2017, October). *Reasoning within quantitative frames of reference and graphing: The case of Lydia.* Paper presented at the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, IN.
- \*Tasova, H. I., & Delice, A. (2011, November). *An analysis of pre-service mathematics teachers' performance in modelling tasks in terms of spatial visualization ability.* Paper presented at the British Society for Research into Learning Mathematics Conference, Oxford University.
- Basturk, S., \*Tasova, H. I., & Seckin, G. (2008, October). *Investigating teacher's practices according to level of students.* Paper presented at the annual meeting of 11<sup>th</sup> International Conference on Further Education in the Balkan Countries, Konya, Turkey. Abstract retrieved from [http://www.pegem.net/akademi/kongrebildiri\\_detay.aspx?id=48412](http://www.pegem.net/akademi/kongrebildiri_detay.aspx?id=48412)

## National

- \*Tasova, H. I., Liang, B., & Moore, K. C. (2019, February). *Generalizing actions of forming: Identifying patterns and relationships between quantities*. Paper presented at the 22th Annual Conference on Research in Undergraduate Mathematics Education.
- \*Tasova, H. I., Lee, H. Y., & Moore, K. C. (2019, February). *Supporting quantitative reasoning through establishing frames of reference*. Presentation at Twenty-Third Annual Conference of the Association of Mathematics Teacher Educators. Orlando, FL.
- \*Tasova, H. I., Liang, B., Stevens, I. E., & Moore, K. C. (2019, January). *Characterizing two undergraduate students' quantitative comparisons of covarying quantities' magnitudes*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Baltimore, MD.
- \*Moore, K. C., Stevens, I. E., Liang, B., & Tasova, H. I. (2019, January). *Concept construction and abstracted quantitative structures*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Baltimore, MD.
- \*Tasova, H. I., \*Stevens, I. E., & Moore, K. C. (2018, February). *A framework for analyzing written curriculum from a shape-thinking and (co)variational reasoning perspective*. Paper presented at the Twenty-First Annual Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education (SIGMAA on RUME) Conference. San Diego, CA.
- \*Tasova, H. I. & Moore, K. C. (2018, January). *Justification of an invariant relationship between two quantities: Coordinating quantities vs. steepness of tangent lines*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. San Diego, CA.
- \*Tasova, H. I., & Delice A. (2012, September). *An investigation of mathematics teacher trainees' process of modelling activities based on their thinking structures*. Abstract presented at the annual meeting of 21th National Education Science Conference, Istanbul, Turkey. Abstract retrieved from [http://www.pegem.net/akademi/kongrebildiri\\_detay.aspx?id=136543](http://www.pegem.net/akademi/kongrebildiri_detay.aspx?id=136543)
- \*Tasova, H. I., & Basturk, S. (2009). *The implementation and evaluation of a learning environment designed with Cabri 3D geometry software*. Paper presented at the annual meeting of Egitimde Iyi Ornekler Konferansi, Istanbul, Turkey.

## Regional/Local

- \*Tasova, H. I. & \*Stevens, I. E. (2018, October). *A special content knowledge task on functions and rate of change*. Abstract presented at the 59th Annual Georgia Mathematics Conference. Eatonton, GA.

- \*Tasova, H. I. (2018, October). *What is essential to the concept of rate of change in dynamic situations and graphs?* Abstract presented at the 12th Annual Georgia Association of Mathematics Teacher Educators. Eatonton, GA.
- \*Tasova, H. I. (2018, May). *Making Sense of Rate of Change in Dynamic Situations and Graphs Through "Amount of Change."* Abstract presented at SEER Center Spring Research Forum. Athens, GA.
- \*Tasova, H.I. (2018, April). *Direction of Tangent Lines as a Justification of Curvature and Its Drawbacks: The Case of Emma.* Poster presented at Integrative Research and Ideas Symposium. Athens, GA.
- \*Liang, B., Stevens, I. E., & Tasova, H. I. (2018, March). *Documenting college students' meanings for partitioning activity.* Poster presented at the 2018 College of Education Research Conference at University of Georgia. Athens, GA.
- \*Tasova, H. I. (2017, May). *Trends in strength and slope of socio-economic gradients in mathematics in PISA 2006 and 2015 for the U.S.* Abstract presented at SEER Center Spring Research Forum. Athens, GA.
- \*Tasova, H. I. (2017, April). *What can PISA 2015 Results Tell us about Disparities in Mathematics in the U.S.?* Poster presentation at the University of Georgia's College of Education Graduate Student and Faculty Research Conference. Athens, GA.
- \*Tasova, H. I. & \*Stevens, I. (2017, April). *An Analysis of U.S. and Turkish Textbooks through a Shape Thinking Perspective: Linear Functions.* Poster presentation at the University of Georgia's College of Education Graduate Student and Faculty Research Conference. Athens, GA.
- \*Tasova, H. I. (2017, March). *Immigrant, Gender and Socioeconomic Differences in Mathematics, Science, and Reading Performance in the U.S.: Multilevel Findings from PISA 2015.* Abstract presented at Integrative Research and Ideas Symposium. Athens, GA.
- \*Tasova, H. I., & Moore, K.C. (2017, January). *A Comparative Analysis of Turkish Textbooks through Shape Thinking Perspective.* Abstract presented at the Southern sectional meeting of the Mathematical Association of America. Macon, GA.

## **AWARDS AND HONORS**

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|------|---|
| 2019 | Mathematics and Science Education Student Travel Award<br>University of Georgia |
| 2019 | Graduate School Student Travel Grant<br>University of Georgia                   |
| 2018 | Dr. Thomas Cooney Travel Award<br>University of Georgia                         |



- 2018 Research Informing Practice Award by SEER Center Spring Research Forum  
University of Georgia
- 2018 Travel Grant from Dr. Denise Spangler's Professorship Endowment  
University of Georgia
- 2018 Graduate School Student Travel Grant  
University of Georgia
- 2017 Registration Scholarship Award  
The North American Chapter of the Psychology of Mathematics Education
- 2017 College of Education Research Conference Best Poster Award  
University of Georgia
- 2017 MTLT SCK Institute Travel Grant  
University of Michigan
- 2017 MTLT SCK Institute Travel Grant  
University of Michigan

## **LEADERSHIP AND PROFESSIONAL SERVICE**

### **Professional Development**

- Oct, 2018 Facilitator  
*The 59<sup>th</sup> annual Georgia Mathematics Conference*, with middle and high school teachers  
Rock Eagle, GA.
- Feb, 2017 Assistant Facilitator  
*Clarke County School District Professional Learning Day*, with 8<sup>th</sup> grade and 9<sup>th</sup> grade mathematics teachers,  
Clarke Central High School, Athens, GA.
- Oct, 2016 Assistant Facilitator  
*Clarke County School District Professional Learning Day*, with 8<sup>th</sup> grade and 9<sup>th</sup> grade mathematics teachers,  
Clarke Central High School, Athens, GA.
- Mar, 2012 Facilitator  
*Teacher Professional Development Conference*, with high school mathematics and geometry teachers,  
GeoGebra training workshop for mathematics and geometry teachers  
Private Istanbul Science High School, Istanbul, Turkey
- Oct., 2011 Facilitator  
*Teacher Professional Development Conference*, with high school mathematics and geometry teachers,  
GeoGebra training workshop for mathematics and geometry teachers  
Private Istanbul Science High School, Istanbul, Turkey

## **Editorship**

- 2017-present Co-Editor in Chief  
*The Mathematics Educator*, Volumes 26(2) – 27(1). University of Georgia,  
Athens, GA.
- 2016–2017 Co-Editor  
*The Mathematics Educator*, Volumes 25(Special Issue) – 26(1). University of  
Georgia, Athens, GA

## **Journal Manuscript Reviewer**

- 2016 *The Mathematics Educator*
- 2019 *Mathematics Teacher: Learning and Teaching Pre-K–12*

## **Proposal Reviewer for Professional Conferences**

- 2017–Present *Psychology of Mathematics Education – North American Chapter*

## **Service**

- 2019–present Colloquium Chair,  
Mathematics Education Student Association at the University of Georgia
- 2016–2017 Treasurer,  
Mathematics Education Student Association at the University of Georgia
- 2017–2018 Vice President,  
Turkish Student Association at the University of Georgia
- 2016–2017 Board Member,  
Turkish Student Association at the University of Georgia

## **Conference Session Chairing and Presiding**

- 2016 Invited Sessions Presider for two sessions.  
50<sup>th</sup> Anniversary of Mathematics Education at the University of Georgia, Athens, GA

## **Other**

- 2017 A team member for developing/applying tasks for middle school students in Math  
Fest of MESA at the University of Georgia.

## **PROFESSIONAL MEMBERSHIPS**

- 2018 – present Association of Mathematics Teacher Educators (AMTE)
- 2017 – present Special Interest Group of the MAA on Research in Research in  
Undergraduate Mathematics (SIGMAA-RUME)
- 2017 – present Society for Industrial and Applied Mathematics (SIAM)

2016 – present North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA)

2014 – present Mathematics Education Student Association (MESA), University of Georgia

2014 – present National Council of Teachers of Mathematics (NCTM)