KIHYUN "KELLY" RYOO

Curriculum Vitae

Learning Sciences and Psychological Studies
School of Education
University of North Carolina, Chapel Hill
Chapel Hill, NC 27599-3500

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EDUCATION

2004-2009 **Ph.D.**, Graduate School of Education, Stanford University
Learning Sciences and Technology Design with a specialization in Science Education

2003-2004 **M.A.**, Graduate School of Education, Stanford University
Learning, Design and Technology

1998-2002 **B.A.**, College of Education, Ewha Womans University, Korea
Health Education with a Secondary Teaching Credential in Health Education
Valedictorian with Highest Academic Honors

PROFESSIONAL EXPERIENCE

Spring 2019 **Interim Director**
MA in Educational Innovation, Technology & Entrepreneurship (MEITE)
School of Education, University of North Carolina, Chapel Hill

2018-present **Associate Professor of Learning Sciences (with Tenure)**
Learning Sciences and Psychological Studies Program (LSPS)
School of Education, University of North Carolina, Chapel Hill

2012-2018 **Assistant Professor of Learning Sciences**
Learning Sciences and Psychological Studies Program (LSPS)
School of Education, University of North Carolina, Chapel Hill

2009-2012 **Postdoctoral Scholar**
Graduate School of Education, University of California, Berkeley

2010-2011 **Part-time Lecturer** (for online/videoconference courses)
Department of Educational Technology, Ewha Womans University, Korea

2004-2009 **Research Assistant**
Graduate School of Education, Stanford University

2006-2008 **Program Coordinator & Instructor**
Learning, Design and Technology MA Program
Graduate School of Education, Stanford University

2003-2004 **Research Assistant and Instructional Designer**
Stanford University Medical Media & Information Technologies (SUMMIT)

HONORS, AWARDS, AND FELLOWSHIPS

2016	National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award
2016	Nomination for Andrew Carnegie Fellows Program, School of Education, University of North Carolina, Chapel Hill
2015	Jhumki Basu Scholars Award, National Association of Research in Science Teaching (NARST)
2015	NARST/ National Science Teachers Association (NSTA) "Research worth Reading" Recognition for paper entitled "*Designing guidance for interpreting dynamic visualizations: Generating versus reading explanations*" (Ryoo & Linn, 2014)
2014	National Academy of Education/Spencer (NAEd) Postdoctoral Fellowship
2013	American Educational Research Association (AERA) Division C New Faculty Mentoring, Selected Participant with Travel Grant
2009	Journal of Research in Science Teaching (JRST) Award (for the most significant publication published in JRST in 2008-2009), NARST
2009	AERA Minority Dissertation Fellowship in Education Research (declined)
2009	AERA Division C Graduate Student Seminar, Selected Participant with Travel Grant
2008	NARST Equity and Ethics Scholarship
2008	Nomination for Stanford Lieberman Fellowship, Stanford University
2005-2008	Graduate School of Education Travel Fellowship, Stanford University
2004-2005	Wagner Fellowship, Stanford University
2002	Valedictorian with Highest Academic Honors, Ewha Womans University, Korea
1998-2002	Honor Scholarships and Dean's List, Ewha Womans University, Korea

GRANTS

Under Review	***Principal Investigator***: Adaptive Intelligent Models (AIM) to Promote Science Learning for Linguistically Diverse Students **UNC Idea Grant, University of North Carolina, Chapel Hill** Amount: $19,995
2021	***Principal Investigator***: Improving Science Learning for Linguistically Diverse Students Using Automated Feedback and Data Visualizations (Co-PIs: Sayamindu Dasgupta, Nianbo Dong) **School of Education (SOE) Seed Grant, University of North Carolina, Chapel Hill** Amount: $10,000

2018-2021 ***Co-Principal Investigator***: NSF ADVANCE Adaptation: Targeting Equity in Access to Mentoring (TEAM) ADVANCE (PI: Erin Malloy)
National Science Foundation
Amount: $989,541

2016-2021 ***Principal Investigator*:** CAREER: Making Science Visible: Using Visualization Technology to Support Linguistically Diverse Middle School Students' Learning in Physical and Life Sciences
National Science Foundation
Amount: $674,418

2016-2017 ***Principal Investigator*:** Research Experiences for Undergraduates (REU) Supplement for CAREER: Making Science Visible (DRL #1552114)
National Science Foundation
Amount: $9,223

2016 Course Development Grant
Makerspace Initiative at the University of North Carolina, Chapel Hill
Amount: $6,000

2014-2016 ***Principal Investigator*:** Designing Effective Guidance for Visualization Technologies to Help English Language Learners Succeed in Mainstream Science Classrooms
National Academy of Education (NAEd)/Spencer Foundation
Amount: $55,000

2013-2015 ***Principal Investigator*:** Visualizing Science to Support English Language Learners' Science Learning in Linguistically Heterogeneous Classrooms
Spencer Foundation
Amount: $44,451

2013-2014 ***Principal Investigator*:** Visualizing Science to Support English Language Learners' Science Learning in Linguistically Heterogeneous Classrooms
Junior Faculty Development Award, University of North Carolina at Chapel Hill
Amount: $7,250

2008-2009 ***Principal Investigator*:** Promoting Science Learning for Language Minority Students through a Technology-Enhanced Instructional Approach
Spencer Foundation Research Training Grant, Stanford University
Amount: $6,500

2008-2009 ***Principal Investigator*:** Closing the Science Achievement Gap: Increasing Equity for Culturally and Linguistically Diverse Students through a Technology-Enhanced Intervention in the Science Classroom
Vice Provost for Graduate Education Diversity Dissertation Grant, Stanford University
Amount: $5,000

PUBLICATIONS (Graduate students are underlined and undergraduate students are *.)

Refereed Journal Articles

Ryoo, K. (under review). The effects of real-time adaptive feedback in a modeling tool on linguistically diverse students' understanding of science.

Ryoo, K., & Bedell, K. (2019). Supporting linguistically diverse students' science learning with dynamic visualizations through discourse-rich practices. *Journal of Research in Science Teaching, 56*(3), 270-301.

Ryoo, K., Bedell, K. & Swearingen, A. (2018). Promoting linguistically diverse students' short-term and long-term understanding of chemical phenomena using visualizations. *Journal of Science Education and Technology, 27*(6), 508-522.

Ryoo, K., Toutkoushian, E., & Bedell, K. (2018). Exploring different types of assessment items to elicit linguistically diverse students' understanding of energy and matter in chemistry. *Chemistry Education Research and Practice*, *19*(1), 149-166.

Ryoo, K., & Bedell, K. (2017). The effects of visualizations on linguistically diverse students' understanding of energy and matter in life science. *Journal of Research in Science Teaching, 54*(10), 1274-1301.

Ryoo, K., & Linn, M.C. (2016). Designing automated guidance for concept diagrams in inquiry instruction. *Journal of Research in Science Teaching*, *53*(7), 1003-1035.

Gerard, L.F., **Ryoo, K.**, McElhaney, K.W., Liu, O.L., Rafferty, A.N., & Linn, M.C. (2016). Automated guidance for student inquiry. *Journal of Educational Psychology*, *108*(1), 60-81.

Liu, O.L., **Ryoo, K.**, Sato, E., Svihla, V., & Linn, M.C. (2015). Measuring knowledge integration learning of energy topics: A Two-Year Longitudinal Study. *International Journal of Science Education, 37*(7), 1-23.

Ryoo, K. (2015). Teaching science through the language of students in technology-enhanced instruction. *Journal of Science Education and Technology*, *24*(1), 29-42.

Ryoo, K., & Linn, M.C. (2015). Designing and validating assessments of complex thinking in science. *Theory into Practice, 54*(3), 238-254.

Linn, M.C., Gerard, L.F., **Ryoo, K.**, McElhaney, M., Liu, O.L., & Rafferty, A. (2014). Computer-guided inquiry to improve science learning. *Science*, *344*(6180), 155-156.

Ryoo, K., & Linn, M.C. (2014). Designing guidance for interpreting dynamic visualizations: Generating vs. reading explanations. *Journal of Research in Science Teaching, 51*(2), 147-174. (selected as the 2015 NARST/NSTA's Research Worth Reading)

Ryoo, K., & Linn, M.C. (2012). Can dynamic visualizations improve middle school students' understanding of energy in photosynthesis? *Journal of Research in Science Teaching, 49*(2), 218-243.

Brown, B., **Ryoo, K.**, & Rodriguez, J. (2010). Pathway towards fluency: Using 'disaggregate instruction' to promote science literacy. *International Journal of Science Education*, *32*(11), 1465-1493.

Brown, B., & **Ryoo, K.** (2008). Teaching science as a language: A "content-first" approach to science teaching. *Journal of Research in Science Teaching, 45*(5), 529-553. (received the Journal of Research in Science Teaching Award)

Manuscripts in Preparation

Ryoo, K. (in preparation). *How can automated feedback help English learners develop and use models in a technology-enhanced collaborative learning environment?*

Ryoo, K. (in preparation). *English learners' progression in reasoning about the concepts of energy and matter in visualization-rich inquiry instruction.*

Ryoo, K., Chiavacci, S.*, & Metcalf, L.E. (in preparation). *How models and written explanations can measure different levels of students' understanding of chemical reactions.*

Ryoo, K., Toutkoushian, E., & Clark, K. (in preparation). *Developing and using models to engage English learners in science practices.*

Toutkoushian, E., & **Ryoo, K.** (in preparation). *Using learning analytics to explore middle school students' science learning patterns with simulations.*

Book Chapter

Ryoo, K., & Sato, M.E. (2015). Blogs for learning. In R. Gunstone (Ed.), *Encyclopedia of Science Education*, pp. 130-132, Springer Dordrecht, Heidelberg, New York, London.

Refereed Conference Proceedings

Toutkoushian, E., **Ryoo, K.**, Bedell, K., Linn, M.C., & Swearingen, A. (2018). Leveraging Log Data from Simulations to Understand Students' Knowledge Integration Processes. To appear in *Proceedings of the 13th International Conference for the Learning Sciences*. London, UK: International Society of the Learning Sciences.

Ryoo, K., & Linn, M.C. (2014). Comparison of Specific and Knowledge Integration Automated Guidance for Concept Diagrams in Inquiry Instruction. *Polman, J. L., Kyza, E. A., O'Neill, D. K., Tabak, I., Penuel, W. R., Jurow, A. S., O'Connor, K., Lee, T., & D'Amico, L. (Eds.), Learning and becoming in practice, proceedings of the 11th International Conference for the Learning Sciences* (Vol. 3, pp. 1585-1586). Boulder, CO: International Society of the Learning Sciences.

Ryoo, K., & Linn, M.C. (2010). Students' Progress in Understanding Energy Concepts in Photosynthesis using Visualizations. In K. Gomez, L. Lyons & J. Radinsky (Eds.), *Learning in the Disciplines, proceedings of the 9th International Conference of the Learning Sciences* (Vol. 2, pp. 480-481). Chicago, IL: International Society of the Learning Sciences.

Svihla, V., Gerard, L., **Ryoo, K.**, Sato, E., Visintainer, T., Swanson, H., Linn, M.C., Lee, H.S., Liu, O. L. (2010). Energy across the Curriculum: Cumulative Learning Using Embedded Assessment Results. In K. Gomez, L. Lyons & J. Radinsky (Eds.), *Learning in the Disciplines, proceedings of the 9th International Conference of the Learning Sciences* (Vol. 2, pp. 253-259). Chicago, IL: International Society of the Learning Sciences.

Refereed Conference Papers and Presentations

Hutchinson, M., Metcalf, L., **Ryoo, K.** (2019). Effects of dynamic visualizations on linguistically diverse students' accurate and alternative concepts of chemical phenomena. Paper presented at the National Association for Research in Science Teaching (NARST) annual meeting, Baltimore, MD.

Ryoo, K., Hutchinson, M., *Desmond, M., & Toutkoushian, E. (2019). The effects of different forms of adaptive feedback on diverse students' science learning. Paper presented at the American Educational Research Association (AERA) annual meeting, Toronto, Canada.

Toutkoushian, E., & **Ryoo, K.** (2018). Developing a Method to Use Log Files to Understand NGSS-Aligned Science Learning. Poster presented at the International Educational Data Mining annual meeting, Buffalo, NY.

Toutkoushian, E., **Ryoo, K.**, Bedell, K., Linn, M.C., & Swearingen, A. (2018). Leveraging Log Data from Simulations to Understand Students' Knowledge Integration Processes. Poster presented at the 13*th International Conference of the Learning Sciences* (ICLS), London, UK.

Bedell, K. & **Ryoo, K.** (2018). *Investigating teacher effects on English learners' chemistry understanding during visualization-rich inquiry instruction*. Paper presented at the NARST annual meeting, Atlanta, GA.

Bedell, K. & **Ryoo, K.** (2018). *Linguistically-diverse pairs' collaborative discourse patterns in the context of visualization-rich inquiry-based learning*. Poster presented at the NARST annual meeting, Atlanta, GA.

Ryoo, K. (2018). *Using knowledge integration to support English language learners in science practices*. Poster presented in the Knowledge Integration: Trajectories, Opportunities and Future Directions symposium at the AERA annual meeting, New York, NY.

Bedell, K., **Ryoo, K.**, & Swearingen, A. (2018). *Using visualizations to create equitable opportunities for linguistically diverse students to engage in science practices*. Paper presented at the AERA annual meeting, New York, NY.

Toutkoushian, E., Swearingen, A., **Ryoo, K.**, & Plumley, R. (2018). *Leveraging log data from simulations in technology-enhanced learning environments to understand students' learning patterns*. Paper presented at the AERA annual meeting, New York, NY.

Toutkoushian, E., & **Ryoo, K.** (2017). *Understanding patterns of students' science learning using log data from visualizations in technology-enhanced instruction*. Poster presented at the National Council for Measurement in Education (NCME) Special Conference on Classroom Assessment and Large-Scale Psychometrics: The Twain Shall Meet, University of Kansas in Lawrence, Lawrence, KS.

Ryoo, K., Bedell, K., & Toutkoushian, E. (2017). *Making sense of science using dynamic visualizations: Creating discourse-rich opportunities for linguistically diverse students*. Paper presented at the AERA annual meeting, San Antonio, TX.

Toutkoushian, E., Swearingen, A., **Ryoo, K.**, & Bedell, K. (2017). *Exploring different types of assessment items to elicit linguistically diverse students' understanding of energy and matter in chemistry*. Paper presented at the AERA annual meeting, San Antonio, TX.

Bedell, K., **Ryoo, K.**, & Swearingen, A. (2016). *Supporting English language learners' learning with dynamic visualizations: Generating versus reading explanations.* Poster presented at the NARST annual meeting, Baltimore, MD.

Ryoo, K., & Bedell, K. (2015). *Re-envisioning Science: Using technology to support ELLs' science and language learning.* Paper presented at the annual meeting of the North Carolina Science Teachers' Association (NCSTA), Winston-Salem, NC.

Linn, M.C., Gerard, L., Liu, O.L., **Ryoo, K.**, Rafferty, A., &Vitale, J. (2015). *Using automated scoring to promote knowledge integration in science*. Paper presented in a symposium at the AERA annual meeting, Chicago, IL.

Ryoo, K. (2015). *Visualizing science to support English learners' understanding of energy and matter flows in life science*. Paper presented at the AERA annual meeting, Chicago, IL.

Ryoo, K. (2015). *Perspective on cumulative learning of energy concepts with automated scoring.* Paper presented in a symposium at the NARST annual meeting, Chicago, IL.

Ryoo, K., & Bedell, K. (2015). *Visualizing energy and matter transformations for linguistically diverse students*. Paper presented at the NARST annual meeting, Chicago, IL.

Toutkoushian, E., Kung, M., & **Ryoo, K.** (2015). *Transforming linguistically diverse students' misconceptions about matter and energy flow using visualizations*. Paper presented at the NARST annual meeting, Chicago, IL.

Toutkoushian, E., & **Ryoo, K.** (2015). *Effecting English language learners' misconceptions about energy and matter using dynamic visualizations.* Paper presented at the 18th Annual Southeastern Association of Educational Studies (SEAES) Conference, Chapel Hill, NC.

Ryoo, K., & Linn, M.C. (2014). *Comparison of Specific and Knowledge Integration Automated Guidance for Concept Diagrams in Inquiry Instruction*. Poster presented at the International Conference of the Learning Sciences (ICLS) meeting, Boulder, CO.

Ryoo, K., & Linn, M.C. (2014). *Designing automated guidance to improve diverse students' understanding of energy flow*. Paper presented at the AERA annual meeting, Philadelphia, PA.

Linn, M.C., Liu, O.L., **Ryoo, K.**, Svihla, V., & Sato, E. (2013). *Interpreting student progress from embedded assessments: Expanding item types for assessing inquiry*. Paper presented in the Big Data symposium at the National Council on Measurement in Education (NCME) annual meeting, San Francisco, CA.

Liu, O.L., **Ryoo, K.**, Sato, E., Svihla, V., & Linn, M.C. (2013). *Designing assessments to measure cumulative learning of energy topics.* Paper presented at the AERA annual meeting, San Francisco, CA.

Ryoo, K. (2013). *Automated assessment using student-generated concept diagrams*. Paper presented in the symposium at the NARST annual meeting, Rio Grande, Puerto Rico.

Ryoo, K. (co-organizer), Gerard, L. (co-organizer), Linn, M.C. (chair), & Squire, K. (discussant) et al. (2013). *Automated scoring and adaptive guidance.* Structured poster session presented at the AERA annual meeting, San Francisco, CA.

Ryoo, K., & Linn, M.C. (2013). *Generating versus reading explanations: Helping students distinguish among ideas in dynamic visualizations.* Paper presented at the AERA annual meeting, San Francisco, CA.

Ryoo, K., & Linn, M.C. (2012). *Designing assessments to track student progress in understanding the complex roles of energy in photosynthesis.* Paper presented at the AERA annual meeting, Vancouver, Canada.

Linn, M.C., Liu, O.L., **Ryoo, K.**, & Madhock, J. (2012). *Teaching and assessing scientific thinking: Online inquiry units with automated scoring.* Paper presented at the AERA annual meeting, Vancouver, Canada.

Linn, M.C., Liu, O.L., Slotta, J., & **Ryoo, K.** (2011). *Assessments as auto-scored inquiry activities in the web-based inquiry science environment.* Paper presented at the European Science Education Research Association conference, Lyon, France.

Ryoo, K. (2011). *Teaching science through the language of students in technology-enhanced instruction*. Paper presented at the AERA annual meeting, New Orleans, LA.

Ryoo, K., & Linn, M.C. (2011). *Visualizing energy transformation at the molecular level: Promoting middle school students' understanding of energy in photosynthesis*. Paper presented at the AERA annual meeting, New Orleans, LA.

Ryoo, K., & Linn, M.C. (2010). *Cumulative learning using embedded assessment results*. Poster presented in the Interactive Visualizations, Simulations, and Games for Science and Math Learning Symposium at the NSF Discovery Research K-12 PI Meeting, Washington, D.C.

Gerard, L., **Ryoo, K.**, Svihla, V., Sato, E., & Swanson, H. (2010). *Teacher perspectives on cumulative learning*. Poster presented at the ICLS meeting, Chicago, IL.

Ryoo, K. (2010). *New assessments of cumulative learning in photosynthesis*. Poster presented at the ICLS meeting, Chicago, IL.

Ryoo, K., & Linn, M.C. (2010). *Students' progress in understanding energy concepts in photosynthesis using visualizations.* Poster presented at the ICLS meeting, Chicago, IL.

Ryoo, K. (2010). *Learning science, talking science: The impact of a technology-enhanced curriculum on students' science learning in linguistically diverse classrooms*. Paper presented at the AERA annual meeting, Denver, CO.

Ryoo, K. (2010). *Integrating innovative technologies in inquiry science for English language learners.* Paper presented at the International Conference of the Korean Society for Educational Technology (KSET), Seoul, Korea.

Ryoo, K., & Linn, M.C. (2010). *Promoting students' integrated understanding of energy in photosynthesis using a technology-enhanced science curriculum*. Paper presented at the International Conference of KSET, Seoul, Korea.

Ryoo, K., & Linn, M.C. (2009). *Integrating innovative technologies in inquiry science: Professional development for teachers and the impacts on teacher and student learning*. Paper presented at the NSF Discovery Research K-12 PI Meeting, Washington, D.C.

Ryoo, K. (2009). *Closing the science achievement gap: Promoting science learning for English language learners*. Paper presented at the AERA annual meeting, San Diego, CA.

Ryoo, K. (2009). *Teaching science to English language learners through the language of students*. Paper presented at the NARST annual meeting, Garden Grove, CA.

Ryoo, K. (2008). *Effects of computer simulation on English language learners' science learning*. Paper presented at the NARST annual meeting, Baltimore, MD.

Ryoo, K. (2008). *Collaborative dialogue: How to improve language minority students' use of scientific discourse*. Poster presented at the AERA annual meeting, New York, NY.

Ryoo, K., & Brown, B. (2007). *Separating the language and content of science: An examination of minority students' science learning*. Paper presented at the AERA annual meeting, Chicago, IL.

Brown, B., **Ryoo, K.**, & Rodriguez, J. (2007). *Speaking towards understanding: Learning to be literate speakers and writers of science*. Paper presented at the NARST annual meeting, New Orleans, LA.

Brown, B. & **Ryoo, K.** (2006). *Developing conceptual continuity for science literacy in a web-based learning environment*. Paper presented at the NARST annual meeting, San Francisco, CA.

Invited Presentations and Lectures

Ryoo, K. (2018). *Leveraging Technology to Support Diverse Learners.* Invited to serve as a panelist with Richard, G. (Panel), Shelton, J. (Panel), and Linn, M. (Chair) at the National Academy of Education (NAEd) Annual Meeting, Washington, DC.

Ryoo, K. (2018). *Making Science Visible for Linguistically Diverse Students through Visualization Technologies.* Invited to present at the Presidential Session at the 2018 Korean American Educational Researchers Association (KAERA), New York, NY.

Ryoo, K. (2016). *CAREER: Making Science Visible.* Invited to present at the NSF Broader Impacts Symposium, UNC Research Office of Research Development, University of North Carolina, Chapel Hill.

Ryoo, K. (2016). *Designing Guidance to Support English Language Learners' Science Learning with Dynamic Visualizations*. Invited to present at the Jhumki Basu Scholars Symposium at the NARST annual meeting, Baltimore, MD.

Ryoo, K. (2012). *Technology-Enhanced Science Learning for Culturally and Linguistically Diverse Students.* Presentation given to the UNC School of Education Research Brownbag, University of North Carolina, Chapel Hill.

Ryoo, K. (2012). *Supporting Linguistically Diverse Students in Science: The Promise of Technology*. Presentation at the UNC School of Education Foundation Board Meeting, University of North Carolina, Chapel Hill.

Ryoo, K. (2012). *Supporting Linguistically Diverse Students in Science: The Promise of Technology*. Presentation given to the Science Education Research Group, School of Education, Stanford University.

Ryoo, K. (2012). *Design-based Research in Technology-Enhanced Learning in Science*. Presentation at the Learning Sciences and Technology Design Doctoral Seminar, Stanford University.

Ryoo, K. (2012). *Making Science Accessible for All Learners*. Presentation at the Science and Mathematics Education: Designing Educational Technologies course, University of California at Berkeley.

Ryoo, K. (2010). *Technology-Enhanced Learning in Science*. Presentation given to the Department of Educational Technology, Ewha Womans University, Seoul, Korea.

Ryoo, K. (2010). *Designing and Evaluating Effective Technology-Enhanced Instruction for Science*. Presentation at the Learning Design Workshop, Beijing Normal University, Beijing, China.

Ryoo, K. (2010). *Designing Effective Technology-Enhanced Instruction for Science*. Presentation at the Introduction of Educational Technology course, Ewha Womans University, Seoul, Korea.

Ryoo, K. (2009). *Learning Science, Talking Science: Promoting Equity for English Language Learners in Science Education through Technology-Enhanced Instruction*. Presentation at the Equity and Ethics in Science Education Symposium at the NARST annual meeting, Garden Grove, CA.

Non-refereed Publication

1. Svihla, V., **Ryoo, K.**, Linn, M. C., & Dorsey, C. (2011). Connecting energy across the curriculum. *@Concord Newsletter, 15*(1), 12-13.

TEACHING ACTIVITIES

Courses Taught

University of North Carolina, Chapel Hill (2012-present)

Doctoral Courses

EDUC871/890 Design of Technology-Enhanced Learning Environments, Spring 2016, Fall 2017, Fall 2018

The following students received a $25,000 grant from the UNC Eshelman Institute for Innovation based on their prototypes developed during this class.

Kayley Lyons & Nikki Lobczowski (Spring 2016)

- Collabucate: Your Team's Personal Collaboration Coach

Michael Wolcott (Fall 2017)

- Escape the Norm: Escape Rooms for Learner Engagement and Collaboration

EDUC824 Fundamentals of Educational Research, Spring 2017

EDUC890 Collaborative Design and Research of Technology-Enhanced Learning Environments, Spring 2014

EDUC817 Introduction to Educational Research, Fall 2013, Fall 2014

EDUC792 Emerging Technologies: Collaborative Design and Research of Technology-Enhanced Learning Environments, Spring 2013

Masters Courses

EDUC790 Design of Emerging Technologies for Education, Spring 2018, Spring 2019

The following students received a $5,00 grant from the UNC Social Innovation Challenge and Launch Chapel Hill based on their prototypes developed during this class.

Daniel Dinkins (class partner: Rocky Moon) (Spring 2019)

- Quest to College (UNC Launch Chapel Hill Grant)

Alex Hoppe, Sam Cullum, Jason Straus (Spring 2019)

- AR Waste (UNC Social Innovation Challenge grant)

EDUC680 Introduction to Educational Research, Spring 2013

EDMX708 Teacher as Researcher I, Fall 2013 (for in-service teachers)

EDUX699 Research Methods, Fall 2012

Undergraduate Course

EDUC390 Design of Emerging Technologies for Education, Spring 2018

Lecturer, Ewha Womans University, Seoul, Korea (2010-2011)

Undergraduate Courses

35189 Education for the Future (Videoconferencing course), Spring 2010, Spring 2011

21789 Educational Technology (Videoconferencing and online course), Fall 2011

Instructor, Stanford University (2006-2008)

Masters Courses

EDUC229D Learning, Design and Technology MA Seminar D, Summer 2007, Summer 2008

EDUC229C Learning, Design and Technology MA Seminar C, Spring 2007, Spring 2008

EDUC229B Learning, Design and Technology MA Seminar B, Winter 2006, Winter 2007

EDUC229A Learning, Design and Technology MA Seminar A, Fall 2006, Fall 2007

Teaching Assistant, Stanford University (2006, 2008, 2009)

Doctoral Courses

EDUC333B Imagining the Future of Learning, Winter 2009

EDUC333A Understanding Learning Environments, Fall 2008

Masters Courses

EDUC229D Learning, Design and Technology MA Seminar D, Summer 2006

Undergraduate Student Mentoring

Addison Oliver, Biology (Spring 2019-present)

- UNC Summer Undergraduate Research Fellowship (SURF, Summer 2019)

Maureen Desmond, Biomedical Engineering (Spring 2018-present)

- UNC Summer Undergraduate Research Fellowship (SURF, Summer 2018)
- *Designing automated feedback to support English language learners' science learning*, Poster presented at the UNC Celebration of Undergraduate Research.

Joshua Francisco, Statistics and Analytics/Computer Science (Spring 2018-present)

- Brooks Foundation Summer Research Fellowship

- *Using log data to predict middle school students' science learning in a simulation*, Poster presented at the UNC Celebration of Undergraduate Research.

Sarah Chiavacci, Chemistry (Fall 2017-present)

- Using Multimodal assessments to Measure Middle school students' Understanding of chemical reactions, Poster presented at the UNC Celebration of Undergraduate Research.

Andrew Tanaka, Computer Science (Fall 2016- Summer 2018)

- NSF REU Fellow (2017)

Sweta Karlekar, Biomedical & Health Sciences Engineering (Fall 2016-Spring 2017)

- NSF REU Fellow (2016-2017)
- *Exploring a flexible computational method for comparing massive interaction data from science visualizations*, Poster presented at the UNC Celebration of Undergraduate Research.

PROFESSIONAL SERVICE

Professional Field

2018-present	Editorial Board, Journal of Research in Science Teaching (JRST)
2018	Institute of Education Sciences (IES) Review Panel
2016-present	Ad Hoc Reviewer, Science Education
2016-2018	Ad Hoc Website Provider Committee, NARST
2016	National Science Foundation (NSF) Review Panel
2016	Mentor, NARST Mentor & Mentee Nexus
2014-present	Ad Hoc Reviewer, Review of Educational Research
2014-2018	Ad Hoc Reviewer, Journal of Science Education and Technology
2013-present	Ad Hoc Reviewer, Instructional Science
2012-present	Ad Hoc Reviewer, Educational Researcher
2012-present	Ad Hoc Reviewer, Journal of Research in Science Teaching
2007-2017	Proposal Reviewer, AERA, NARST, and ICLS

Academic Service

Spring 2019	**Interim Director,** MA in Educational Innovation, Technology & Entrepreneurship (MEITE), School of Education, University of North Carolina, Chapel Hill
2018-present	**Chair,** School Advisory Council (SAC), School of Education, University of North Carolina, Chapel Hill
2018-2019	**Search Committee Chair,** Advisor search committee for Educational Innovation, Technology, and Entrepreneurship (MEITE) MA Program, School of Education, University of North Carolina, Chapel Hill

2018-2019	**Search Committee Member**, Faculty search committee for Open Rank Professor of Learning Sciences, School of Education, University of North Carolina, Chapel Hill
2018	**Faculty Annual Review Ad-Hoc Committee Member,** School of Education, University of North Carolina, Chapel Hill
2017-2018	**Search Committee Member**, Faculty search committee for Open Rank Professor of Learning Sciences, School of Education, University of North Carolina, Chapel Hill
2017-2018	**Search Committee Member**, Faculty search committee for Director of MEITE Program, School of Education, University of North Carolina, Chapel Hill
2017	**Panel**, UNC-NSF Day Workshop Lunch Panel, Office of Research Development, University of North Carolina, Chapel Hill
2017-present	**NSF-CAREER Mentor for Junior Faculty**, UNC NSF Learning Community, University of North Carolina, Chapel Hill
2016-present	**Member**, UNC Campus Creator Space & Makerspace Working Group, University of North Carolina, Chapel Hill
2015-2017	**Advisory Board Member**, LEARN NC, University of North Carolina, Chapel Hill
2013-present	**Steering Committee Member**, MEITE MA Program, University of North Carolina, Chapel Hill
2013-2014	**Search Committee Member**, Faculty search committee for Open Rank Professor of Literacy Education, University of North Carolina, Chapel Hill
2012-present	**Committee Member**, School of Education Technology Advisory Committee, University of North Carolina, Chapel Hill
2009-2012	**Committee Member**, Professional Development Workshop for Science Teachers Technology Enhanced Learning in Science (TELS) Center, University of California, Berkeley
2008-2009	**Committee Member**, Stanford University School of Education (SUSE) Dissertation Support Grant (DGS) Advisory Committee, Stanford University
2008	**Organizer**, Learning, Design and Technology K-12 Workshop for Teachers, Stanford University
2006-2008	**Committee Member**, Learning, Design and Technology MA Program Admissions Review Committee, Stanford University

H. PROFESSIONAL ASSOCIATIONS

2007-present	American Educational Research Association (AERA)
2007-present	International Society of the Learning Sciences (ISLS)
2006-present	National Association of Research in Science Teaching (NARST)

J. MEDIA RECOGNITION

UNC Gazette, *"*National Science Foundation grant will strengthen faculty mentoring in STEM," November 14, 2018

Chancellor's Focus Carolina, Focus Carolina: Kelly Ryoo," November 5, 2018

UNC Endeavors, "Bringing Science Lessons to Life," by Alyssa LaFaro, August 9, 2016

News 14 Carolina*,* "UNC researcher wins grant for computer-based teaching tool," by Julie Fertig, January 18, 2014

Institute of Education Sciences, "WWC Quick Review of the Article "Teaching Science as a Language: A 'Content-First' Approach to Science Teaching," by What Works Clearinghouse, December 2008

Stanford Report, "Using Everyday Language to Teach Science May Help Students Learn, Study Finds," by Kathleen J. Sullivan, August 20, 2008

Education Week, "Science in Plain English," by Sean Cavanaugh, August 27, 2008