

Dr. Jeremy Yi-Ming Wang, Ph.D.

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ACADEMIC HISTORY

- 2018 Ph.D., Educational Psychology (minor: Cognitive Science), University of Minnesota
Dissertation Title: "Implicit Learning in Science: Activating and Suppressing Scientific Intuitions to Enhance Conceptual Change"
- 2006 M.S.T., Secondary Teaching (emphasis: Science Teaching), Pace University
- 2004 B.S., Biology and Philosophy, Rice University

Graduate Coursework Highlights

Cognition, Computation, and Brain; Mind, Brain, and Education; Seminar in Cognition and Learning: Problem Solving; Statistical Methods for Research; Advanced Measurement; Teaching Theory and Research; Foundations of Science Education; Advanced Topics in Science Education: Conceptual Change & Nature of Science; Child Development: Cognitive Processes

Workshops Attended

Presenting Data and Information, course taught by Edward Tufte, June 2011
Pittsburgh Science of Learning Center LearnLab Summer School, July 2009

FELLOWSHIPS & AWARDS

Doctoral Dissertation Fellowship, University of Minnesota, 2014-15
Minnesota Interdisciplinary Training in Education Research (MITER) Fellowship, Institute of Education Sciences, 2008-12
Leadership Award, Department of Educational Psychology, Foundations of Education Program, 2012
Paul and Ruth Pfeiffer Award, Brown College, Rice University, 2004

PROFESSIONAL EXPERIENCE

Research Associate / Science Performance Task Writer, Dec 2016-Present, Institute for Innovative Assessment at University of Wisconsin-Madison (*remote*)

- *Designing technology-enhanced formative assessments aligned with Next Generation Science Standards (NGSS) for middle grades.*
- *Developing training materials and scoring guides for science educators.*
- *Analyzing, interpreting, and presenting qualitative and quantitative data from pilot studies.*

Instructional Technology Fellow, 2013-2014, University of Minnesota (*Minneapolis, MN*)

- *Supported faculty, instructors, and staff in the design and implementation of instructional technologies in University courses*
- *Familiarity with an array of established and emerging instructional technologies, including Moodle, Google Apps, Camtasia, and Qualtrics*

University Supervisor, 2012-2013, University of Minnesota (*Minneapolis, MN*)

- *Observed and evaluated pre-service science teacher candidates during practicum and student teaching experiences for university science education program*
- *Developed and implemented observation and evaluation forms for field use based on Minnesota Standards of Effective Practice for Teachers*
- *Provided timely and context-specific instructional guidance and support for teacher candidates*

Science Content Specialist, 2006-2008, College Entrance Examination Board (*New York, NY*)

- *Developed science test items and forms aligned to national science standards (NSES, AAAS)*
- *Analyzed data from item trials using psychometric data to assess item quality*
- *Provided content development and editing support for College Board publications, including redesign of AP science courses and assessments implementing Evidence-Centered Design (ECD) process*
- *Attended test development committee meetings for AP and SAT science subjects*
- *Organized committees of scientists, teachers, and curriculum supervisors to develop Science College Board Standards for College Success*
- *Attended professional workshops and conferences in science education research*

Administrative Assistant, 2002-2004, Journal of Optimization Theory and Applications (*Houston, TX*)

- *Assisted Editor-in-Chief in communication and organizational activities related to editorial review and publishing process for internationally recognized academic journal*

TEACHING INTERESTS

- Educational psychology
- Learning & cognition
- Human development
- Educational assessment and measurement
- Science and math education
- Environmental education
- History of education
- Teaching in multicultural contexts
- Research methods & statistics

TEACHING EXPERIENCE

Lead Instructor and Teaching Assistant, 2012-present, University of Minnesota (*Minneapolis, MN*)

- Courses taught: *Learning, Cognition, & Assessment; Child Development for Teaching & Learning; Elementary Education Content & Pedagogy-Science*
- Lab section Teaching Assistant, 2012-2013

Teaching Assistant, 2007-2008, Pace University (*New York, NY*)

- Courses Taught: *Teacher as Researcher, Language & Development of Global Perspectives*

Middle School Science Teacher, 2004-2006, New York City Board of Education (*Brooklyn, NY*)

- *Teach For America Corps Member*
- *Developed and implemented curriculum for grades 6-8 science classes with a focus in life, physical, and Earth sciences*
- *Managed various classroom systems, including grading, homework, group work, laboratories and projects*
- *Maintained communication with parents and administrators to improve student achievement*
- *Attended school-, city-, and nation-wide professional development sessions to enhance knowledge and skills*

Laboratory Teaching Assistant, 2003, Rice University (*Houston, TX*)

- Courses taught: *Advanced Lab Module in Protein Purification*

Workshop Presentations

- Instructor, 1.5-hour presentation given at Global Teacher Education Program, University of Minnesota, January 2011. *Principles of modeling for elementary education.*
- Instructor, 1-hour presentation given at BrainU Symposium, University of Minnesota, July 2010. *Executive function and science learning.*
- Instructor, 1-hour interactive presentation given at 4H Club, St. Paul, February 2010. *Modeling global climate change.*

RESEARCH POSITIONS

Research Assistant, 2012-2014

Design High

Daniel Jasper, P.I.

College of Design Dean's Investment Grant

- *Developed assessment and evaluation plan and procedures for a high school graphic design curriculum and professional development program.*

Graduate Assistant, 2010-2012

CYCLES: Teachers Discovering Climate Change from a Native Perspective

Gillian Roehrig, P.I.

NASA Innovations in Climate Education (NICE) grant

- *Developed and implemented NASA-funded professional development program on climate change education for teachers in Native American communities.*
- *Evaluated changes in teachers' attitudes and conceptual knowledge of climate change.*
- *Worked collaboratively with LacCore Laboratory to develop a flexible curriculum on lake coring for grades 6-12.*

Graduate Assistant, 2008-2009

Reach for the Sky: Integrating Technology into STEM Outcomes for American Indian Youth

Gillian Roehrig, P.I., Tamara Moore and Stephan Carlson, Co-P.I.s

National Science Foundation ITEST grant

- *Planned and delivered summer program curriculum for students on the White Earth Nation reservation.*
- *Obtained training and resources from the Science Museum of Minnesota (SMM) and National Center for Earth-surface Dynamics (NCED) to successfully deliver curriculum on Elwah Dam removal.*

Lab Assistant, 2003

Alzheimer's Research Center, St. Paul, MN

William H. Frey II, Director

- *Implemented lab procedures for testing the effectiveness of naturally occurring compounds for treating neuronal damage related to Alzheimer's disease.*

PUBLICATIONS

Varma, K., Varma, S., VanBoekel, M., & Wang, J. (in press). Studying individual differences in a middle school classroom context: Considering research design, student experience, and teacher knowledge. *Sage Research Methods Cases*.

Kern, A. L., Roehrig, G. H., Bhattacharya, D., Wang, J.Y., Finley, F., Reynolds, B., & Nam, Y. (2015). Drawing on place and culture in climate change education in Native communities. In M. Mueller & D. Tippins (Eds.), *EcoJustice, Citizen Science, and Youth Activism: Situated Tensions for Science Education*.

Mensink, M. C., Lewis, M. R., & Wang, J. Y. (2014). Informing the design of future literacy technologies with theories of cognitive science. In Mehdi Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (3rd Edition). Hershey, PA: IGI Global.

CONFERENCE PRESENTATIONS

Wang, J. Y. & Varma, K. (2015, April). Theoretical and practical implications of implicit learning for science education and conceptual change. Paper to be presented at National Association for Research in Science Teaching Annual Conference, Chicago, IL.

Wang, J. Y., Varma, S. A., & Varma, K. (2012, April). The role of instructional scaffolding and executive function in the development of the concept of density. Paper presented at American Educational Research Association Annual Conference, Vancouver, BC, Canada.

Liu, S., Wang, J. Y., Varma, K., & Roehrig, G. (2012, March). In-service teachers' attitudes and beliefs about climate change. Paper presented at National Association for Research in Science Teaching Annual Conference, Indianapolis, IN.

Roehrig, G., Kern, A., Varma, K., Bhattacharya, D., Liu, S., Nam, Y., Tierney, B., Wang, J. Y. (2012, January). Enhancing teachers' understanding of climate change for teaching Native American students. Paper presented at the Association for Science Teacher Education, Clearwater Beach, FL.

Wang, J. Y., Varma, S.A., Varma, K. (2010, June). A group-administered card-sorting task for examining executive function in students. Poster presented at Institute of Education Sciences Annual Conference, Washington, DC.

Wang, J. Y., Moore, T., Plumb, S., & Roehrig, G. (2009, October). A student task model method for assessing and improving a model-eliciting activity. Proceedings of the 39th ASEE/IEEE Frontiers in Education Conference, San Antonio, Texas.

CURRICULA

Getting to the Core: Understanding Lakes through Sediment Coring

Grade 7-14 curriculum developed in partnership with LacCore Research Laboratory
Recommended by NASA Earth & Space Science Education Product Review (Winter 2013)

SERVICE

University of Minnesota

- Minnesota Residency Program Steering Committee, 2016-2017
- Member of Licensed School Professionals Assembly, 2014
- Co-President, GradSEHD, 2011-2012
- Student Representative, Psychological Foundations Faculty Committee, Department of Educational Psychology, 2011-2012
- Vice President of Internal Relations, Council of Graduate Students (COGS), 2009-2011
- Student Representative, Graduate Studies Committee, Department of Curriculum and Instruction, 2009-2010
- Mentor, President's Distinguished Faculty Mentor Program, 2009

Mid-Continent Oceanographic Institute (non-profit tutoring organization)

- Non-profit organization that recruits and trains volunteers to provide in-school and after-school tutoring and writing support for Twin Cities students ages 6-18.
- Board Chair, 2013-2015
- Board Member, 2010-present
- Training and Evaluation Committee, 2009-present

Minnesota Department of Education

- Storyboard and item writer, MCA-III Science, 2009-present
- Review Panelist, MCA-III and MTAS Science storyboard, item and data review, 2009-present

Conference Reviewer

- American Educational Research Association (AERA)
 - Division C – Learning and Instruction, Section 4: Science
 - SIG – Cognition and Assessment
- International Conference of the Learning Sciences (ICLS)
- National Association for Research in Science Teaching (NARST)
 - Strands 1 and 10

PROFESSIONAL AFFILIATIONS

American Educational Research Association
National Science Teachers Association
National Association for Research in Science Teaching
Society for Research in Educational Effectiveness
STEM Education Center, University of Minnesota
Center for Cognitive Sciences, University of Minnesota