

# REBECCA M. QUINTANA\*, PHD

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\*Also cited as Rebecca Cober

I am the Associate Director of Learning Experience Design at the Center for Academic Innovation at the University of Michigan and an Adjunct Lecturer at the School of Education at the University of Michigan. My research is situated at the intersection of community-oriented approaches to instruction, online learning design, and educational technologies.

## EDUCATION

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- 2017      **PhD**, Doctor of Philosophy, University of Toronto, Ontario Institute for Studies in Education  
Dissertation: *The role of visual representations in a Knowledge Community and Inquiry curriculum*  
Committee: James D. Slotta (chair), Shaaron Ainsworth, Lawrence Bencze, Jim Hewitt
- 2012      **MA**, Master of Arts in Education, University of Toronto, Ontario Institute for Studies in Education  
Thesis: *The role of aggregate representations in scaffolding collective inquiry*  
Advisor: James D. Slotta
- 1998      **BFA**, Visual Arts, York University  
Minored in English
- 1998      **BEd**, Education, York University  
Qualified to teach Fine Arts and English, Grades 7-12 in Ontario  
Qualified to teach all subjects, Grades 4-6 in Ontario

## PROFESSIONAL EXPERIENCE

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- 2021-present      **University of Michigan**, Ann Arbor, Michigan  
**Associate Director, Learning Experience Design**, Center for Academic Innovation  
**Adjunct Lecturer**, School of Education  
Co-director, Learning Experience Design Graduate Certificate  
Faculty, Digital Studies Institute  
Diversity Scholar, National Center for Institutional Diversity
- 2019-2021      **University of Michigan**, Ann Arbor, Michigan  
**Learning Experience Design Lead**, Center for Academic Innovation  
**Intermittent Lecturer**, School of Education  
Co-director, Learning Experience Design Graduate Certificate  
Faculty Affiliate, Digital Studies Institute  
Diversity Scholar, National Center for Institutional Diversity
- 2018      **University of Michigan**, Ann Arbor, Michigan  
**Learning Experience Design Lead**, Center for Academic Innovation
- 2016-2018      **University of Michigan**, Ann Arbor, Michigan  
**Learning Experience Designer Senior**, Center for Academic Innovation
- 2005-2010      **The Yorkland School**, Toronto, Ontario  
**Classroom Teacher** (all subjects), Grade 6

1998-2001 **The Yorkland School**, Toronto, Ontario  
**Visual Arts Teacher**, Grades 9-12

## RESEARCH EXPERIENCE

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- 2011-2016 **Ontario Institute for Studies in Education**, University of Toronto, Toronto, Ontario  
**Research Assistant**, Encore Lab, with James D. Slotta
- Embedded Phenomena Project
  - Collective inquiry and digital simulation for K-12 science
- 2016 **Glendon College**, York University, Toronto, Ontario  
**Research Associate**, with David Ip Yam
- First Year Experience Course
  - Curriculum development and learning experience design
- 2016 **Western University**, London, Ontario  
**Research Assistant**, with Mi Song Kim
- Social Science and Humanities Research Council, Knowledge Synthesis Grant
  - Community-oriented approaches to teaching and learning
- 2013 **University of California, Berkeley**, Berkeley, California  
**Research Assistant**, with Lisa Butler
- Community Health Worker Assistive Technology project
  - Curriculum resources for health workers in developing nations
- 2013 **Ontario Institute for Studies in Education**, University of Toronto, Toronto, Ontario  
**Research Assistant**, with Jim Hewitt
- The Pepper Project
  - Social learning through online education platform
- 2012 **Ontario Institute for Studies in Education**, University of Toronto, Toronto, Ontario  
**Research Assistant**, with Monique Herbert
- Ontario Educational Research Bank project
  - Curriculum resource portal for Ontario Ministry of Education

## HONORS AND AWARDS

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- 2020 **Digital Studies Research Grant**, Digital Studies Institute, University of Michigan  
Funding to support research on use of digital technologies in educational contexts (\$2000.00)
- 2019 **Academic Innovation Fund**, Center for Academic Innovation, University of Michigan  
Funding for proposed symposium: *Maxine Greene: Sounds and Stories of Lives Lived in the Pursuit of Aesthetic Social Justice Education*. Cancelled due to COVID-19.
- 2018 **Best Paper Award**  
*Visualizing course structures: Using course composition diagrams to reflect on design*  
Online Teaching and Learning SIG, American Educational Research Association (AERA)
- 2017 **Nomination for Best Design Paper**  
*The role of visual representations within the scientific practice of explanation*  
International Conference on Computer-supported Collaborative Learning (CSCL)
- 2013-2016 **Ontario Graduate Scholarship**  
Competitive, merit-based academic scholarship  
Awarded in three consecutive years
- 2012 **Wilfred Rusk Wees Fellowship**

## PUBLICATIONS

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### **Peer-reviewed Journal Articles**

- 2021 Brooks, C., **Quintana, R. M.**, Choi, H., Quintana, C., NeCamp, T., & Gardner, J. (2021). Towards culturally relevant personalization at scale: Experiments with data science learners. *International Journal of Artificial Intelligence*. <https://doi.org/10.1007/s40593-021-00262-2>
- Chandler, C. B., **Quintana, R. M.**, Tan, Y. & Aguinaga, J. M. (2021). Realizing equity and inclusion goals in MOOCs. *Journal of Applied Instructional Design*, 10(4). [https://edtechbooks.org/jaid\\_10\\_4/realizing\\_equity\\_and](https://edtechbooks.org/jaid_10_4/realizing_equity_and)
- Ibrahim, N. I., Bohm, L., Roche, J. S., Stoddard, S. A., **Quintana, R. M.**, Vetter, J., Bennett, J., Costello, B., Carter, P. M., Cunningham, R., & Hashikawa, A. N. (2021). Creating a 'choose your topic' massive open online course: An innovative and flexible approach to delivering injury prevention education. *Medical Education Online*, (26)1, 1955646, DOI: 10.1080/10872981.2021.1955646
- Quintana, R. M.** & Pinto, J. D., Tan, Y. (2021). What We Learned When We Compared Discussion Posts from One MOOC Hosted on Two Platforms. *Online Learning Journal*, 25 (4), 7-24. DOI: 10.24059/olj.v25i4.2897
- Quintana, R. M.** & Tan, Y. (2021). Visualizing course structure: Using course composition diagrams to reflect on design. *Tech Trends*, 65, 562-575, <https://doi.org/10.1007/s11528-021-00592-x>
- 2020 **Quintana, R. M.** & Quintana, C. (2020). When classroom interactions have to go online: The move to specifications grading in a project-based design course. *Information and Learning Sciences*, 121 (7/8), 525-532. <https://doi.org/10.1108/ILS-04-2020-0119>
- Pinto, J. D., Quintana, C., & **Quintana, R. M.** (2020). Exemplifying computational thinking scenarios in the age of COVID-19: Examining the pandemic's effects in a project-based MOOC. *Computing in Science and Engineering*. 22(6). 91-102. <https://doi.org/10.1109/MCSE.2020.30240121>
- 2019 **Quintana, R. M.**, & Tan, Y. (2019). Characterizing MOOC pedagogies: Exploring tools and methods for learning designers and researchers. *Online Learning Journal*. 23(4), 62-84. <http://dx.doi.org/10.24059/olj.v23i4.2084>
- Quintana, R. M.**, & Tan, Y. (2019). MOOC replication across platforms: Considerations for design team decision-making and process. *European Review of Online and Distributed Learning*. [https://old.eurodl.org/materials/briefs/2019/Quintana\\_Tan.pdf](https://old.eurodl.org/materials/briefs/2019/Quintana_Tan.pdf)
- 2015 **Cober, R.**, Tan, E., Slotta, J.D., So, H.-J., & Könings, K.D. (2015). Teachers as participatory designers: Two case studies with technology-enhanced learning environments. *Instructional Science*, 43(2), 203-228. <https://doi.org/10.1007/s11251-014-9339-0>

### **Peer-reviewed Journal Articles in Review**

- 2022 Bressler, A., **Quintana, R. M.**, & Zint, M. (2022). Co-design of a massive open online course: Motive fulfillment of faculty and students. Submitted to the *Journal of Computing in Higher Education*.

### **Book Chapters**

- 2021 **Quintana, R. M.**, Fortman, J., & DeVaney, J. (2021). Advancing an approach of resilient design for learning by designing for extensibility, flexibility, and redundancy (Chapter 4). In C. González, T. Thurston, and K. Lundstrom (Eds.), *Resilient Pedagogy: Practical Teaching Strategies to Overcome Distance, Disruption, and Distraction* (pp. 77-92). Utah State University. <https://dx.doi.org/10.26079/a516-fb24>
- 2020 **Quintana, R. M.**, Hearn, C., Peurach, D. J., & Gabriele, K. (2020). Self-directed, community-supported learning in practice: A case of elevated support. In L. Wilton & C. Brett (Eds.), *Handbook on Research on Online Discussion-based Teaching Methods* (pp. 312-332). IGI Global. <http://www.igi-global.com/chapter/self-directedcommunity-supported-learning/254778?camid=4v1>
- Quintana, R. M.**, Haley, S. R., Magyar, N., & Tan, Y. Learner and user experience design: A Bidirectional Approach (2020). In M. Schmidt, A. Tawfik, Y. Earnshaw, & I. Jahnke (Eds.), *Learner and User Experience Research: An Introduction to the Field of Learning Design and Technology* (pp. 234-250). EdTechBooks. [https://edtechbooks.org/ux/integrating\\_lxd\\_and\\_uxd](https://edtechbooks.org/ux/integrating_lxd_and_uxd)
- 2018 Slotta, J. D., **Quintana, R. M.**, & Moher, T. (2018). Collective inquiry in communities of learners. In F. Fischer, C. E. Hmelo-Silver, S. R. Goldman, & P. Reimann (Eds.), *International Handbook of the Learning Sciences* (pp. 308-317). Routledge.

### **Papers in Peer-reviewed Conference Proceedings**

- 2021 **Quintana, R. M.** (2021). Examining effective design and pedagogical approaches in the context of massive open online courses. In A. Wichmann, H. U. Hoppe, & N. Rummel (Eds.), *General Proceedings of the 1st Annual Meeting of the International Society of the Learning Sciences (ISLS) 2021*, (pp. 95-96). Bochum, Germany: International Society of the Learning Sciences. **[Early Career Workshop participant]**
- Quintana, R. M.**, Liu, Y., Tan, Y. & Aguinaga, J. M. (2021). Promoting reflection in a community-oriented MOOC. In E. de Vries, Y. Hod, Y., J. Ahn (Eds.), *Proceedings of the 15th International Conference of the Learning Sciences (ICLS) 2021*, (pp. 1061-1062). Bochum, Germany: International Society of the Learning Sciences.
- 2020 **Quintana, R. M.** & Fortman, J. (2020). Exploring the experience of students who take on alternative viewpoints within a role-based simulation. In M. Gresalfi and I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, Proceedings of the 14th International Conference of the Learning Sciences (ICLS) 2020*, Volume 1. (pp. 286-293). Nashville, Tennessee: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/6649>
- Quintana, C., **Quintana, R. M.**, & Bricker, L. (2020). The pragmatics of board games in K-12 science classrooms. In Gresalfi, M. and Horn, I. S. (Eds.), *The Interdisciplinarity of the Learning Sciences, Proceedings of the 14th International Conference of the Learning Sciences (ICLS) 2020*, Volume 3. (pp. 1809-1810). Nashville,

Tennessee: International Society of the Learning Sciences.  
<https://repository.isls.org/handle/1/6454>

**Quintana, R. M.**, Quintana, C., Fortman, J., & Gerber, E. R. (2020). ViewPoint: Student experiences with technology supporting role-based educational simulations. *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI)*, (pp. 1-7). Conference cancelled.  
<https://doi.org/10.1145/3334480.3383086>

2019 Tan, Y. & **Quintana, R. M.** (2019, March). What can we learn about learner interaction when one course is hosted on two MOOC platforms? *Proceedings of the 9th International Conference on Learning Analytics and Knowledge (LAK)*. (pp. 149-150). Tempe, Arizona.

2018 **Quintana, R. M.**, Brooks, C., Smothers, C., Tan, Y., Yao, Z., & Kulkarni, C. (2018). Mentor Academy: Engaging learners in the creation of data science problems for MOOCs. In J. Kay and R. Luckin (Eds.), *Rethinking Learning in the Digital Age: Making the Learning Sciences Count, Proceedings of the 13th International Conference of the Learning Sciences (ICLS) 2018*, Volume 3. (pp. 1415-1416). London, UK: International Society of the Learning Sciences.  
<https://repository.isls.org/handle/1/654>

**Quintana, R. M.**, Tan, Y., Gabriele, K., & Korf, N. (2018). It's just that visceral: Eliciting design insight using beaded representations of online course structure. *Proceedings of the 36th International Conference on Human Factors in Computing Systems: CHI 2018 Extended Abstracts (CHI)*. (LBW576, 6 pages). Montréal, Québec. <https://doi.org/10.1145/3170427.3188650>

2017 **Quintana, R. M.**, Haley, S. R., Levick, A., Holman, C., Hayward, B., & Wojan, M. (2017). The Persona Party: Using personas to design for learning at scale. *Proceedings of the 35th International Conference on Human Factors in Computing Systems: CHI 2017 Extended Abstracts (CHI)*. (pp. 933-941). Denver, Colorado.  
<https://doi.org/10.1145/3027063.3053355>

**Quintana, R. M.**, Slotta, J. D., & Moher., T. (2017). The role of visual representations within the scientific practice of explanation. In B.K. Smith, M. Borge, E. Mercier, and K. Y. Lim (Eds.), *Making a Difference: Prioritizing Equity and Access in CSCL, Proceedings of the 12th International Conference on Computer Supported Collaborative Learning (CSCL) 2017*, Volume 1. (pp. 503-510). Philadelphia, Pennsylvania: International Society of the Learning Sciences.  
<https://repository.isls.org/handle/1/271> **[nominated for Best Design Paper]**

2016 Hod, Y., Charles, E. S., Acosta, A., Ben-Zvi, D., Chen, M. H., Choi, K., Dugdale, M., Kali, Y., Lenton, K., McDonald, S. P., Moher, T., **Quintana, R. M.**, Rook, M. M., Slotta, J. D., Tietjen, P., Weiss, P. L., Whittaker, C., Zhang, J., Bielaczyc, K., & Kapur, M. (2016). Future learning spaces for learning communities: New directions and conceptual frameworks. In C. K. Looi, J. L. Polman, U. Cress, and P. Reimann (Eds.), *Transforming Learning, Empowering Learners, Proceedings of the 12th International Conference of the Learning Sciences (ICLS) 2016*, Volume 2. (p. 1063-1070). Singapore: International Society of the Learning Sciences.  
<https://repository.isls.org/handle/1/374>

**Quintana, R. M.**, Quintana, C., Madeira, C., & Slotta, J. D. (2016, May). Keeping watch: Exploring wearable technology designs for K-12 teachers. *Proceedings of the 34th International Conference on Human Factors in Computing Systems: CHI 2016 Late-Breaking Work (CHI)*. (pp. 2272-2278). May 9-12. San Jose, California.

2015

**Cober, R.** (2015). The role of student-generated visual representations in collective inquiry. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, and S. Ludvigsen (Eds.), *Exploring the Material Conditions of Learning, Proceedings of the 11th International Conference on Computer Supported Collaborative Learning (CSCL) 2015*. (pp. 955-956). Gothenburg, Sweden: International Society of the Learning Sciences. **[Doctoral Consortium participant]**

**Cober, R.**, Acosta, A., Lui, M., Moher, T., Kuhn, A., Quintana, C., & Slotta, J. D. (2015). The use of visual evidence for planning and argumentation. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, and S. Ludvigsen (Eds.), *Exploring the Material Conditions of Learning, Proceedings of the 11th International Conference on Computer Supported Collaborative Learning (CSCL) 2015*. Volume 2. (pp. 39-46). Gothenburg, Sweden: The International Society of the Learning Sciences. <https://repository.isls.org/handle/1/463>

Fong, C., **Cober, R.**, Messina, R., Moher, T., Murray, J., Peebles, B., & Slotta, J. D. (2015). The 3R orchestration cycle: Fostering multi-modal inquiry discourse in a scaffolded inquiry environment. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, and S. Ludvigsen (Eds.), *Exploring the Material Conditions of Learning, Proceedings of the 11th International Conference on Computer Supported Collaborative Learning (CSCL) 2015*. Volume 1. (pp. 548-551). Gothenburg, Sweden: The International Society of the Learning Sciences. <https://repository.isls.org/handle/1/388>

Mercier, E., Fong, C., **Cober, R.**, Slotta, J. D., Forssell, K. S., Israel, M., Joyce-Gibbons, A., Martinez-Maldonado, R., Messina, R., Murray, J., Peebles, B., Moher, T., Shehab, S., & Rummel, N. (2015). Researching and designing for the orchestration of learning in the CSCL classroom. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, and S. Ludvigsen (Eds.), *Exploring the Material Conditions of Learning, Proceedings of the 11th International Conference on Computer Supported Collaborative Learning (CSCL) 2015*. Volume 2. (pp. 599-606). Gothenburg, Sweden: The International Society of the Learning Sciences. <https://repository.isls.org/handle/1/445>

Moher, M., Slotta, J. D., Acosta, A., **Cober, R.**, Dasgupta, C., Fong, C., Gnoli, A., Silva, A., Lopez Silva, B., Perritano, A., & Peppler, K. (2015). Knowledge construction in the instrumented classroom: Supporting student investigations of their physical learning environment. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, and S. Ludvigsen (Eds.), *Exploring the Material Conditions of Learning, Proceedings of the 11th International Conference on Computer Supported Collaborative Learning (CSCL) 2015*. Volume 2. (pp. 631-638). Gothenburg, Sweden: The International Society of the Learning Sciences. <https://repository.isls.org/handle/1/449>

2014

Moher, T., Ching, C. C., Schaefer, S., Lee, V. R., Enyedy, N., Danish, J. A., Guerra, P., Gnoli, A., Pazmino, P. J., Silva, B. A., Lyons, L., Perritano, A., Slattery, B., Tissenbaum, M., Slotta, J. D., **Cober, R.**, Fong, C., & Rubin, A. (2014). Becoming Reflective: Designing for Reflection on Physical Performances. In J. L. Polman, E. A. Kyza, D. K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, and L. D'Amico (Eds.), *Learning and Becoming in Practice, Proceedings of the 11th International Conference of the Learning Sciences (ICLS) 2014*. Volume 3. (pp. 1273-1282). Boulder, Colorado: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/970>

2013

**Cober, R.** (2013). An embodied approach to collaborative knowledge construction for science inquiry. *Proceedings of the 12th International Conference on Interaction*

*Design and Children* (IDC). (pp. 667-670). New York, New York. **[Doctoral Consortium participant]**

**Cober, R.**, McCann, C., Moher, T., & Slotta, J. D. (2013). Aggregating students' observations in support of community knowledge and discourse. In N. Rummel, M. Kapur, M. J. Nathan, & S. Puntambekar (Eds.), *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale, Proceedings of the 10<sup>th</sup> Annual Conference on Computer Supported Collaborative Learning (CSCL)*. Volume 1. (pp. 121-128). Madison, Wisconsin: The International Society of the Learning Sciences. <https://repository.isls.org//handle/1/1776>

Fong, C., **Cober, R.**, Madeira, C. A., Messina, R., Murray, J., Peebles, B., & Slotta, J. D. (2013). Common Knowledge: Orchestrating Synchronously Blended F2F Discourse in the Elementary Classroom. In N. Rummel, M. Kapur, M. J. Nathan, & S. Puntambekar (Eds.), *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale, Proceedings of the 10<sup>th</sup> Annual Conference on Computer Supported Collaborative Learning (CSCL)*. Volume 2. (pp. 26-29). Madison, Wisconsin: The International Society of the Learning Sciences. <https://repository.isls.org//handle/1/1845>

2012 **Cober, R.**, Au, O. & Son, J., (2012, February). Using a participatory approach to design a technology-enhanced museum tour for visitors who are blind. In *Proceedings of the iConference 2012* (pp. 592-594). Toronto, Ontario. <https://doi.org/10.1145/2132176.2132301>

**Cober, R.**, Fong, C., Gnoli, A., Silva, B. L., Lui, M., Madeira, C. A., McCann, C., Moher, T., Slotta, J. D., & Tissenbaum, M. (2012). Embedded Phenomena for knowledge communities: Supporting complex practices and interactions within a community of inquiry in the elementary science classroom. In J. van Aalst, K. Thompson, M. J. Jacobson, and P. Reimann (Eds.), *The Future of Learning, Proceedings of the 10th International Conference of the Learning Sciences (ICLS) 2012*. Volume 2. (pp. 64-71). Sydney, NSW, Australia: International Society of the Learning Sciences. <https://repository.isls.org//handle/1/2385>

### **Papers Accepted in Peer-reviewed Conference Proceedings**

2022 Aguinaga, J. M. & **Quintana, R. M.** (2022, June). Creating space for formative peer feedback in a community-oriented MOOC. Poster accepted to the *Proceedings of the 16th International Conference of the Learning Sciences (ICLS) 2022*. June 6-10. Online.

Fortman, J. & **Quintana, R. M.** (2022, June). Emotion as a condition and target of learning design during emergency remote teaching. Poster accepted to the *Proceedings of the 16th International Conference of the Learning Sciences (ICLS) 2022*. June 6-10. Online.

**Quintana, R. M.** (2022, June). Charting learning experiences of immersion across digital space and time. Symposium paper accepted to the *Proceedings of the 16th International Conference of the Learning Sciences (ICLS) 2022*. June 6-10. Online.

### **Conference Presentations**

*Unpublished, peer-reviewed papers*

2021 Chandler, C. B., **Quintana, R. M.**, Fortman, J., & Tan, Y. (2021, April). Playing the case: A self-study of the implementation of an online, asynchronous professional

learning experience design Simulation. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 9-12. Online.

Fortman, J., **Quintana, R. M.**, Chandler, C. B., & Tan, Y. (2021, April). Becoming a professional learning designer: Modeling concept relations in a playable case study. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 9-12. Online.

Pinto, J. D., Quintana, C., & **Quintana, R. M.** (2021, April). Exploring how learners integrate personally meaningful issues in a project-based MOOC. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 9-12. Online.

**Quintana, R. M.**, Pinto, J. D., Tan, Y. (2021, April). What we learned when we compared discussion posts from one MOOC hosted on two platforms. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 9-12. Online.

2020

Chandler, C. B., **Quintana, R. M.**, Tan, Y., & Yang., N. (2020, April). Diversity, equity, and inclusion in MOOCs: Mapping goals from proposal to design. Paper accepted to the Annual Meeting of the American Educational Research Association (AERA). Conference cancelled.

**Quintana, R. M.**, Tan, Y. Haley, S. R., Wing, L. & Sohn, J. (2020, April). Developing a MOOC series: Pedagogical considerations for learning designers. Paper accepted to the Annual Meeting of the American Educational Research Association (AERA). Conference cancelled.

Tan, Y., **Quintana, R. M.**, & Sohn, J. (2020, April). Cross-platform engagement in MOOCs: Understanding learner audiences on two course delivery platforms. Poster accepted to the Annual Meeting of the American Educational Research Association (AERA). Conference Cancelled.

2019

Bressler, A., **Quintana, R. M.**, & Zint, M. (2019, April). By learners, for learners: Reviewing a MOOC on climate change co-designed by students and faculty. Presented in the Innovating MOOC Pedagogies structured poster session at the Annual Meeting of the American Educational Research Association (AERA). April 5-8. Toronto, Ontario.

Bricker, L., Allen, D., Quintana, C., Jackson, A., & **Quintana, R. M.** (2019, March-April). The new science: Images of science in a commercially available science-themed board game. Paper presented at the 2019 Annual International Conference of the National Association for Research on Science Teaching (NARST). March 31-April 3. Baltimore, Maryland.

Quintana, C., Stockdill, D., **Quintana, R. M.**, & Bennett, J. (2019, April). Exploring the integration of project-based learning approaches into MOOCs. Presented in the Innovating MOOC Pedagogies structured poster session at the Annual Meeting of the American Educational Research Association (AERA). April 5-8. Toronto, Ontario.

**Quintana, R. M.** (2019, April). The Knowledge Community and Inquiry model for supporting emergent curriculum designs. Presented in the Knowledge Community and Inquiry model: Synthesizing a Decade's Research for a Widening Audience structured poster session at the Annual Meeting of the American Educational Research Association (AERA). April 5-8. Toronto, Ontario.



- Quintana, R. M.**, Brooks, C., Smothers, C., & Tan, Y. (2019, April). Engaging MOOC learners in the creation of data science problems. Presented in the Innovating MOOC Pedagogies structured poster session at the Annual Meeting of the American Educational Research Association (AERA). April 5-8. Toronto, Ontario.
- Quintana, R. M.** & Tan, Y. (2019, April). Characterizing MOOC pedagogies: Exploring new tools and methods for learning designers and researchers. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 5-8. Toronto, Ontario.
- 2018 **Quintana, R. M.**, Tan, Y., & Korf, N. (2018, April). Visualizing course structure: Using course composition diagrams to reflect on design. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 13-17. New York, New York. **[best paper, Online Teaching and Learning SIG]**
- 2017 **Quintana, R. M.** & Slotta, J. D. (2017, April). Visual timelines: A proposed approach to transcription for researchers using design-based research methods. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 27-May 1. San Antonio, Texas.
- Slotta, J. D., Lui, M., **Quintana, R. M.**, & Moher, T. (2017, April). Modeling Wallcology: Technology scaffolds for building, predicting, and reasoning around models of simulated ecosystems. Poster presented at the Annual Meeting of the American Educational Research Association (AERA). April 27-May 1. San Antonio, Texas.
- 2016 Madeira, C.A., **Quintana, R. M.**, & Slotta, J. D. (2016, April). Wearable technology for teachers: Support for classroom orchestration. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 8-11. Washington, D.C.
- Quintana, R. M.**, Madeira, C. A. & Slotta, J. D. (2016, April). Collecting and creating visual representations within a technology-mediated astronomy curriculum. Poster presented at the Annual Meeting of the American Educational Research Association (AERA). April 8-11. Washington, D.C.
- 2015 **Cober, R.**, Moher, T. & Slotta, J. D. (2015, April). Working as a scientific community: Collecting and sharing evidence from camera trap photos of our schoolyard. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 16-20. Chicago, Illinois.
- Cober, R.**, Tan, E., Slotta, J. D., So, H.-J., Könings, K. D. (2015, April). Conditions that support teachers as participatory designers: Two case studies of technology design for knowledge-building environments. Poster presented at Annual Meeting of the American Educational Research Association (AERA). April 16-20. Chicago, Illinois.
- 2014 **Cober, R.**, Acosta, A., Fong, C., Peebles, B., & Slotta, J. D. (2014, April). Getting a feel for it: A hands-on approach for expressive activities in middle school astronomy. Round table presentation at the Annual Meeting of the American Educational Research Association (AERA). April 3-7. Philadelphia, Pennsylvania.
- Fong, C., **Cober, R.**, Murray, J., Peebles, B., & Slotta, J.D. (2014, April). Common Knowledge: Design, scripting, and orchestration of knowledge building discourse in elementary science. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 3-7. Philadelphia, Pennsylvania.

Oztok, M., Zingaro, D., **Cober, R.**, Brett., C., & Hewitt, J. (2014, April). Toward understanding threads as social and cognitive artifacts for knowledge building in online learning. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 3-7. Philadelphia, Pennsylvania.

2013

**Cober, R.**, McCann, C., Moher, T. & Slotta, J. D. (2013, April). Aggregate representations to support scientific inquiry: A case study with Embedded Phenomena. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 27- May 1. San Francisco, California.

**Cober, R.**, McCann, C., Moher, T. & Slotta, J. D. (2013, April). Structured multi-vocal representations in collective inquiry: Scaffolding the construction of relationship networks from binary observations. Poster presented at the Embedded Phenomena for Inquiry Communities symposium at the Annual Meeting of the American Educational Research Association (AERA). April 27- May 1. San Francisco, California.

Fong, C., **Cober, R.**, Madeira, C., & Slotta, J. D. (2013, April). Common Knowledge for collective inquiry discourse. Poster presented at the Annual Meeting of the American Educational Research Association (AERA). April 27- May 1. San Francisco, California.

Slotta, J. D., & **Cober, R.** (2013, August). Smart classrooms for knowledge communities: Scaffolding complex inquiry designs. Paper presented at the biennial conference of the European Association for Learning and Instruction (EARLI). August 27-31. Munich, Germany.

Tissenbaum, M., Zukowski, M., **Cober, R.**, Acosta, A., & Slotta, J. D. (2013, February). Rock, Paper, Awesome. Student design challenge demonstration at the 7th International Conference on Tangible, Embedded and Embodied Interaction. (TEI). February 10-13. Barcelona, Spain.

2012

**Cober, R.** & Slotta, J. D. (2012, May). Using aggregated representations of student-contributed content in an inquiry-based science curriculum: A case study. Paper presented at the Annual Meeting of the Canadian Society for Studies in Education (CSSE). May 27-30. Waterloo, Ontario.

Fong, C., **Cober, R.**, Madeira, C. A., & Slotta, J. D. (2012, April). Common Knowledge: Scaffolding collective inquiry for knowledge communities. Paper presented at the Annual Meeting of the American Educational Research Association (AERA). April 13-17. Vancouver, British Columbia.

### **Conference Papers Accepted for Presentation**

2022

**Quintana, R. M.** & Aguinaga, J. M. (2022, April). A rich landscape for learning: Scaffolding a culminating assignment within a community and task-based MOOC. Paper submitted to the Annual Meeting of the American Educational Research Association (AERA). April 22-25. San Diego, California.

**Quintana, R. M.** & Fortman, J., & Oldenberg-McGee, C. (2022, April). Dwelling in and stepping out: Reflecting on pedagogical designs to support learning in XR environments. Poster submitted to the Annual Meeting of the American Educational Research Association (AERA). April 22-25. San Diego, California.

### **Workshops**

*Development and facilitation of conference workshops*

- 2020 **Quintana, R. M.** & Gerber, E. R. (2020, June). Exploring ViewPoint: A new pedagogical tool for engaging learners in role-based simulations. Workshop co-organizer at ICLS 2020: The International Conference for the Learning Sciences.
- 2018 Quintana, C., **Quintana, R. M.**, Bricker, L. A., Jackson, A., & Allen, D. (2018, June). Rethinking learning in the digital age: Exploring the potential for using science-themed board games in science classrooms. Workshop co-organizer at ICLS 2018: The International Conference for the Learning Sciences.

### **Workshops**

#### *Unpublished papers and posters*

- 2018 Shultz, K., Tan, Y., & **Quintana, R. M.** (2018, May). What can we learn from historic MOOC data? Perspectives from two learning designers and a data scientist. Poster presented at the Michigan Institute for Data Science (MIDAS) Learning Analytics Symposium. University of Michigan. Ann Arbor, Michigan.
- 2017 Brooks, C., **Quintana, R. M.**, & Liang, H. (2017, March). Engaging MOOC learners as lifelong collaborators. Paper presented at the Workshop on Integrated Learning Analytics of MOOCs Post-Course Development at the 7<sup>th</sup> International Learning Analytics & Knowledge Conference (LAK). March 13-17. Vancouver, British Columbia.
- 2015 **Cober, R.** & Slotta, J. D. (2015, April). The role of student-generated visual representations in collective inquiry. Participation in the Deep Multimodal Data Jam workshop held by the NSF-supported Learning Games Play Data Consortium and the NSF-supported Analytics for Learning project. April 15. Chicago, Illinois.
- 2013 **Cober, R.** (2013, June). Supporting collaborative inquiry through aggregate representations of student-generated content. Paper presented at the Human-Computer Interaction and the Learning Sciences workshop at the 10th International Conference on Computer-supported Collaborative Learning (CSCL). June 15-19. Madison, Wisconsin.
- 2012 **Cober, R.**, Madeira, C., Fong, C. & Slotta, J.D. (2012, July). Designing smart classroom technologies with teachers: Creating opportunities for collaboration and innovation. Paper presented at the Teachers as Designers of Technology Enhanced Learning Materials workshop at the 10th International Conference for the Learning Sciences (ICLS). July 2-6. Sydney, Australia.
- Lui, M., **Cober, R.** & Slotta, J.D. (2012, May). Designing learning experiences for collective inquiry: Two case studies of interaction patterns. Paper presented at the Educational Interfaces, Software, and Technology workshop at the 30th International Conference on Human Factors in Computing Systems (CHI). May 5-10. Austin, Texas.
- Slotta, J. D., Tissenbaum, M., Lui, M., Fong, C. & **Cober, R.** (2012, July). Designing and orchestrating complex collective inquiry: A role for symbolic representation and technology environments. Paper presented at the Classroom Orchestration: Moving Beyond Current Understanding of the Field workshop at the 10th International Conference for the Learning Sciences (ICLS). July 2-6. Sydney, Australia.

### **Columns and Guests Blog Posts**

- 2021 Lachheb, A. & **Quintana, R. M.** (2021, August 18). Learning Experience Design at the Center for Academic Innovation: A DEIJ Story.

<https://ai.umich.edu/blog/learning-experience-design-at-the-center-for-academic-innovation-a-deij-story/>

**Quintana, R. M.** (2021, July 5). Resilient teaching: A learning design framework for a post-pandemic era. *Media and Learning*. <https://media-and-learning.eu/type/featured-articles/resilient-teaching-a-learning-design-framework-for-a-post-pandemic-era/>

2020

**Quintana, R. M.** & DeVaney, J. (2020, May 27). Laying the foundation for a resilient teaching community. *Inside Higher Education*. <https://www.insidehighered.com/blogs/learning-innovation/laying-foundation-resilient-teaching-community>

DeVaney, J., & **Quintana, R. M.** (2020, April 15). Preparing for future disruption: Hybrid teaching for a new instructional age. *Inside Higher Education*. <https://www.insidehighered.com/blogs/learning-innovation/preparing-future-disruption-hybrid-resilient-teaching-new-instructional>

2019

Arashiro, P., **Quintana, R. M.**, & Tan, Y. (2019, September 28). Summer MOOOOC adventure: Grazing courses on FutureLearn. Center for Academic Innovation. <https://ai.umich.edu/blog/summer-moooooc-adventure-grazing-courses-on-futurelearn/>

Chandler, C. B., **Quintana, R. M.**, Tan, Y., & Yang, N. (2019, October 31). Diversity, equity, and inclusion in MOOCs: Mapping goals from proposal to design. Center for Academic Innovation. <https://ai.umich.edu/blog/diversity-equity-and-inclusion-in-moocs-mapping-goals-from-proposal-to-design/>

Haley, S., Magyar, N., **Quintana, R. M.**, & Tan, Y. (2019, November 22). How Learning experience design informs user experience design at Academic Innovation. Center for Academic Innovation. <https://ai.umich.edu/blog/how-learning-experience-design-informs-user-experience-design-at-academic-innovation/>

Park, J. & **Quintana, R. M.**, Tan, Y., Yan, W. (2019, January 21). Gallery Tool unlocks peer feedback possibilities for MOOC learners. Center for Academic Innovation. <https://ai.umich.edu/blog/gallery-tool-unlocks-peer-feedback-possibilities-for-mooc-learners/>

**Quintana, R. M.**, Tan, Y., LaFosse, R., & Bennett, J. (2019, April 21). Presenting our research at the 2019 AERA Annual Meeting. Center for Academic Innovation. <https://ai.umich.edu/blog/presenting-our-research-at-the-2019-aera-annual-meeting/>

**Quintana, R. M.**, Tan, Y., Yan, W. (2019, March 22). Recapping the 2019 Learning Analytics & Knowledge Conference. Center for Academic Innovation. <https://ai.umich.edu/blog/recapping-the-2019-learning-analytics-knowledge-conference/>

Tan, Y., **Quintana, R. M.**, Haley, S., & Magyar, N. (2019, October 24). Evolving the learner persona creation process at Academic Innovation. Center for Academic Innovation. <https://ai.umich.edu/blog/evolving-the-learner-persona-creation-process-at-academic-innovation/>

2018

Brooks, C. & **Quintana, R. M.** (2018, January 11). A mentor academy. Center for Academic Innovation. <http://ai.umich.edu/a-mentor-academy/>

**Quintana, R. M.** (2018, March 15). Seeing the "big picture": Using design representations to promote understanding and reflection on design. Center for Academic

Innovation. <https://ai.umich.edu/seeing-the-big-picture-using-design-representations-to-promote-understanding-and-reflection-on-design/>

**Quintana, R. M.** (2018, February 23). Using chart paper and sticky notes to bring curriculum design into focus. Center for Academic Innovation. <http://ai.umich.edu/using-chart-paper-and-sticky-notes-to-bring-curriculum-design-into-focus/>

**Quintana, R. M.,** Tan, Y., & Schulz, K. (2018, June 21). What we can learn from historic MOOC Data: Findings from our participation in the AIM analytics dropout prediction challenge. Center for Academic Innovation. <http://ai.umich.edu/blog/what-we-can-learn-from-historic-mooc-data-findings-from-our-participation-in-the-aim-analytics-dropout-prediction-challenge/>

2017 **Quintana, R. M.** & Tan, Y. (2017, December 20). Introducing the 'All Hands-on Deck' writing jam. Center for Academic Innovation. <http://ai.umich.edu/introducing-the-all-hands-on-deck-writing-jam-for-visual-descriptions-of-images/>

**Quintana, R. M.** (2017, July 13). Transforming university students from consumers to developers of online content. Center for Academic Innovation. <http://ai.umich.edu/transforming-university-students-from-consumers-to-developers-of-online-content-2/>

## PRESENTATIONS AND INVITED LECTURES

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### *Scholarly Presentations*

2021 Lachheb, A., **Quintana, R. M.**, Yu, J. H., & Zamora, A. (2021, July). Diversity, equity, inclusion, and justice in action: A case study of learning experience designers' practice for online learning experiences. 2021 AECT Summer Research Symposium: Toward Inclusive Learning Design: Social Justice, Equity, and Community. Online.

**Quintana, R. M.** & Aguinaga, J. M. (2021, May). Fostering reflection on practice within MOOCs. Pandemic Pedagogy Research Symposium. Online.

2020 Tan, Y. & **Quintana, R. M.** (2020, February). A tale of two MOOCs: What we learned when we hosted one course on two platforms. Academic Innovation Data Showcase. University of Michigan, Ann Arbor, Michigan.

**Quintana, R. M.** & Wing, L. (2020, June). Developing a MOOC series: Pedagogical considerations for learning designers. Online Learning Consortium. Online.

2019 **Quintana, R. M.** (2019, January). Using data to visualize MOOC design and pedagogy. Academic Innovation Data Showcase. University of Michigan, Ann Arbor, Michigan.

2018 **Quintana, R. M.** (2018, June). Visualizing curriculum design of online courses: Exploring the impacts of digital and tangible representations. Outside-In Series. Center for Academic Innovation. University of Michigan, Ann Arbor, Michigan.

2017 **Quintana, R. M.** (2017, September). Visualizing course structure: Just bead it! Academic Innovation at Michigan (AIM) Analytics Workshop Series. Center for Academic Innovation. University of Michigan, Ann Arbor, Michigan.

- 2013 **Cober, R.** (2013, March). Aggregate representations to support scientific inquiry: A case study. The 13th Annual Dean's Graduate Student Research Conference. Ontario Institute for Studies in Education. Toronto, Ontario.
- 2012 **Cober, R.** (2012, March). The role of paper-based artifacts in a technology-rich classroom. The 12<sup>th</sup> Annual Dean's Graduate Student Research Conference. Ontario Institute for Studies in Education. Toronto, Ontario.

### ***Invited Presentations***

- 2021 **Quintana, R. M.** & Lindgren, R. (2021, September). Social learning in augmented and virtual reality. [Presentation]. Academic Innovation at Michigan (AIM) Extended Reality (XR). Online.
- Quintana, R. M.** & Peurach, D. (2021, June). From content to community: An emerging learning design framework for re-creating learning experiences for a digital world. [Presentation]. Michigan Online Visionary Educators series. Michigan Online. Online.
- Quintana, R. M.** (2021, May). Resilient teaching: A learning design framework for a post-pandemic era. [Presentation]. Media and Learning Online: Spring 2021 conference. Online.
- Quintana, R. M.** (2021, April). Digital Studies and Humanities. [Panel]. XR @ Michigan Summit. Online.
- 2020 **Quintana, R. M.** (2020, December). Building resilient teaching through times of change. [Keynote]. Coursera Bold and Innovative Educators series. Online.
- Quintana, R. M.** (2020, November). Building resilient teaching models after Covid-19: The business schools case. [Panel]. Annual Bachelor's Programme Conference. Online.
- Quintana, R. M.** (2020, October). Building resilient teaching models after Covid-19. [Keynote]. Association to Advance Collegiate Schools of Business Conference. Online.
- Quintana, R. M.** (2020, June). Resilient teaching through times of crisis and change. [Panel]. Learning Environments in the time of COVID-19: (Towards) Evidence-Driven Innovation and Resilience at the University of Michigan. Michigan Institute for Data Science (MIDAS). University of Michigan. Online.
- 2019 **Quintana, R. M.** (2019, April). Online learning experiences. [Presentation]. Michigan China Forum: Education Panel. University of Michigan, Ann Arbor, Michigan.

### **UNIVERSITY TEACHING EXPERIENCE**

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- 2021, 2022 **University of Michigan**, School of Education, Educational Studies  
**Instructor of record and course creator**, Winter semesters  
**EDUC 617:** Educational Applications of Augmented and Virtual Reality  
 Approved course for the Extended Reality Graduate Certificate  
 Graduate level, one-credit

Through a close examination of relevant literature and contemporary extended reality (XR) technology, students critically examine the potential for “breakthrough” technologies to support learning. Students will apply insight from current literature

about learning theory, psychology, and human-computer interaction and their own direct experiences of XR to understand the ways in which these technologies might (or might not) support learning.

2021 **University of Michigan**, School of Education, Educational Studies  
**Instructor of record and course creator**, Spring semester  
**EDUC 617:** Universal Design for Learning  
Graduate level, two-credits

Universal Design for Learning (UDL) is a learning design framework that accounts for learner variability and contextual factors through three principles: multiple means of engagement, multiple means of representation, and multiple means of action and expression. Students engage in analysis of teaching cases, collaborative knowledge construction, and rich discussion to apply UDL principles across a range of contexts. Students explore intersections of UDL with related pedagogies such as anti-racist pedagogies, culturally responsive teaching, and social-emotional learning.

2020 **University of Michigan**, School of Education, Educational Studies  
**Instructor of record**, Winter semester  
**EDUC 626:** Principles of Software Design for Learning  
Graduate level, 3 credits

Students explore significant educational problems, learner-centered design processes, ramifications of learning theories, and examples of learning technologies. Students begin a technology project by identifying an educational context, learning goals, and a learner audience to design software addressing the identified learner needs in the given context.

2019-present **University of Michigan**, School of Education, Educational Studies  
**Instructional staff and course creator**, Fall semesters (2019, 2020), Winter 2020  
**EDUC 616:** Learning Experience Design  
Core course for the Learning Experience Design Graduate Certificate  
Graduate level, 6 credits

Students explore foundational topics in design, theories of learning, and evidence-based approaches to instruction. In the seminar portion of the course, students discuss readings and projects with peers and instructors. In the residency portion of the course, students work alongside design mentors, media specialists, and faculty to create authentic and engaging learning experiences for a global audience of learners. This integrated experience culminates in the development of a learning design portfolio.

2019 **University of Michigan**, School of Education, Educational Studies  
**Instructor of record**, Winter semester, Fall semester  
**EDUC 333:** Video Games and Learning (undergraduate level)  
**EDUC 602:** Video Games, Learning, and School Design (graduate level)  
Meet-together format, 3 credits

Students take a close look at games within the context of education and learning by exploring recent work in gaming (video and board games), learning theory, motivation theory, curricula design, and other current work on the use and design of games for learning. Students integrate this reading and discussion in a range of activities, including poster presentations, papers and critiques, and game design projects to take a broad look at how learning and motivation theory can inform games, and how games can support learning.

2014 **University of Toronto**, School of Information  
**Instructor of record and course creator**, Winter semester

**KMDI 2002:** Tangible and Embodied Interaction: Supporting New Forms of Personal and Social Interaction  
Graduate level, 3 credits

The course is organized around five themes that are connected to the idea that tangible and embodied computing can support new forms of personal activity and social interaction: DIY and critical-making; wearable computing and digital fashion; tangible, embodied, and immersive learning; smart objects, cars, and cities, and health and aging. Students participate in a series of “hands-on” and make site visits to relevant innovation labs. In addition, several local guest speakers are invited to present their work and to participate in whole group discussions around the central themes of the course.

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## **OPEN ONLINE TEACHING EXPERIENCE**

2020            **University of Michigan, Coursera and FutureLearn**  
**Instructor and course creator,** Center for Academic Innovation  
Resilient Teaching Through Times of Crisis and Change

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## **PROFESSIONAL AFFILIATIONS**

2012-Present    American Educational Research Association (AERA) Member of Advanced Technologies for Learning SIG, Division C, Learning Sciences SIG, Online Teaching and Learning SIG

2013-Present    Association of the Computing Machinery Special Interest Group on Computer-Human Interaction (SIGCHI)

2021-Present    Association for Educational Communications and Technology (AECT)

2013-Present    International Society of the Learning Sciences (ISLS)

2016-Present    Society for Learning Analytics Research (SOLAR)

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## **SERVICE TO THE PROFESSION**

### ***Peer Reviewer for Journals***

2020            Currents in Teaching and Learning (CTL)

2021            The Journal of Applied Instructional Design (JAID)

2018-2021      Online Learning Journal (OLJ)

2019            The International Review of Research in Open and Distributed Learning (IRRODL)

2018            Teaching and Teacher Education (TTE)

### ***Peer Reviewer for Conferences***

2017-2023      American Educational Research Association (AERA)

2012-2014      Canadian Society for Studies in Education (CSSE)

2013-2015      Computer-supported Collaborative Learning (CSCL)

2019-2022      Human Factors in Computing Systems (CHI)

2013-2016      Interaction Design and Children (IDC)



- 2014-2023 International Conference of the Learning Sciences (ICLS)
- 2019 Learning Analytics and Knowledge (LAK)
- 2015 Tangible, Embedded, Embodied Interaction (TEI)

**Conference Organization**

- 2022 International Conference of the Learning Sciences (ICLS): Co-organizer for the “Where, when, and at what pace? Space and time in equitable learning design” symposium  
  
American Educational Research Association (AERA): Co-organizer for the “Technologies for situated, grounded, embodied Learning: The unique role of extended reality experiences” structured poster session, Advanced Technologies for Learning SIG
- 2019 American Educational Research Association (AERA): Co-organizer for the Innovating MOOC Pedagogies Structured Poster Session, Online Teaching and Learning SIG
- 2019-2020 Human Factors in Computing Systems (CHI): Associate Paper Chair for Learning, Education, and Families Subcommittee

**Conference Session Chair**

- 2021 American Educational Research Association (AERA): Discussing Online Discussions
- 2019 Human Factors in Computing Systems (CHI): Online Learning Contexts
- 2018 Human Factors in Computing Systems (CHI): Accessible Images and Photographs

**Peer Reviewer for Grant Proposals**

- 2022 National Science Foundation: Research on Emerging Technologies for Teaching and Learning

**SERVICE TO THE UNIVERSITY**

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- 2021-present Committee member for the Online Learning Experience Committee for the Health Informatics Learning Systems (HILS) online degree
- 2020-present Committee member for the University of Michigan Education Hub (UMEdHub) for the School of Education