

ERIN R. (MCCRACKEN) OTTMAR

Worcester Polytechnic Institute
100 Institute Rd.
Worcester MA 01609

Social Science and Policy Studies
Salisbury Laboratories 317C
Phone: 508-831-6096
Email:erottmar@wpi.edu

EDUCATION

Post-Doctoral Training	2011-2014
UNIVERSITY OF RICHMOND, Department of Psychology Concentrations: Mathematics Learning and Cognition	
Ph.D. UNIVERSITY OF VIRGINIA, Curry School of Education	May 2011
Educational Psychology: Applied Developmental Science Concentrations: Mathematics Education Classroom Interventions Social and Emotional Development of Children	
B.A. UNIVERSITY OF RICHMOND	2005
Psychology and Elementary Education, <i>Cum Laude</i> Minor: Studio Art	
Virginia Professional Teaching License (Pre-K-6)	2005-present

SCHOLARLY INTERESTS

Interventions in Schools; Mathematical Cognition and Development; Math Teaching and Learning; Perceptual Learning; Social and Emotional Learning and Development; Observational Measurement Development; Teacher/Child Interactions; Teacher Quality; Motivation and Engagement; Teacher Beliefs and Knowledge

PROFESSIONAL RESEARCH EXPERIENCE

<i>Worcester Polytechnic Institute, Social Science and Policy Studies Department</i>	2015-present
Assistant Professor of Learning Sciences and Psychology	
<i>Indiana University, Department of Psychological and Brain Sciences</i>	2014-2015
Visiting Research Associate	
<i>University of Richmond, Department of Psychology</i>	2011-2014
Post-doctoral Research Scientist	
<i>University of Virginia, Curry School of Education, Social Development Lab</i>	2007-2011
Graduate Researcher	
<i>University of Virginia, Center for Advanced Study of Teaching and Learning (CASTL)</i>	2007-2011
Graduate Researcher	
<i>University of Richmond, Department of Psychology</i>	2001-2005
Undergraduate Research Assistant	

AWARDS/DISTINCTIONS/FELLOWSHIPS

2019 WPI Trustee's Faculty Achievement Award	2020
2018 WPI Trustee's Faculty Achievement Award	2019
2018 AERA Division C New Faculty Mentoring Program Awardee	2018
2017 Data Consortium Fellow	2017
2016 WPI Trustee's Faculty Achievement Award	2017
AERA Early Career Fellow- Study of Deeper Learning (AERA-SDL)	2016-18
#6 Most Read Article in Education Research in 2015 by AERA (AERJ)	2016
Society for Research in Child Development (SRCD) Teaching Mentee	2013-2014
AERA Statistical Institute Grantee- <i>Mathematics Education and Equity</i>	2012
NCTM Linking Research and Practice Outstanding Publication Award	2011
Institute for Education Sciences (IES) Predoctoral Interdisciplinary Training Fellowship	2007-2011
Society for Research in Child Development (SRCD) Student Award (\$500)	2011
Tomorrow's Professor Today Fellow, University of Virginia 2010-11	
Fulbright Scholar Recipient – Malaysia (<i>declined due to political unrest</i>)	2005-06
Departmental Honors in Psychology and Elementary Education	2005
University of Richmond Undergraduate Research Grant	2005
PsiChi, National Psychology Honor Society	2004-present
Kappa Delta Pi, International Honor Society in Education	2003-present
Golden Key International Honor Society	2003-present
Three-time Academic All-American (Scholar-Athlete)	2003-2005

FUNDED EXTERNAL GRANTS

1. Whitehill, J., **Ottmar, E.**, Locasale-Crouch, J., & Harrison, L. (2020-2021). RET Supplement. National Science Foundation (NSF-Cyberlearning EXP), \$10,000..
2. Arroyo, I., **Ottmar, E.** & Smith, J. (2020-2021). *REU Supplement*. Funded by the National Science Foundation (NSF-Cyberlearning), \$16,000.
3. Weitnauer, E., **Ottmar, E.** Sawrey, K., Chan, J.Y.C., & Matlen, B. (2019-2021). *Graspable Math Activities: Increasing Algebra Proficiency with Dynamic Notation Technology*. Funded by SBIR- Institute of Education Sciences, \$900,000.
4. Arroyo, I., **Ottmar, E.** & Smith, J. (2019-2022). *Developing Computational Thinking by Creating Multi-player Physically Active Math Games*. Funded by the National Science Foundation (NSF-Cyberlearning), \$745,612.
5. **Ottmar, E.**, Landy, D., Mason, C., Heffernan, N. & Goldstone, R. (2018-2021). *The Efficacy of From Here to There: A Dynamic Technology for Improving Algebraic Understanding*. Funded by Institute of Education Science (IES-CASL), \$3,295,403
<https://ies.ed.gov/funding/grantsearch/details.asp?ID=2175>
6. Weitnauer, E., **Ottmar, E.**, Landy, D. (2018). *Graspable Math Activities: Increasing Algebra Proficiency with Dynamic Notation Technology*. Funded by SBIR- Institute of Education Sciences, \$199,681. <https://ies.ed.gov/funding/grantsearch/details.asp?ID=2107>
7. Whitehill, J., **Ottmar, E.**, Locasale-Crouch, J., & Harrison, L. (2018-2021). *Teachers are the*

- Learners: Providing Automated Feedback on Classroom Interpersonal Dynamics*. National Science Foundation (NSF-Cyberlearning EXP), \$749,969.
8. Nathan, M.,...**Ottmar, E** (2019)., *DCL: Synthesis and Design Workshop: The Future of Embodied Design for Mathematical Imagination and Cognition*. Funded by the National Science Foundation, \$100,000 (workshop organizer)
 9. Soto, T., Nathan, M....**Ottmar, E.** (2019-2021). *Embodied Mathematical Imagination and Cognition: Professional Development for Undergraduate Mathematics Instructors*. Funded by the National Science Foundation, \$49,326 (workshop organizer)
 10. Whitehill, J., **Ottmar, E.**, & Locasale-Crouch, J. (2018-2019). *Towards Computer-Assisted Coding of Classroom Observations: A Computer Vision Approach to Measuring Positive Climate*. Funded by the Spencer Foundation, \$50,000.
 11. Arroyo, I.,& **Ottmar, E.** (2018-2019). *REU Supplement*. Funded by the National Science Foundation (NSF-Cyberlearning), \$16,000.
 12. Arroyo, I., **Ottmar, E.** & Fisler, K. (2016-2018). *EAGER: Developing Computational Thinking by Creating Embodied Games: Programming Wearable Devices as Finite State Machines*. Funded by the National Science Foundation (NSF-Cyberlearning), \$299,949.
 13. **Ottmar, E.** (2016-2017). *The effects of deeper learning opportunities on student achievement: Examining differential pathways across network and non-network schools*. The AERA Fellowship Program on the Study of Deeper Learning. American Educational Research Association, \$20,000.
 14. **Ottmar, E.** (2017). *Beyond Correct Answers: How Can Measures of Process within Graspable Math, a Dynamic Mathematics Technology Inform Teaching and Learning?* NSF Data Consortium Fellowship. \$2,000.

FUNDED INTERNAL GRANTS

1. Harrison, A., **Ottmar, E.** & Perez-Lacera, L. (2020-21). *WIN Young Investigators Fellowship: Providing WPI Students and Faculty with Mentorship and Research Conference Opportunities. (WPI Women's Impact Network)*, \$23,000.
2. Harrison, A., Hulse, T., & Sawrey, K, **Ottmar, E.** & Mitchell, M. (2019-20). *WIN Young Investigators Fellowship: Providing WPI Students and Faculty with Mentorship and Research Conference Opportunities. (WPI Women's Impact Network)*, \$23,000.
3. **Ottmar, E.**, Douglas, E., Harrison, A., Hulse, T., & Daigle, M. (2018-19). *WIN Young Investigators Fellowship: Providing WPI Students and Faculty with Mentorship and Research Conference Opportunities. (WPI Women's Impact Network)*, \$28,000.
4. **Ottmar, E.** (2017-2018). *Graspable Math*. Generous gift from WPI Alumni and Donor to support Faculty Research, \$40,000.
5. **Ottmar, E.**, (2017-2018). *Creating Videos to Teach Developmental Concepts*. Faculty Learning Community on Project Based Courses. WPI Teaching Innovation Grants Program, \$6000.

PRIOR EXTERNAL GRANTS

1. Landy, D. & Goldstone, R. (2011-2015, funded). *Teaching the visual structure of algebra through dynamic interactions with notation*, Department of Education, Institute of Education

- Science (IES-CASL), #R305A110060 \$1,120,000, Post-doc and Research Associate.
2. Rimm-Kaufman, S. E., Fan, X, Berry, R., & Justice, L. (2007-2011). *The Efficacy of the Responsive Classroom approach for improving teacher quality and children's academic performance*. Institute for Education Sciences, U.S. Department of Education, Teacher Quality-Mathematics. (\$2,814,668), Graduate Researcher.

GRANT ADVISORY BOARDS

1. Nathan, M., & Walkington, C. (submitted). *Teachers' Embodied Geometry Knowledge and Instruction*, Department of Education, Institute of Education Science (IES-CASL). Advisory Board member.
2. McNeil, N., & Davenport, J. (submitted). *Leveraging Technology to Improve Children's Understanding of Mathematical Equivalence*. Department of Education, Institute of Education Science (IES-CASL). Advisory Board member.
3. Roschelle, J & Hodkowski, N (submitted). *Making Noise in Mathematics: Instructional Coaching and Data Tools for Student Discourse*. NSF DRK12. Advisory Board Member.

PUBLICATIONS

1. Abrahamson, D., Nathan, M., Williams-Pierce, C., Walkington, C., **Ottmar, E.**, Soto, H., & Alibali, M. (2020). The Future of Embodied Design for Mathematics Teaching and Learning. *Frontiers in Education*. <https://doi.org/10.3389/educ.2020.00147>
2. Harrison, A., Smith, H., Hulse, T., & **Ottmar, E.** (2020). Spacing out!: Manipulating Spatial Features in Math Expressions Affects Performance. *Journal of Numerical Cognition*.
3. Smith, H., Harrison, A., **Ottmar, E.** & Arroyo, I. (in press). Supporting Technology-Augmented Game Creation and Play Through A Teacher Professional Development Program. *Contemporary Issues in Technology and Mathematics Teacher Education*.
4. Hulse, T., Daigle, M., Manzo, D., Braith, L., Harrison, A., & **Ottmar, E.** (2019). From Here to There! Elementary: A Game-Based Approach to Developing Early Algebraic Understanding. *Educational Technology Research and Development*. 1-18.
5. Ottmar, E.R. (2019). The effects of deeper learning opportunities on student achievement: Examining differential pathways. *Psychology in the Schools*. 1-16.
6. **Ottmar, E.** (2018). A review of development of mathematical cognition: neural substrates and genetic influences. *Journal of Numerical Cognition*.
7. Goldstone, R., Marghetis, T., Weitnauer, E., **Ottmar, E.**, & Landy, D. (2017). Adapting perception, action, and technology for mathematical reasoning. *Current Directions in Psychological Science*. DOI: [10.1177/0963721417704888](https://doi.org/10.1177/0963721417704888)
8. **Ottmar, E.R.** & Landy, D. (2017). Concreteness fading of algebraic instruction: Effects on mathematics learning. *Journal of the Learning Sciences*. <http://dx.doi.org/10.1080/10508406.2016.1250212>
9. Landy, D., Charlesworth, A., & **Ottmar, E.** (2016). Cutting in line: Discontinuities in the use of large numbers. *Cognitive Science*, 1-28. DOI: 10.1111/cogs.12342
10. **Ottmar, E.R.**, Rimm-Kaufman, S.E, Larsen, A., & Berry, R.Q. (2015). Mathematical Knowledge for Teaching, Mathematics Teaching Practices, and Student Achievement in the

Context of the Responsive Classroom Approach. *American Educational Research Journal*. doi: 10.3102/0002831215579484

11. **Ottmar, E.R.**, Decker, L.E., Cameron, C., Curby, T., & Rimm-Kaufman, S.E. (2014). Classroom instructional quality, exposure to mathematics instruction, and mathematics achievement in fifth grade. *Learning Environments Research*, 17: 243–262. DOI: 10.1007/s10984-013-9146-6
12. **Ottmar, E.R.**, Konold, T.R., Berry, R. Q., Grissmer, D.W., & Cameron, C. (2014). Structural validity of the mathematics teacher questionnaire: A measure of exposure to mathematics instructional practices and content. *Learning Environments Research*. 17:127–138. DOI:10.1007/s10984-013-9147-5
13. Walkowiak, T.A., Berry, R.Q., Meyer, P., Rimm-Kaufman, S.E., & **Ottmar, E.** (2014). Introducing an observational measure of mathematics instructional quality: Evidence of validity and score reliability. *Educational Studies in Mathematics*, 85(1), 109-128.
14. **Ottmar, E.R.**, Konold, T.R., Berry, R.Q. & Grissmer, D., & Cameron, C. (2013). Increasing equity and achievement in fifth grade mathematics: The contribution of content exposure. *School Science and Mathematics*, 113(7), 345-355.
15. **Ottmar, E.R.**, Rimm-Kaufman, S.E., Berry, R.Q. & Larsen, R. A.A. (2013). Results from a randomized controlled trial: Does the *Responsive Classroom* approach affect the use of standards-based mathematics teaching practices? *Elementary School Journal*, 113(3), 434-457.
16. **Ottmar, E.R.** & Walkowiak, T.A. (2011, Fall). Social emotional learning in the mathematics classroom. *Advances in SEL research*, 5(1), 6-7.
17. Merritt, E.G., Berry, R.Q., Rimm-Kaufman, S.E., Walkowiak, T.A., & **McCracken, E.R.** (2010). A framework for reflection: What are the critical components of an effective mathematics lesson? *Teaching Children Mathematics*, 238-248.

BOOK CHAPTERS

1. Goldstone, R., Weitnauer E., **Ottmar, E.**, Marghetis, T., & Landy, D. (2016). Modeling mathematical reasoning as trained perception-action procedures. In *Design Recommendations for Intelligent Tutoring Systems: Volume 4- Domain Modeling*. Army Research Laboratory.
2. **Ottmar, E.**, Landy, D., Weitnauer, E., & Goldstone, R. (2015) Graspable mathematics: Using perceptual learning technology to discover algebraic notation. In M. Meletiou-Mavrotheris, K. Mavrou, & E. Papanastasiou (Eds.), *Integrating Touch-Enabled and Mobile Devices into Contemporary Mathematics Education*. Hershey: IGI Global.

WHITE PAPERS

1. Nathan, M.J., Williams-Pierce, C., Walkington, C., Abrahamson, D., **Ottmar, E.**, Soto, H., & Alibali, M.W. (2019). DCL Synthesis and Design Workshop: The Future of Embodied Design for Mathematical Imagination and Cognition. White paper available at <https://circlcenter.org/events/synthesis-design-workshops>, and at the Rapid Community Report series (<https://repository.isls.org/handle/1/1229>).

RESEARCH BRIEFS

1. **Ottmar, E. R.**, Rimm-Kaufman, S, E, Larsen, R. & Berry, R. Q. (2016). Teachers' support for social and emotional learning contributes to improved mathematics teaching and learning. Retrieved from: http://curry.virginia.edu/uploads/resourceLibrary/Teachers_support_for_SEL_contributes_to_improved_math_teaching_and_learning_et_al.pdf
2. **Ottmar, E.R.**, Konold, T.R., Berry, R.Q. & Grissmer, D.W. & Cameron, C.E. (2014). Broad exposure to mathematics content matters more for students in racially diverse classrooms. Retrieved from [http://curry.virginia.edu/uploads/resourceLibrary/CASTL_Research_Brief-Ottmar_et_al_\(2014\)_SSM.pdf](http://curry.virginia.edu/uploads/resourceLibrary/CASTL_Research_Brief-Ottmar_et_al_(2014)_SSM.pdf)
3. **Ottmar, E. R.**, Rimm-Kaufman, S, E, Berry, R. Q. & Larsen, R. A. (2013). The Responsive Classroom Approach increases the use of standards-based mathematics teaching practices. Retrieved from: http://curry.virginia.edu/uploads/resourceLibrary/CASTL_Research_Brief-Ottmar_et_al_%282013%29_ESJ.pdf

REFEREED CONFERENCE PROCEEDINGS PUBLICATIONS

1. Sawrey, K., Chan, J.YC., & **Ottmar, E.** (2020). *Equivalence tasks in a digital algebraic notation system promotes performance in middle school mathematics*. In Ana Isabel Sacristán & José Carlos Cortés (Eds.) (pp. xx-xx), Proceedings of the 42nd annual conference of the North-American chapter of the International Group for the Psychology of Mathematics Education. Mazatlán, Sinaloa, Mexico.
2. Nathan, M. J., Harrison, A., Smith, H., **Ottmar, E.**, Abrahamson, D., & Williams-Pierce, C. (October, 2020). Embodied Mathematical Imagination and Cognition (EMIC) Working Group. In Ana Isabel Sacristán & José Carlos Cortés (Eds.) (pp. xx-xx), Proceedings of the 42nd annual conference of the North-American chapter of the International Group for the Psychology of Mathematics Education. Mazatlán, Sinaloa, Mexico.
3. Harrison, A., Smith, H., Botelho, A., **Ottmar, E.**, & Arroyo, I. (June, 2020). *For good measure: Identifying student measurement estimation strategies through actions, language, and gesture*. Paper accepted to the 2020 International Conference of the Learning Sciences.
4. Ramakrishnan, A., **Ottmar, E.**, LoCasaleCrouch, J., and Whitehill, J.(2019). Toward Automated Classroom Observation: Predicting Positive and Negative Climate". IEEE Automatic Face & Gesture Recognition.
5. **Ottmar, E. R.**, Walkington, C., Abrahamson, D., Nathan, M. J., Harrison, A., & Smith, C. (2019). Embodied mathematical imagination and cognition (EMIC) working group. Working group conducted at the 2019 conference of the North American Chapter of the Psychology of Mathematics Education.
6. **Ottmar, E.**, Melcer, E., Abrahamson, D., Nathan, M., Fyfe, E., & Smith, C. (2018). Embodied Mathematical Imagination and Cognition (EMIC) working group. Paper presented at the 2018 conference of the North American Chapter of the Psychology of Mathematics Education (under review)

7. Harrison, A., Hulse, T., Manzo, D., Micciolo, M., Ottmar, E., & Arroyo, I. (June, 2018). *Computational thinking through game creation in STEM classrooms*. Proceedings (Part II) of the 19th International Conference on Artificial Intelligence in Education. London, U.K. pp. 134-138. (Poster)
 8. Arroyo, I., Micciollo, M., Casano, J., Ottmar, E., Hulse, T., and Mercedes Rodrigo, M. (2017). Wearable Learning: Multiplayer Embodied Games for Math. In Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '17). ACM, New York, NY, USA, 205-216. DOI: <https://doi.org/10.1145/3116595.3116637>
 9. Weitnauer, E., Landy, D., & **Ottmar, E.** (2016). Graspable math: Towards dynamic algebra notations that support learners better than paper. *Future Technologies Conference*. San Fransisco, CA.
 10. Nathan, M., **Ottmar, E.**, Abrahamson, D., Williams-Pierce, C., Walkington, C., & Nemirovsky, R. (2016). *Embodied mathematical imagination and cognition (EMIC) working group*. The Psychology of Mathematics Education Conference, North American Chapter, Tuscon, Arizona.
 11. **Ottmar, E. R.**, Landy, D., Goldstone, R. L., & Weitnauer, E. (2015). *Getting from here to there: Testing the effectiveness of an interactive mathematics intervention embedding perceptual learning*. *Proceedings of the Thirty-Seventh Annual Conference of the Cognitive Science Society*. (pp. 1793-1798). Pasadena, CA: Cognitive Science Society.
 12. **Ottmar, E.R.**, Landy, D., Goldstone, R., & Weitnauer, E. (2015, August). *Getting from here to there!: Testing the effectiveness of an interactive mathematics intervention embedding perceptual learning*. Paper presented at the 37th Annual Conference of the Cognitive Science Society, Pasadena, California.
 13. Landy, D., Charlesworth, A., & **Ottmar, E.** (2014, July). Cutting in Line: Discontinuities in the use of large numbers by adults. *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Quebec, Canada: Cognitive Science Society.
 14. **Ottmar, E.**, Landy, D. & Goldstone, R. L. (2012). Teaching the perceptual structure of algebraic expressions: Preliminary findings from the Pushing Symbols intervention. In N. Miyake, D. Peebles, & R. P. Cooper (Eds.) *Proceedings of the 34th Annual Conference of the Cognitive Science Society* (pp. 2156-2161). Austin, TX: Cognitive Science Society.
 15. **Ottmar, E.R.** & Landy, D. (2012, November). *Pushing symbols: Teaching the structure of algebraic expressions*. *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (238-241). Kalamazoo, MI.
-

MANUSCRIPTS SUBMITTED OR IN REVISION TO RESUBMIT

1. Chan, J. Y. C., Lee, J. E., Mason, C., Sawrey, K. B., & **Ottmar, E. R.**, (in review). Equivalence task in From Here to There!: A digital algebraic notation system impacts conceptual understanding in middle school mathematics. *Journal of Educational Psychology*.
2. Ramakrishnan, A., Zylich, B. **Ottmar, E.**, LoCasale-Crouch, J., Whitehill, J, (in review). Toward Automated Classroom Observation: Multimodal Machine Learning to Estimate CLASS Positive Climate and Negative Climate. *IEEE Transactions on Affective Computing*.

3. **Ottmar, E.**, LoCasale-Crouch, J., Harrison, L., Ramakrishnan, A., & Whitehill, J. (under review). The Potential of Machine Learning to Automate Classroom Observations and Provide Feedback on Classroom Interpersonal Dynamics.
4. Chan, J. Y. C., **Ottmar, E. R.**, Hulse, T. R., & Sawrey, K. B. (In Review). Slow down to speed up: Longer pause time before solving problems relates to higher strategy efficiency.
5. Harrison, A., **Ottmar, E.**, & Arroyo, I. (in revision). The roles and study of gesture in mathematics learning.
6. **Ottmar, E.R.**, Baroody, A., & Rimm-Kaufman (In Revision). Can social and emotional learning interventions help decrease the gender achievement gap in mathematics?
7. Ostrow, K., **Ottmar, E.** & Somasse, B. (in revision). Think highly of your child: Early caretaker interactions and perceptions contribute to later scholastic achievement.
8. Landy, D., **Ottmar, E.**, & Phillips, S.. (in revision). What makes a mathematical representation “grounded”?

UNPUBLISHED REPORTS

1. **Ottmar, E. R.**, Lee, J., & Chan, J.Y.C. (2020). The Efficacy of From Here to There Study: Examining the impacts of algebra performance in two technology interventions. Retrieved from: <https://sites.google.com/view/from-here-to-there>

MEASUREMENT DEVELOPMENT

1. Berry, R. Q., Rimm-Kaufman, S. E., **Ottmar, E.R.**, Walkowiak, T. A., & Merritt, E. (2010). *The mathematics scan (M-Scan): A measure of standards-based mathematics teaching practices*. University of Virginia.
http://www.socialdevelopmentlab.org/wp-content/uploads/2012/05/M-Scan_measure_Final.pdf
2. Rimm-Kaufman, S.E., Walkowiak, T.A., & **Ottmar, E.R.** (2010). *Mathematics time sampling measure (M-TSM): An observational measure of exposure to mathematics content and instruction*. University of Virginia.

CURRICULAR INTERVENTION/TECHNOLOGY DEVELOPMENT

1. Weitnauer, E., & Ottmar, E. (2019, in development). *Graspable Math Activities*. A suite of student activities and teacher tools for the classroom.
<https://activities.graspablemath.com/branch/sbir/> Resources can be found at <https://sites.google.com/view/gmactivities>
2. Landy, D., **Ottmar, E.R.**, & Weitnauer, E. (2014). *From Here to There!* A web based application for the exploration of arithmetic, symbolic algebra, and logic. Full version available online at www.graspablemath.com and fromheretothere-dev-new.herokuapp.com
3. **Ottmar, E.** & Landy, D (2016). *From Here to There: Elementary*. Available at www.graspablemath.com
4. Landy, D., **Ottmar, E.R.**, & Weitnauer, E. (2015). *Graspable Math*, Canvas and demos available at <http://www.graspablemath.com>
5. Landy, D., Weitnauer, E., & **Ottmar, E.** (2015). *Graspable Math Sidebar*.
<https://chrome.google.com/webstore/detail/graspable-math-sidebar/akhomcaccppndpgckgpkmcijkimphmk?hl=en-US>

CONFERENCE PRESENTATIONS

1. Smith, H.**., Chan, J.Y.C., St .John, J.**., **Ottmar, E.**, & Arroyo, I. (2020) Is Bigger Better? Comparing the Effects of Linear Board Games on Children's Numerical Knowledge. Poster accepted for presentation at the 2020 Mathematical Learning and Cognition Society Conference. Dublin, Ireland.
2. Smith, H**., Harrison, A**., Chan, J.Y.C., & **Ottmar, E.** (2020) Dynamic vs. Static: Which Worked Examples Work Best? Poster accepted for presentation at the 2020 Mathematical Learning and Cognition Society Conference. Dublin, Ireland.
3. Drzewiecki, K**., & **Ottmar, E.** (2020). Preliminary Exploration of the Role of Math Anxiety on Performance Outcomes in Mathematics Learning. Poster accepted for presentation at the 2020 Mathematical Learning and Cognition Society Conference. Dublin, Ireland.
4. **Ottmar, E.**, Iannacchione, A**., Chan, J.Y.C., & Drzewiecki, K**.. (2020).Examining Relations of Math Anxiety and Algebra Performance in Two Technology Interventions. Poster accepted for presentation at the 2020 Mathematical Learning and Cognition Society Conference. Dublin, Ireland.
5. Chan, J. Y. C., **Ottmar, E.**, Sawrey, K. B., & Lee, J. E. (2020). Longer pre-solving pause time relates to higher strategy efficiency. In Chan, J.Y.C & Bye, J.K. (Co-chairs), Problem-solving strategy in algebra: From lab to practice. Symposium accepted for presentation at the 2020 Mathematical Learning and Cognition Society Conference. Dublin, Ireland.
6. Harrison, A**., Smith, H**., Botelho, A., **Ottmar, E.**, & Arroyo, I. (June, 2020). For good measure: Identifying student measurement estimation strategies through actions, language, and gesture. Poster paper accepted to the 2020 International Conference of the Learning Sciences.
7. **Ottmar, E.**, Sawrey, K., Chan, J.Y.C., & Lee, J. (under review).Moving From Here to There!: Improving Conceptual Understanding of Algebraic Equivalence. Symposia talk submitted for presentation at the 2020 Mathematical Learning and Cognition Society Conference. Dublin, Ireland.
8. Chan, J. Y. C., Sawrey, K. B., Hulse, T.**., & **Ottmar, E.** (2020). Think before you act: Thinking time contributes to math problem-solving efficiency. Paper to be presented at the 2020 Annual meeting of the American Educational Research Association (AERA). San Francisco, CA.
9. Harrison, A**., Smith, H**., Hulse, T**., & **Ottmar, E.** Spacing out!: Manipulating Spatial Features in Math Expressions Affects Performance. Paper to be presented at the 2020 Annual meeting of the American Educational Research Association (AERA). San Francisco, CA.
10. Chan, J.Y.C., Hulse, T.**., Sawrey, K., **Ottmar, E.**, (2019, November) Students' behavior in a dynamic algebra notation system as indicators of their algebra skills. Poster presented at the 41st Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA). St. Louis, Missouri.

11. Sawrey, K. B., Hulse, T**., Chan, J.Y.C., **Ottmar, E.**, (2019, November). Experiencing Equivalence with Graspable Math: Results from a Middle-School Study. Brief Research Report presented at 2019 North American Division of the Psychology and Mathematics Education Conference. St. Louis, MO.
12. Chan, J.Y.C., Hulse, T**., Sawrey, K., **Ottmar, E.**, (June, 2019) Experience with a dynamic algebra notation system predicts high-school students' algebra performance. Poster presented at the 2019 Mathematical Cognition and Learning Society Conference, Ottawa, Canada.
13. Hulse, T**., **Ottmar, E.** Developing Measures of Mathematical Proficiency in a Learning Technology. Paper presented at National Council of Teachers of Mathematics Research Conference, April, 2019. San Diego, CA.
14. Sawrey, K., **Ottmar, E.**, Hulse, T**., Weitnauer, E., Harrison, A** (accepted). Exploring Dynamic Learning Technologies for Experiencing Algebraic Notation. Discussion session presented at National Council of Teachers of Mathematics Research Conference, April, 2019. San Diego, CA.
15. Daigle, M**., & **Ottmar, E.** (2019). Deeper Learning in Paraguay: Relations between Student Social, Emotional, and Cognitive Skills, Outcomes, and Aspirations. Paper presented at the 2019 International Convention of Psychological Science: Paris, France.
16. Smith, H**., Harrison, A**., **Ottmar, E.**, Arroyo, I., (2019). Quantity and Quality of Gestures are Related to Performance on an Embodied Geometric Estimation Task. Poster presented at the 2019 Mathematical Cognition and Learning Society conference.
17. **Ottmar, E.**, Melcer, E., Abrahamson, D., Nathan, M., Fyfe, E., & Smith, C. (2018). Embodied Mathematical Imagination and Cognition (EMIC) working group. Paper and working group presented at the 2018 conference of the North American Chapter of the Psychology of Mathematics Education.
18. Hulse, T**., Harrison, A**., Arroyo, I., & **Ottmar, E.** (November, 2018). *Developing Methods to Implement Embodied Game Design for Mobile Learning Technologies in STEM Classrooms.* Poster presented at the 2018 conference of the North American Chapter of the Psychology of Mathematics Education. Greenville, SC.
19. Hulse, T**., Harrison, A**., Arroyo, I., **Ottmar, E.** Developing Methods to Implement Embodied Game Design for Mobile Learning Technologies in STEM Classrooms (November, 2018). Poster presented at the 2018 conference of the North American Chapter of the Psychology of Mathematics Education.
20. Hulse, T**., Harrison, A**., Micciolo, M**., Arroyo, I., & **Ottmar, E.** (2018). Developing and Measuring Computational Thinking Through Game Design in STEM Classrooms. National Science Foundation Early Career Researcher Poster presented in the Technology and Instructional Design Category at the London Festival of Learning.
21. Valente, R**., Harrison, A**., **Ottmar, E.**, & Arroyo, I. (2019). Using action and movement to develop students' understanding of measurement in a technology-augmented game. Poster

- presented at the 2019 annual meeting of the Northeastern Educational Research Association. Trumbull, Connecticut.
22. **Ottmar, E** (2018). *Examining Differential Pathways of Deeper Learning*. Invited Presentation at the Excellence in Education Research: Early-Career Scholars and Their Work Event.
 23. Harrison A**, **Ottmar, E.**, Arroyo, I., Rosenbaum, L., Bakker, A., Abrahamson, D., Hulse, T**, Manzo, D**, & Landy, D. (2018, April). *Embodiment and action in mathematics games*. Symposium conducted at the American Psychological Association's conference on Technology, Mind & Society, April 5-7, 2018, Washington, DC.
 24. Harrison, A**, Hulse, T**, Manzo, D**, Micciolo, M**, **Ottmar, E.**, & Arroyo, I. (2018). Computational thinking through game creation in STEM classrooms. Poster presented at the 2018 conference on Artificial Intelligence in Education, London, UK.
 25. Micciolo, M**, Arroyo, I., **Ottmar, E.**, Hulse, T**, & Harrison, A** (2018). The Wearable Learning Cloud Platform for the Creation of Embodied Multiplayer Math Games. Paper presented at the 2018 conference on Artificial Intelligence in Education.
 26. Hulse, T**, Harrison, A**, Arroyo, I., & **Ottmar, E.** Developing Methods to Implement Embodied Game Design for Mobile Learning Technologies in STEM Classrooms. Paper accepted at the 2018 conference of the North American Chapter of the Psychology of Mathematics Education
 27. **Ottmar, E.** (2018). The Effects of Deeper Learning Opportunities on Student Achievement: Examining Differential Pathways. Paper presented at the American Educational Research Association Conference. New York, NY.
 28. Manzo, D**, & **Ottmar, E.** (2018). Understanding The Student Perspective Through Dynamic Technology. Paper presented at the National Council of Teachers of Mathematics Education Research Conference.
 29. Hulse, T**, Daigle, M**, Manzo, D**, & **Ottmar, E.** (2018). Paper presented at the American Educational Research Association Conference. New York, NY.
 30. Arroyo, I., Micciollo, M**, Casano, J., **Ottmar, E.**, Hulse, T**, and Mercedes Rodrigo, M. (2017). Wearable Learning: Multiplayer Embodied Games for Math. Paper presented at the Computer-Human Interaction in Play (CHI PLAY '17) Conference. Amsterdam.
 31. Nathan, M.J., Williams-Pierce, C., Abrahamson, D., **Ottmar, E.**, Landy, D., Smith, C., Walkington, C., DeLiema, D., Soto-Johnson, H., Alibali, M.W., & Boncoddò, R. (2017) *Embodied Mathematical Imagination and Cognition (EMIC) Working Group*. Working group presented at the Psychology of Mathematics Education – North American Chapter conference.
 32. Manzo, D**, **Ottmar, E.**, Landy, D. (2017). Poster presented at The Psychology of Mathematics Education Conference, North American Chapter, Indianapolis, IN.
 33. Micciolo, M**, Hulse, T**, Daigle, M**, Arroyo, I., & **Ottmar, E.** (2017). From players to creators: teaching computational thinking through playing and creating embodied math games. Poster presented at The Psychology of Mathematics Education Conference, North American Chapter, Indianapolis, IN.

34. **Ottmar, E** (2017). *The effects of deeper learning opportunities on student achievement: Examining differential pathways across network and non-network schools*. Invited Presentation at the Excellence in Education Research: Early-Career Scholars and Their Work Event.
35. **Ottmar, E.**, Manzo, V., & Timko, M. (2017). *Whats this? Just Listen: Using Sonification to Reveal the Invisible*. Video presented at the 2017 NSF STEM for All Video Showcase. <http://stemforall2017.videohall.com/presentations/1023>
36. Arroyo, I., & **Ottmar, E.** (2017). Video presented at the 2017 NSF STEM for All Video Showcase. <http://stemforall2017.videohall.com/presentations/1027>
37. Landy, D., **Ottmar, E.**, & Weitnauer, E., (2017). *Graspable Math*. Video presented at the 2017 NSF STEM for All Video Showcase. <http://stemforall2017.videohall.com/presentations/1017>
38. Braith, L**., Daigle, M**., Manzo, D**., & **Ottmar, E.** (2017). *Even Elementary Students Can Explore Algebra!: Testing the Feasibility of from Here to There!, a Game-Based Perceptual Learning Intervention*. Poster Presented at the American Psychological Society Conference, Boston, MA.
39. Ottmar, E. (2017). *Graspable Math: Dynamically Linking Multiple Representations and Revealing Flexible Strategies*. Project presented at the Cyberlearning 2017 Gallery Walk. Washington DC.
40. Ottmar, E., Landy, D., & Manzo, D**.. (2017) *Graspable Math: A Technology for Assessing Multiple Strategies at Scale*. Discussion Session presented at the National Council for Teachers in Mathematics Research Conference, San Antonio, TX.
41. Ottmar, E., Manzo, D**., Landy, D., & Achgill, C.**., Weitnauer, E. (2017). *Assessing Variation In Mathematical Strategies Using Dynamic Technology At Scale*. Paper presented at American Educational Research Association Conference, San Antonio, TX.
42. Nathan, M., **Ottmar, E.**, Abrahamson, D., Williams-Pierce, C., Walkington, C., & Nemirovsky, R. (2016). *Embodied mathematical imagination and cognition (EMIC) working group*. Paper presented at the Psychology of Mathematics Education Conference, North American Chapter, Tuscon, Arizona.
43. Manzo, D**., **Ottmar, E.**, & Mercouris, V**.. (2016). *Getting a grasp on mathematics misconceptions*. Poster presented at the Psychology of Mathematics Education Conference, North American Chapter, Tuscon, Arizona.
44. Goldstone, R., Landy, D., **Ottmar, E.**, & Weitnauer, E. (2015, November). *Algebraic Reasoning as Spatial Transformations of Physical Notation : Enhancing education through cognitive psychology*. Symposium presented at the annual meeting of the Psychonomics Society, Chicago, Illinois.
45. **Ottmar, E.R.** Landy, D., & Weitnauer, E. (2015, November). *Getting from here to there: Effects of a dynamic algebra intervention*. Paper presented at the Psychology of Mathematics Education Conference, North American Chapter, East Lansing, Michigan.
46. **Ottmar, E.R.**, Landy, D., Goldstone, R., & Weitnauer, E. (2015, August). *Getting from here to there!: Testing the effectiveness of an interactive mathematics intervention embedding perceptual learning*. Paper presented at the 37th Annual Conference of the Cognitive Science Society, Pasadena, California.
47. **Ottmar, E.**, Baroody, A. E, & Rimm-Kaufman, S. (2015, April). *Can social and emotional learning interventions help decrease the gender achievement gap in mathematics?* Paper

- presented at the Society for Research in Child Development Conference, Philadelphia, PA.
48. **Ottmar, E.** & Landy, D. (2014, April). *Concreteness fading of algebraic instruction: Effects on learning*. Paper presented at the American Educational Research Association Conference, Philadelphia, PA.
 49. Landy, D. & **Ottmar, E.** (2013, September). *The Pushing Symbols Intervention: Preliminary Results*. Presentation given at the Institute of Education Sciences (IES) and Society for Research in Educational Effectiveness (SREE) Conference, Washington, DC.
 50. Landy, D. & **Ottmar, E.** (2013, July). *Mathematics is a game played with symbols*. Poster presented at the Games and Learning Society Conference, Madison, WI.
 51. Landy, D., **Ottmar, E.**, & Goldstone, R. (2013, April). *The development of perceptually implemented processes in arithmetic*. Paper presented at the Society for Research in Child Development Conference, Seattle, Washington.
 52. **Ottmar, E.**, Hulse, T.**, Pierce, J.**, & Landy, D. (2013, April). *Pushing symbols: An intervention to increase understanding of algebraic notion*. Work session and paper presented at the National Council of Teachers of Mathematics Research Pre-session, Denver, CO.
 53. **Ottmar, E.R.** & Landy, D. (2012, November). *Pushing symbols: Teaching the structure of algebraic expressions*. Paper presented at the Psychology of Mathematics Education Conference, North American Chapter, Kalamazoo, MI.
 54. **Ottmar, E.R.**, Landy, D., & Goldstone, R. (2012, August). *Teaching the perceptual structure of algebraic expressions: Preliminary findings from the pushing symbols intervention*. Paper presented at the 34th Annual Conference of the Cognitive Science Society, Sapporo, Japan.
 55. **Ottmar, E.R.**, Rimm-Kaufman, S.E., & Larsen, R. (2012, April). *Relations between Mathematical Knowledge for Teaching, Mathematics Instructional Quality, and Student Achievement in the Context of the Responsive Classroom (RC)*. Paper presented at the National Council of Teachers of Mathematics Research Pre-session, Philadelphia, PA.
 56. **Ottmar, E.R.**, Rimm-Kaufman, S.E., Larsen, R., & Merritt, E.G. (2011, September). *Relations between Mathematical Knowledge for Teaching, Mathematics Instructional Quality, and Student Achievement in the Context of the Responsive Classroom (RC)*. Paper presented at the Society for Research in Educational Effectiveness, Washington D.C.
 57. **Ottmar, E.R.**, Rimm-Kaufman, S.E., & Berry, R.Q. (2011, April). *Predictors of Mathematics Instructional Quality*. Poster presented at the Society for Research in Child Development Conference, Montreal, Canada.
 58. Merritt, E., Rimm-Kaufman, S., Wanless, S., Berry, R., **Ottmar, E.R.**, Walkowiak, T., & Fan, X. (2011, April). *Mathematical Discourse Community in Third Grade Mathematics Classrooms as a Predictor of Achievement*. Poster presented at the Society for Research in Child Development Conference, Montreal, Canada.
 59. **Ottmar, E.R.**, Rimm-Kaufman, S.E., & Berry, R.Q. (2011, April). *The contributions of mathematical knowledge for teaching and two constructs of mathematics teacher self-efficacy, and the impact of social-emotional learning intervention on mathematics instructional quality*. Paper presented at the National Council for Teachers in Mathematics Conference, Research Pre-session, Indianapolis, IN.
 60. Rimm-Kaufman, S.E., **Ottmar, E.R.**, & Merritt, E. (2011, April). *Preliminary findings from the M-Scan: A measure of mathematics instructional quality*. A symposium presented at the

National Council for Teachers in Mathematics Conference, Research Pre-session, Indianapolis, IN.

61. Berry, III, R.Q, **Ottmar, E.**, & Merritt, E. (2011, April). *The M-Scan Measure of Mathematics Instructional Quality*. Presentation at the Research Pre-session of National Council of Teachers of Mathematics Annual Meeting, April 13, 2011. Indianapolis, IN.
62. Berry, R.Q., Walkowiak, T.A., **Ottmar, E.R.**, & Rimm-Kaufman, S.E. (2011, January). *Mathematics scan (M-Scan): Using a quantitative observational measure to describe mathematics instructional quality*. Paper presented at the Association of Mathematics Teacher Educators Conference, Irvine, CA.
63. **McCracken, E.R.**, Berry, R., & Rimm-Kaufman, S. (2010, June). *The contribution of mathematics teacher efficacy on mathematics instructional quality*. Poster presented at the Institute for Education Sciences Conference, Washington, DC.
64. Walkowiak, T. A., Berry, R. Q., **McCracken, E.R.**, Rimm-Kaufman, S. E., Merritt, E.G. (2010, April). *Introducing an observational measure of mathematics instructional quality*. Poster presented at the National Council for Teachers in Mathematics Conference, San Diego, CA.
65. Walkowiak, T.A., Berry, R.Q., **McCracken, E.R.**, Rimm-Kaufman, S. E., & Meyer, J. P. (2009, September). *The validation of an observational measure of mathematics instruction*. Poster presented at the Psychology of Mathematics Education Conference, North American Chapter, Atlanta, GA.
66. **McCracken, E.R.** Grissmer, D., & Berry, R. (2009, June). *Standards-based instructional practices and mathematics achievement in the fifth grade*. Poster presented at the Institute for Education Sciences Conference, Washington, DC.
67. Rimm-Kaufman, S., Berry, R., **McCracken, E.R.**, Merritt, E., & Walkowiak, T. (2009, June). *Conducting systematic classroom observations in a randomized controlled trial to examine Responsive Classroom approach outcomes*. Poster presented at the Institute for Education Sciences Conference, Washington, DC.
68. **McCracken, E.R.**, Ponitz, C.C, Rimm-Kaufman, S.E. (2009, April). *Classroom instructional quality, exposure to mathematics instruction, and mathematics achievement in fifth grade*. Poster presented at the Society for Research in Child Development Conference, Denver, CO.
69. **McCracken, E.R.**, Decker, L.E., Ponitz, C.C., Curby, T., Rimm-Kaufman, S.E. (2008, June). *Classroom instructional quality, time exposed to mathematics instruction, and mathematics achievement in fifth grade*. Poster presented at the Institute for Education Sciences Conference, Washington D.C.
70. Rimm-Kaufman, S.E., Berry, R.Q., Fan, X., **McCracken, E.R.**, Walkowiak, T. (2008, June). *The efficacy of the Responsive Classroom approach for improving teacher quality and children's academic performance*. Poster presented at the Institute for Education Sciences Conference, Washington D.C.
71. Whitley, R.** , Rimm-Kaufman, S., & **McCracken, E.R.** (2008, August). *Observational validity and time sampling of mathematics instruction in third and fourth grade classrooms*. Presentation given at the Leadership Alliance National Symposium, Hartford, CT.

**Presentation authored by an undergraduate or graduate student mentee.

TEACHING/ MENTORING EXPERIENCE

Worcester Polytechnic Institute

Social Sciences and Policy Studies

Undergraduate Psychology Courses

PSY 4800: Embodied Cognition	C Term 2019
PSY 1404: Developmental Psychology	C Term 2017
PSY 2140: School Psychology	C Term 2016
	A Term 2017
	D Term 2020

Graduate Learning Sciences Courses

PSY 501: Foundations of the Learning Sciences	Spring 2017
	Spring 2020
PSY 4800: Embodied Cognition	Spring 2019
SS 590: Grant Writing in Learning Sciences and Math Education	Fall 2020
	Spring 2016
ISG ERO: Independent Study/Graduate Research (10 students)	2016-2020
SS 590: Applied Multilevel Modeling in Mathematics Education	Fall 2015
	Spring 2018

Supervision/Research Mentor of Graduate Students

Daniel Manzo, Korinn Ostrow, Taylyn Hulse, Avery Harrison, Hannah Smith, Katie Drzewiecki, Fransisco Castro, Anthony Bothelo, Kim Kelly, Sanika Patki, Amisha Jindal, Luisa Perez-Lacera, Aravind Stalin

Supervision/Research Mentor of Undergraduate Students

Victoria Mercouris, Maria Daigle, Ryan Hartenstein, Trang Dieu, Lindsay Braith, Grace Seiche, Olivia Bogs, Luisa Perez, Cindy Trac, Nicholas Chantre, Yveder Joseph, Hailey Anderson, Chloe Byrne, Reilly Norum, Claire Behning, Stephanie Reis, Julie Andrade

Research Mentor of Postdoctoral Scholars

Jenny Yun-Chen Chan, Ji-Eun Lee, Fransisco Castro, Katie Sawrey

Masters/Dissertation Committee Member

Korinn Ostrow, PhD (awarded May 2018), Learning Sciences and Technology
Seth Adeji, PhD (awarded May 2018), Computer Science
Kim Kelley, PhD (awarded October 2018), Learning Sciences and Technology
Matthew Micciolo, Masters, (awarded December 2018) Interactive Media and Game Design
Anthony Bothelo, PhD (awarded May 2019), Learning Sciences and Technology
Daniel Manzo, PhD (awarded May 2020), Learning Sciences and Technology
Taylyn Hulse, Masters, (awarded May 2019), Learning Sciences and Technology
Avery Harrison, Masters, (awarded May 2019), Learning Sciences and Technology
Hannah Smith, Masters, (awarded May 2020), Learning Sciences and

Technology

- Interactive Qualifying Project (IQP) Advising B Term 2016
Melbourne Australia Project Center
24 students, 6 Research Projects
1. *Twenty years down under: Documenting the history and assessing the impacts of WPI's Melbourne Project Center*- Lucas Zuccolo, Andrew Callahan, Killian Henson, & Sotorios Flippou
 2. *Interactive Environmental Education: Developing an African Village Exhibit*- Guilherme Motta Baracchini, Zachary J. Estrella, Jeremiah R. Leonard, & Nicole C. Sherlock
 3. *Sparking a change: Illuminating the path to an all-electric home*- Ryan Conlon, Lorenzo Dube, Dylan Fontana, & Christine Schondek
 4. *Inspiring Australian secondary school students through the Science Bootcamp program*- Morgan Garbett, Nicholas Pratt, Jake Rivard, & Kayla Sica
 5. *Violence Against Women: Using Interactive Performance to Inspire Change*- Scott Friedlander, Steven Knott, Alyssa Marzella, & Regina Reynolds
 6. *Bringing museum audience segmentation to life*- James Beucler, Katherine Comeford, Alessandra Paolucci, & Kendall Rooney

Major Qualifying Project (MQP) Advising
Deeper Learning in Paraguay: Relations between Student Social, Emotional, and Cognitive Skills, Outcomes, and Aspirations 2018-19
Maria Daigle
** Awarded the Two Towers Prize at WPI (award given to the junior student who best exemplifies the union of theory, research, and practice)

Even Elementary Students Can Explore Algebra!: Testing the Feasibility of from Here to There!, a Game-Based Perceptual Learning Intervention 2016-17
Lindsay Braith

University of Richmond

Department of Psychology
PSYC 449: Psychological Research in the Schools, Instructor Spring 2015
PSYC 100: Introduction to Psychological Science, Instructor Spring 2013
PSYC 329: Educational Psychology in Young Children, Invited Lecturer 2012-2014
Research mentor for undergraduate students 2011-present

Department of Education
EDUC327/527: Content and Pedagogy for Elementary Mathematics, Summer 2013
Invited Lecturer
EDUC 207: Diverse Learners and Environments, Invited Lecturer 2011-2012

University of Virginia

Curry School of Education

EDIS 532: Mathematics in the Elementary School, Instructor Spring 2010

EDLF 501: Childhood Learning and Development, Instructor Fall 2009

Improving Math Teaching Using the M-Scan Tool, Instructor Summer 2011

Observational Measures to Code Mathematics Classrooms, Instructor 2009-2010

Journal Club and Statistics Leader for Summer Undergraduate Summer 2010

Research Program

Psychology Behind Learning Seminar, Instructor Spring 2010

Classroom Management Seminar, Instructor Fall 2009

Primary Research Mentor for Summer Undergraduate Research Program Summer 2008

Charlottesville Catholic School, Charlottesville, VA

2008-09

Mathematics tutor to a 6th grade student with special needs

Karatsu Board of Education, Saga Prefecture, Japan

2005-2007

Elementary School English Teacher (Taught K-6th grade in 6 schools)

Junior High School English Teacher (Taught 7-9th grade in 5 schools)

Saga Prefecture District Representative

Escuela Sathya Sai, Manabi, Ecuador

Summer 2004

WorldTeach English and Mathematics Teacher (Pre-K-4th grade)

Cold Harbor Elementary School, Hanover County Public Schools, VA

2004-05

Student Teacher for 1st and 3rd grade

Henrico Public Schools VA and Wachusett Regional School District, MA 2003-2005

Substitute Teacher

Richmond Public Schools, Richmond, VA

2002-2005

Elementary school tutor and mentor

INVITED PLENARY SPEAKER

1. **Ottmar, E.R** (2019, January). *EdTech: The Buzz, the Promise, the Evidence, and the Future*. Invited Plenary Panel Speaker at the 2019 Institute of Education Sciences (IES) PI Meeting.

OTHER UNIVERSITY TALKS AND RESEARCH PRESENTATIONS

2. **Ottmar, E.R** (2017, October). *Adapting Perception, Action and Technology for Mathematical Reasoning*. IGSD Brown bag given at Worcester Polytechnic Institute.

3. **Ottmar, E. R.** (2016, September 21). *Categories of Large Number Estimation*. Presentation given at WPI's Collective Learning Meeting (CLM).
4. **Ottmar, E.R.** (2016, September 17). *Graspable Math: Moving Student Understanding From Here to There*. IGSD Presentation given at Worcester Polytechnic Institute's Family Weekend.
5. **Ottmar, E. R.** (2016, April 26). *The Social Side of Mathematics Teaching and Learning: Strengthening the Instructional System Through the Creation of Responsive Classrooms*. Learning Sciences Brown Bag Talk given at Worcester Polytechnic Institute.
6. **Ottmar, E.R.** (2015, December 10). *Graspable Math: Moving Student Understanding From Here to There*. IGSD Brown bag given at Worcester Polytechnic Institute.
7. **Ottmar E.R.** (2014, February). *The Social Side of Mathematics Teaching and Learning: Strengthening the Instructional System Through the Creation of Responsive Classrooms*. Colloquium given at the University of Richmond.
8. **Ottmar E.R.** (2013, December). *The Social Side of Mathematics Teaching and Learning: Strengthening the Instructional System Through the Creation of Responsive Classrooms*. Presentation given at the College of the Holy Cross.
9. Berry, III, R. Q., Walkowiak, T. A., Merritt, E., **Ottmar, E.** & Henderson, H. *Improving Mathematics Teaching Using the Mathematics Scan (M-Scan)*. Commonwealth of Virginia District and school level Administrators, Mathematics specialists, and teachers. June 22-23, 2011. Charlottesville, VA.
10. **Ottmar, E.R.** (2014, April). *Examining the role of elementary mathematics teacher beliefs, knowledge, and quality for promoting student achievement*. Presentation given at the School of Education, Virginia Commonwealth University.
11. **Ottmar, E.R.** (2011, February). *Examining the role of elementary mathematics teacher beliefs, knowledge, and quality for promoting student achievement*. Presentation given at Gettysburg College, Department of Education.
12. **Ottmar E.R.** (2010, October) *Examining the role of elementary mathematics teacher beliefs, knowledge, and quality for promoting student achievement*. Presentation given at the University of Richmond, Department of Psychology.
13. **McCracken, E.R.** *Thinking about graduate school?* (2008, November). A session for undergraduate students engaged in research at the University of Richmond, Department of Psychology.

RESEARCH TRAINING/PROFESSIONAL DEVELOPMENT

AERA Div. C New Faculty Mentoring Program	April 2018
IES Grant Writing Workshop	April 2018
Hewlett Foundation Deeper Learning Conference	Sept 2017
AERA Deeper Learning Fellows Workshop	April 2017
Institute for Teaching with Writing (WPI)	July 2016
Mediation and Moderation	June 2013
AERA and NSF Institute on Statistical Analysis for Education Policy on <i>Mathematics Education and Equity</i>	May 2012
Tomorrow's Professor Today Professional Development Program	2010-2011
Mixed Methods Research	May 2011

Randomized Control Trials in Education Research	May 2010
Hierarchical Linear Models for Studying the Effects of Schools	June 2009
Power Analysis	June 2009
Data Management	May 2009
Longitudinal Data Analysis Using Structural Equation Modeling	June 2008
Responsive Classroom I Training	June 2008
Introduction to Randomized Controlled Trials in Education	June 2008
Exploring and Using the NAEP and ECLS-K Data Sets	May 2008
Classroom Observation Scoring System (CLASS): Trained and Reliable Coder	2007-present
DATABASE AND STATISTICAL SOFTWARE TRAINING	
National Institute of Child Health and Human Development (NICHD), Early Childhood Longitudinal Study (ECLS-K, ECLS-B)	
Hierarchical Linear Modeling (HLM), SPSS, Mplus, AMOS, LISREL	

EDITORIAL/SERVICE ACTIVITIES

Ad Hoc Reviewer, <i>Cognitive Science</i>	2019-present
Ad Hoc Reviewer, <i>American Educational Research Journal</i>	2019-present
Ad Hoc Reviewer, <i>Educational Technology Research and Development</i>	2018-present
Ad Hoc Reviewer, <i>Cognitive Research: Principles and Implications</i>	2018-present
Ad Hoc Reviewer, <i>Technology, Knowledge, and Learning</i>	2019-present
Ad Hoc Reviewer, <i>Learning and Instruction</i>	2017-present
Ad Hoc Reviewer, <i>Computers and Education</i>	2017-present
Ad Hoc Reviewer, <i>The Journal of the Learning Sciences</i>	2015-present
Ad Hoc Reviewer, <i>Educational Policy</i>	2017
Ad Hoc Reviewer, <i>The High School Journal</i>	2014
Reviewer, <i>Integrating Touch-Enabled and Mobile Devices into Contemporary Mathematics Education</i>	2014
Reviewer, <i>AT&T Aspire Program- High School Impact Initiative</i>	2010-present
Ad Hoc Reviewer, <i>Early Education and Development</i>	2013-present
Ad Hoc Reviewer, <i>Educational Researcher</i>	2012-present
Ad Hoc Reviewer, <i>Mathematics Teacher</i>	2012-present
Ad Hoc Reviewer, <i>Journal of Mathematics Education</i>	2010-present
Ad Hoc Reviewer, <i>School Science and Mathematics</i>	2010-present
Ad Hoc Reviewer, <i>Teaching Children Mathematics</i>	2009-present
Ad Hoc Reviewer, NCTM Annual Research Conference	2009-present
Ad Hoc Reviewer, Society for Research in Child Development (SRCD)	2013-present
Ad Hoc Reviewer, Psychology of Mathematics Education (PME-NA) Annual Meeting	2012-present
Ad Hoc Reviewer, Association of Mathematics Teacher Educators (AMTE)	2013-present
Ad Hoc Reviewer, Curry Research Conference	2010

ADVISORY BOARD/INVITED PANELIST

AT&T Aspire Program Advisory Board Panelist for High School Impact Initiative	2012-2016
---	-----------

SERVICE TO UNIVERSITY AND OUTREACH TO LOCAL COMMUNITY

WPI Teacher and Games Project- a 14 week PD for local teachers	Spring 2019
Conducted a 2 hour professional developments to teachers	March 2017
Organized a visit and viewing of Curtis Chin's TESTED documentary at WPI	Feb 2016
Invited Speaker at WPI's Family Weekend	Sept 2016
Presented at AWESem Event	March 2016-17
TouchTomorrow Faculty Exhibit	June 2016-18
University of Richmond, VA; Office of Multicultural Affairs	March 2012
Helping Hands Career Panelist and Mentor	

PROFESSIONAL AFFILIATIONS

AERA: American Educational Research Association	2009-present
ASCD: Association for Supervision and Curriculum Development	2010-present
Cognitive Science Society	2012-present
NCTM: National Council of Teachers in Mathematics	2007-present
PME-NA: Psychology of Mathematics Education	2012-present
SRCD: Society for Research in Child Development	2007-present
SREE: Society for Research on Educational Effectiveness	2007-present
SSMA: School Science and Mathematics Association	2010-present

NATIONAL MEDIA COVERAGE

January 3, 2020 WPI Receives Funding from the National Science Foundation to Develop a Website that Children Can Use to Design and Play Math Games [WBUR 90.9](#)

December 5, 2019 Researchers get \$746K to develop math game site. Worcester Business Journal. <https://www.wbjournal.com/article/wpi-researchers-get-746k-to-develop-math-game-site>

August 2, 2019 Fund for X: Department of Education awards \$900K to enhance algebra learning technology. <https://news.iu.edu/stories/2019/08/iub/releases/02-graspable-receives-phase-ii-sbir-grant-from-department-of-education.html>

September 23, 2018 WPI project aims to use artificial intelligence to enhance teacher training <https://www.telegram.com/news/20180923/wpi-project-aims-to-use-artificial-intelligence-to-enhance-teacher-training>

July 26, 2018 WPI professor and associates get \$3.3M grant to test new algebra learning game. <http://www.telegram.com/news/20180726/wpi-professor-and-associates-get-33m-grant-to-test-new-algebra-learning-game>

July 29, 2018 WPI Researchers Get \$3.3M Grant to Test Algebra Game.
<https://www.usnews.com/news/best-states/massachusetts/articles/2018-07-29/wpi-researchers-get-33m-grant-to-test-algebra-game>

June 1, 2018 I.E.S. Awards \$8.4 Million to Ed-Tech Businesses to Develop, Test Products.
<https://marketbrief.edweek.org/marketplace-k-12/e-s-awards-8-4-million-ed-tech-businesses-develop-test-products/>

Sept 2, 2017 5 math Gems. <http://www.resourceaholic.com/2017/09/gems76.html>

Aug 31, 2017 Indiana University-based educational technology startup targets students tackling algebra. https://www.eurekalert.org/pub_releases/2017-08/iu-iue083117.php

May 11, 2017 IU Researchers Create Math Learning Software to Help Students, Educators.
<https://www.aau.edu/research-scholarship/featured-research-topics/iu-researchers-create-math-learning-software-help>

May 11, 2017 100 Best Resources for Kids who Struggle with Math.
<https://homeschoolingwithdyslexia.com/tag/dyscalculia/>

Jan 25, 2017 IU scientists' math learning software gets boost from campus commercialization group
<http://inside.indiana.edu/spotlights-profiles/faculty-staff/2017-01-25-graspable-math.shtml>

Oct 6, 2016 6 Chrome Tools for Kids with Math Issues. Understood.org.
<https://www.understood.org/en/school-learning/assistive-technology/finding-an-assistive-technology/6-chrome-tools-for-kids-with-math-issues>

Feb. 10, 2016 AERA Announces Most Read Education Research Articles of 2015.
<http://www.aera.net/Newsroom/News-Releases-and-Statements/AERA-Announces-Most-Read-Education-Research-Articles-of-2015>

2015 Teacher Skill Drives Common Core Success: How Responsive Classroom Helps.
https://www.daleadershipinstitute.com/sites/daleadershipinstitute/files/common_core_success.pdf

Aug 14, 2013 Research Shows Responsive Classroom Approach Increases Use of Standards Based Math Teaching Practice.
<http://www.prnewswire.com/news-releases/research-shows-responsive-classroom-approach-increases-use-of-standards-based-math-teaching-practices-219563311.html>

April 25, 2012 Faculty, Student, Alumni Publication Awarded by NCTM.
<http://curry.virginia.edu/news/updates/faculty-student-alumni-publication-awarded-by-nctm>

WPI MEDIA COVERAGE

December 5, 2019 WPI Researchers Awarded Grant to Help K-12 Students Design Math Games

<https://www.wpi.edu/news/wpi-researchers-awarded-grant-help-k-12-students-design-math-games>

November 20, 2019 Helping to Make Math “Graspable”, WPI Researchers Guide Design of Algebra Tool for Students and Teachers

<https://www.wpi.edu/news/helping-make-math-graspable-wpi-researchers-guide-design-algebra-tool-students-and-teachers>

September 6, 2018 Giving Teachers a Better Lens to Perceive Classroom Dynamics

<https://www.wpi.edu/news/giving-teachers-better-lens-perceive-classroom-dynamic>

July 26, 2018 Struggling with Algebra? There’s an App – and Game – for That.

<https://www.wpi.edu/news/struggling-algebra-there-s-app-and-game>

July 26, 2018 Professor Erin Ottmar Studies the Process of How People Learn, Problem Solve

<https://www.wpi.edu/news/professor-erin-ottmar-studies-process-how-people-learn-problem-solve>

Jan 13, 2017 Math In Motion. My research was the cover story for WPI’s *Research Magazine*.

<https://www.wpi.edu/news/math-motion>

Dec 13, 2016 Understanding What Students Need to be Successful

<https://www.wpi.edu/news/announcements/understanding-what-students-need-be-successful-0>

2016 Video featured on WPI’s Research website. Graspable Math.

<https://www.youtube.com/watch?v=DzIF-xRKYXw>

Oct 4, 2016 NSF Awards Grant to WPI to Create Augmented Reality Math Games for Middle Schoolers. [https://www.wpi.edu/news/announcements/nsf-awards-grant-wpi-](https://www.wpi.edu/news/announcements/nsf-awards-grant-wpi-%C2%A0create-augmented-reality-math-games-middle-schoolers)

[%C2%A0create-augmented-reality-math-games-middle-schoolers](https://www.wpi.edu/news/announcements/nsf-awards-grant-wpi-%C2%A0create-augmented-reality-math-games-middle-schoolers)

Oct 6, 2016 Professor Ottmar Selected as American Educational Research Association (AERA)

Fellow. [https://www.wpi.edu/news/announcements/professor-erin-ottmar-](https://www.wpi.edu/news/announcements/professor-erin-ottmar-selected-american-educational-research-association-aura)

[selected-american-educational-research-association-aura](https://www.wpi.edu/news/announcements/professor-erin-ottmar-selected-american-educational-research-association-aura)
