

MARCELA BORGE

Learning and Performance Systems • The Pennsylvania State University • 301C Keller Building
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EDUCATION

Ph.D., Education (2007)

University of California, Berkeley

Cognition and Development: Education in Math, Science and Technology

Primary advisor: Barbara Y. White, Ph.D.

Dissertation thesis: Regulating social interactions: Developing a functional theory of collaboration; Committee: Barbara White, Kathleen Metz, & Rodolfo Mendoza-Denton

M. A., Education (2004)

University of California, Berkeley

Master's thesis: Developing collaborative expertise: Using socio cognitive roles to regulate group processes.

B. A., Psychology (2001)

University of California, Berkeley

Research Assistant: Berkeley Psychophysiology Lab; Director: Robert Levenson, Ph.D.

ACADEMIC APPOINTMENTS

Associate Professor (2021-present)

Learning, Design, and Technology program

College of Education

The Pennsylvania State University, University Park

Professor in Charge (2021-2022)

Learning, Design, and Technology program

College of Education

The Pennsylvania State University, University Park

Assistant Professor (2014-2021)

Learning, Design, and Technology program

College of Education

The Pennsylvania State University, University Park

Senior Research Associate and Graduate Faculty (2012-2014)

College of Information Sciences and Technology
Center for Online Innovations in Learning
The Pennsylvania State University, University Park

Research Associate (2007-2012)

Computer Supported Collaboration and Learning Lab
College of Information Sciences and Technology
The Pennsylvania State University, University Park
Research Supervisor: John M. Carroll, PhD

LEADERSHIP ROLES**Chair /Co-Chair of the Equity Team (2021-present)****College of Education, The Pennsylvania State University**

Provided leadership and guidance for 16 faculty, staff, and students elected to serve as the college's adaptive equity-minded/equity praxis leadership team." Served as co-chair from 2021-2023 (incoming 2021-2022; lead 2022-2023); Stepped in as lone chair in 2023 when new co-chairs could not take on the position. Recruited and trained an incoming co-chair for 2015 and submitted an equity fellowship to provide a course reduction for future Equity Team chairs.

Selected Accomplishments**Coordinating, Planning, and Monitoring Tasks to Help the College of Education Meet the Aims of the Strategic Plan**

Led and organized bi-monthly meetings with the whole team and sub-team to make progress on strategic aims. Organized and ran yearly retreats to create community among members, reflect on practices, and identify ways to improve as an organization. Helped to lead efforts to break down the College of Education's strategic plan into concrete tasks. Coordinated yearly tactical planning of the team's tasks to meet the college's strategic plans. Provided oversight and support to aid four sub-teams.

Providing Leadership and Guidance

Collaborated with the dean, associate deans, and department to inform and document equity efforts in the college, engage the College of Education community in professional development experiences, dialogue, and create new organizations and structures to reduce bias. Coordinated with and provided support and guidance to other equity and social justice leaders as part of Equity Coalition. Advocated for Equity Team members and faculty across the college to garner support for creating new policies, organizations, courses, and structures that align with the college's strategic plans for equity. Collaborated with College of Education faculty and local school district leaders to bring attention to and help resolve local equity and social justice issues that

negatively impact the families of faculty of color with local school district leaders.

Designing, Developing, Implementing, and Evaluating Structures, Organizations, Policies, and Practices

Worked with team members and senior leadership to change policies and practices across the college, programs, and centers to bring about cultural change. Led the creation of the founding organizational mission, membership documents, and member nomination and selection processes for the BIPOC Council. Established the Equity Fellowship, including founding documents and call for the fellowship, in collaboration with the equity team and the Associate Dean of Faculty affairs.

Recruitment and Retention of Faculty

Worked with inaugural Equity Fellow to run a series of community-based events with faculty of color to improve connections and sense of community. Helped recruit faculty of color across the college by meeting with prospective candidates to advise, answer questions, and connect them to other scholars of color across the university.

Emergent Issues and Needs

Provided conflict resolution for emergent equity-based faculty and student issues. Provided resources and support to other social justice and equity-based organizations across the university. Advised senior leadership across the university on emergent, confidential equity matters.

Professor in Charge (2021-2022)

Learning, Design, and Technology Program

College of Education, The Pennsylvania State University

Head of the Learning Design and Technology Program (LDT). Communicated with prospective students and applicants. Provided program leadership, organizing and running monthly meetings. Proposed course offerings and staffing for Fall, Spring, and summer undergraduate and graduate courses (UP and WC) based on consultation with program faculty. Represented the program at monthly meetings with other program heads, World Campus Leads, Director, and Department Heads. Monitored enrollments and proposed backup plans to the Director of Graduate and Undergraduate Training in response to under-enrolled classes. Provided orientations for new graduate student assistants, which included creating resources and professional guidance templates for graduate students and their faculty supervisors. Provided conflict resolution for student and faculty concerns. Provided oversight and guidance for the development of new residential courses. Facilitated admissions decisions and initial advisee/advisor matches for PhD/MS students. Organized, coordinated, and ran student admissions meetings with faculty. Developed procedures and guidelines for funding new and existing graduate students to mitigate biases and support junior faculty. Worked to create new systems to document organizational knowledge to define the role of PIC, organize documents, previous work, professional resources, and tools required to do the job. Supported administrative staff to verify that students met Master's portfolio and

graduation requirements. Served on the department curriculum committee. Prepared and submitted yearly reports for Middle States Assessment for PhD, World Campus MED, and resident MS programs. Coordinated promotional efforts for all LDT programs. Requested and submitted SARI requirement approvals.

World Campus Lead (2021-2022)

Learning, Design, and Technology Program

College of Education, The Pennsylvania State University

Oversaw the World Campus program for Learning, Design, and Technology program (LDT) for Online Masters and Certificate Students. Stepped in as World Campus lead while also Professor in Charge when our World Campus lead left two weeks before the start of the Fall 2021 semester. Took over former lead's advisees and required courses. Led recruitment efforts that included tracking online interest and sending monthly recruitment emails to hundreds of parties across all our online programs. Worked with faculty to ensure that certificate and MED students met milestones. Worked with World campus to identify and meet advertising and marketing needs. Maintained website and newsletter for MED and certificate students to provide guidance for enrolling in available courses, important milestones, program deadlines, and graduation requirements at the beginning, middle, and end of each term. Oversaw peer evaluation of summer adjunct instructors. Served as liaison to Greg Bond for the Army CP-32 program and communicated status to faculty.

Co-Chair for Conference Program (2017 Philadelphia, Pennsylvania; 2023 Montreal, Canada)

The International Conference Computer Supported Collaborative Learning

International Society of the Learning Sciences

Recruited, selected, and organized long and short papers, posters, technology demonstrations, workshops, symposiums, keynotes, and invited panels for presentation at annual conference. Implemented new procedures and practices to select and organize papers in meaningful ways that created a sense of community for peers. Communicated with and guided authors as they worked to submit final camera-ready papers for publication. Ensured the conference fully represented the field's diverse selection of researchers and professionals by inviting diverse scholars (racially, geographically, academically, and professionally diverse) to serve as discussants for conference long paper themes. Connected and promoted diverse scholars across the field. Created opportunities for scholars to discuss topics and meet with each other outside of formal talk settings.

Co-Chair for Early-Career (2021, Bochum, Germany; 2022 Hiroshima, Japan) and Mid-Career Workshop (2016 Singapore; 2017 Philadelphia, Pennsylvania)

The International Society of the Learning Sciences

Led multiple workshops to mentor and develop early and mid-career scholars. Successfully sought funding to support participant travel costs and technology used to connect and promote scholars. Designed training agendas and recruited cross-disciplinary scholars and program officers from different funding agencies to develop participant's understanding of research opportunities. Connected young scholars with senior mentors

and cross-disciplinary scholars to advance their careers. Created fun, informal events to build community and help scholars extend networks. Served as an ongoing mentor to previous participants.

Chair of the Technology Committee (2016 - 2018)

College of Education, The Pennsylvania State University

Provided leadership for the College of Education's Technology Committee. Organized and ran monthly meetings with other faculty across the college and Associate Dean Greg Kelly. Worked with the Technology Committee to establish a new call, selection procedures, and evaluation processes for a yearly Technology Innovation Grant; Provided oversight for funded projects. Monitored all technology issues and updates and communicated them to the college.

AREAS OF EXPERTISE

Computer-supported collaborative learning, cognition and development, sociocultural theory, human-computer interaction, design-based research methods, scenario-based design, interaction analysis, intelligent systems, play-based learning, technology-enhanced learning, socio-metacognition.

RESEARCH SUPPORT

External

2021 - 2026

Borge, M. (Senior Personnel), Van Hell, J. (PI), Dussias, P. (Co-PI), Jackson, C. (Co-PI), Miller, C. (Co-PI), Evans, J. (Senior Personnel), Lee, G. (Senior Personnel), Light, J. (Senior Personnel), Passonneau, R. J. (Senior Personnel)

National Science Foundation

NRT-FW-HTF: Linguistic diversity across the lifespan: Transforming training to advance human-technology interaction (LINDIV)

Budget: \$2,999,920

2021 - 2026

Borge, M. (Co-PI), Marimon, E. (PI), Cole, L. (Co-PI).

American Institutes for Research

Reimagining Reentry Simulations for Cultural Change: A Toolkit

Budget: \$324,875

2021 - 2023

Borge, M. (PI)

National Science Foundation

International Society of the Learning Sciences (ISLS) 2021: Reflecting the Past and Embracing the Future in ISLS Doctoral Consortium, Early and Mid-career Workshops

Budget: \$20,330

2016 - 2019

Borge, M. (Co-PI), Pérez-Edgar, K. (PI), Buss, K. (Co-PI)

National Institute of Health

Mobile eye-tracking as a tool for studying socioemotional development: Threat-related attention in a social context.

Budget: \$432,300

2013 - 2017

Borge, M. (PI), Rosé, C. (PI)

National Science Foundation

Fostering ecologies of online learners through technology augmented human facilitation.

Budget: \$557,913

2011 - 2014

Borge, M. (Co-PI), Rosé, C. (PI), Carroll, J. (Co-PI), Duchon, A. (Co-PI), Goggins, S. (Co-PI), Patterson, E. (Co-PI), Stahl, G. (Co-PI)

Office of Naval Research, Cognitive Knowledge Integration program

Towards optimization of macrocognitive processes: automating analysis of the emergence of leadership in ad hoc teams.

Budget: \$909,029

Internal

2014 - 2016

Borge, M. (PI)

Center for Online Innovation in Learning, The Pennsylvania State University

Developing an interactive cognitive support system to guide and improve collective thinking processes for online collaborative teams.

Budget: \$43,651

2014 - 2016

Borge, M. (Co-PI), Pérez-Edgar, K. (PI), Toomey-Zimmerman, H. (Co-PI)

Center for Online Innovation in Learning, The Pennsylvania State University

Design and implementation of a mobile eye-tracking system to assess parent-child interactions in informal learning environments.

Budget: \$43,659

2013 - 2015

Borge, M. (Co-PI), Shields, S. (PI)

Center for Online Innovation in Learning, The Pennsylvania State University

WAGES (Workshop Activity for Gender Equity Simulation): A model for the development of theoretically grounded online gaming environments.

Budget: \$40,544

PUBLICATIONS

(*Student, +Practitioner/Staff)

Peer Reviewed Journal Articles

23. Toprani, D., **Borge, M.** (2025). Ecological analysis of technology use among children in collaborative design contexts. *Journal of Computer Assisted Learning*. DOI:10.1111/jcal.13119
22. **Borge, M.**, Smith, B., & Aldemir, T. (2024). [Using generative AI as a simulation to support higher-order thinking](https://link.springer.com/article/10.1007/s11412-024-09437-0). *The International Journal of Computer Supported Collaborative Learning*. <https://link.springer.com/article/10.1007/s11412-024-09437-0>
21. **Borge, M.** & Xia, Y. (2023) [Beyond the individual: The regulation and negotiation of socioemotional practices across a learning ecosystem](https://doi.org/10.1080/10508406.2022.2157725), *Journal of the Learning Sciences*, 32:3, 325-375, DOI: 10.1080/10508406.2022.2157725
20. Soto, J., *Stoyer, M., **Borge, M.**, Mena, J. (2023). Accurate assessment of multicultural growth: The case for using retrospective reassessments. *Scholarship of Teaching and Learning in Psychology*. Advance online publication. <https://doi.org/10.1037/stl0000364>
19. **Borge, M.** (2023). [Beyond diversity, equity, and inclusion: Designing spaces that empower youth](https://doi.org/10.1016/j.ijcci.2022.100550). *International Journal of Child-Computer Interaction*, Volume 35, 100550, DOI:10.1016/j.ijcci.2022.100550
18. Soto, J. A., Mena, J. A., **Borge, M.**, Stoyer, M. R., Witherspoon, D. P., & Dawson-Andoh, N. A. (2023). Multicultural Competence Building Blocks: Multicultural Psychology Courses Promote Multicultural Knowledge and Ethnic Identity. *Teaching of Psychology*, 50(4), 307-321. <https://doi.org/10.1177/00986283211031854>
17. *Aldemir, T., **Borge, M.**, & Soto, J. (2022). [Shared meaning making about emotionally difficult topics](https://doi.org/10.1007/s11412-022-09375-9). *International Journal of Computer Supported Collaborative Learning* 17(3), 361-396. DOI:10.1007/s11412-022-09375-9
16. **Borge, M.**, *Aldemir, T. & *Xia, Y. (2022). [How teams learn to regulate collaborative processes with technological support](https://doi.org/10.1007/s11423-022-10103-1). *Educational Technology Research and Development* 70, 661–690. <https://doi.org/10.1007/s11423-022-10103-1>
15. **Borge, M.**, Soto, J. A., *Aldemir, T., & Mena, J. A. (2022). [Building multicultural competence by fostering collaborative skills](https://doi.org/10.1177/0098628320977421). *Teaching of Psychology* 49(1), 85-92. DOI:10.1177/0098628320977421
14. **Borge, M.**, *Ong Shiou, Y., & Goggins, S. (2020). [A Sociocultural approach to using social networking sites as learning tools](https://doi.org/10.1007/s11423-019-09721-z). *Educational Technology Research & Development* 68(3), 1089-1120. DOI:10.1007/s11423-019-09721-z
13. **Borge, M.**, *Toprani, D., *Yan, S., & *Xia, Y. (2020). [Embedded design: engaging students as active participants in the learning of human-centered design practices](https://doi.org/10.1080/08993408.2019.1688592). *Computer Science Education* 40(1), 47-71. DOI:10.1080/08993408.2019.1688592

12. **Borge, M.**, & Mercier, E. (2019). [Towards a micro-ecological approach to CSCL](#). *The International Journal of Computer Supported Collaborative Learning* 14, 219-235. DOI:10.1007/s11412-019-09301-6
11. **Borge, M.**, & +Shimoda, T. (2019). [Designing a computer-supported-collective regulation system: A theoretically informed approach](#). *Technology, Instruction, Cognition, & Learning* 11(2-3), 193-217. <https://www.oldcitypublishing.com/journals/ticl-home/ticl-issue-contents/ticl-volume-11-number-2-3-2019/ticl-11-2-3-p-163-192/>
10. *Fu, X., Nelson, E., **Borge, M.**, Buss, K., & Perez-Edgar, K. (2019). Stationary and ambulatory attention patterns are differentially associated with early temperamental risk for socioemotional problems: Preliminary evidence from a multimodal eye-tracking investigation. *Development and Psychopathology* 31(3), 971-988. DOI:10.1017/S0954579419000427
9. **Borge, M.**, *Shiou Ong, Y., & Rosé, C. (2018). [Learning to monitor and regulate collective thinking processes](#). *International Journal of Computer Supported Collaborative Learning* 13(1), 61-92. DOI:10.1007/s11412-018-9270-5
8. **Borge, M.** (2017). Rethinking how we support online learning in the age of isolation and information abundance: An introduction to the CREATE system. *International Journal on Innovations in Online Education*, 22. <http://onlineinnovationsjournal.com/streams/adaptive-and-personalized-learning-online/4e56bc28287c002d.html>.
7. **Borge, M.**, & White, B. Y. (2016). [Towards the development of socio-metacognitive expertise: An approach to developing collaborative competence](#). *Cognition & Instruction* 34(4), 323-360. DOI:10.1080/07370008.2016.1215722
6. +Shimoda, T., & **Borge, M.** (2016). [The Web of Inquiry: Computer support for playing epistemic games](#). *The International Journal of Information and Education Technology* 6(8), 8. DOI:10.7763/IJiet.2016.V6.760
5. Carroll, J. M., *Jiang, H., & **Borge, M.** (2015). Distributed collaborative homework activities in a problem-based usability engineering course. *Education and Information Technologies* 30(3), 589 -617. DOI:10.1007/s10639-013-9304-6
4. Carroll, J. M., **Borge, M.**, & *Shih, S.-I. (2013). Cognitive artifacts as a window on design. *Journal of Visual Languages and Computing* 24(4), 248-261. DOI:10.1016/j.jvlc.2013.05.001i.
3. *Jiang, H., *Ganoe, C., & **Borge, M.**, et al. (2010). Web-based workspace: Supporting student teams in usability engineering course. *Learning Technology* 12(3), 6–9.
2. *Ganoe, C. H., **Borge, M.**, *Jiang, H., Carroll, J. M., & Rosson, M. B. (2009). Usability case study learning objects for collaborative authentic education. *Learning Technology* 11(4), 27-31.
1. Carroll, J. M., & **Borge, M.** (2007). Articulating case-based learning outcomes and assessment. *International Journal of Teaching and Case Studies* 1(1), 33–49. DOI:10.1504/IJTCS.2007.014208

Edited Books

2. Smith, B. K., **Borge, M.**, Mercier, E., & Lim, K. Y. (Eds.). (2017). *Making a Difference: Prioritizing Equity and Access in CSCL, 12th International Conference on Computer Supported Collaborative Learning (CSCL) 2017*, Volumes 1-2. Philadelphia, PA: International Society of the Learning Sciences. ISBN: 978-0-9903550-2-1 (Volume 2, PDF Version) ISSN: 1573-4552
<https://cscl17.files.wordpress.com/2017/06/finalvol1cscl2017.pdf> (Volume 1) (565 pgs.)
<https://cscl17.files.wordpress.com/2017/06/finalvol2cscl2017.pdf> (Volume 2) (525 pgs.)
1. Damşa, C., **Borge, M.**, Koh, E., & Worsley, M. (Eds.). (2023). Proceedings of the 16th International Conference on Computer-Supported Collaborative Learning - CSCL 2023. Montreal, Canada: International Society of the Learning Sciences. ISBN: 978-1-7373306-8-4 (CSCL Proceedings, PDF Version) ISSN: 1573-4552
<https://cscl17.files.wordpress.com/2017/06/finalvol2cscl2017.pdf> (463 pgs.)

Book Chapters

Peer-reviewed

5. **Borge, M.**, & Rosé, C. (2021). “Quantitative approaches to language in CSCL”. In Ulric Cress, Jun Oshima, Carolyn Rosé, & Alyssa Wise (Eds.), *The International Handbook of Computer-Supported Collaborative Learning*.
https://doi.org/10.1007/978-3-030-65291-3_32.
4. *Toprani, D., *AlQahtani, M., & **Borge, M.** (2020). Examining technology use and evaluation in computer-supported collaborative learning: A systematic review. In J. Michael Spector, Barbara B. Lockee, & Marcus D. Childress (Eds.), *Learning, Design, and Technology. An International Compendium of Theory, Research, Practice, and Policy*. New York, NY: Springer Publishers. ISBN: 978-3-319-17727-4 (Print) 978-3-319-17727-4

Invited

3. **Borge, M.** (2016). Systems thinking as a design problem: A response to Litzinger and Minstrell et al. In R. Duschl & A. Bismack (Eds.), *Reconceptualizing STEM Education: The Central Role of Practices*. Routledge.
<https://www.routledge.com/Reconceptualizing-STEM-Education-The-Central-Role-of-Practices/Duschl-Bismack/p/book/9781138901049>.
2. Carroll, J., **Borge, M.**, *Ganoe, C., & Rosson, M. B. (2011). Articulating collaborative contributions to activity awareness. In E. Salas, S. M. Fiore & M. Letsky (Eds.), *Theories of Team Cognition* (pp. 209-242). London, England: Taylor and Francis Group. DOI:10.4324/9780203813140.
1. Carroll, J. M., Rosson, M. B., *Farooq, U., **Borge, M.**, *Convertino, G., Burge, J., & *Mentis, H. (2009). Activity awareness in complex teamwork. In Karl E. Carettas (Ed.), *Outsourcing, Team Work and Business Management*. New York: Nova Science.

Peer-Reviewed Published Conference Proceedings

30. *Aldemir, T., **Borge, M.**, & Soto, J. (2022). Perspective-taking as a tool to examine engaging in differences during shared meaning-making. In Weinberger, A., Chen, W., Hernández-Leo, D., & Chen, B. (Eds.), *Proceedings of the 15th International Conference on Computer-Supported Collaborative Learning-CSCL 2022* (pp. 463-466). Hiroshima, Japan: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/8335> (Short Paper)
29. *Toprani, D., **Borge, M.** (2022). Ecological approach to technology integration: A comparative analysis of technology in a collaborative learning environment. In Weinberger, A., Chen, W., Hernández-Leo, D., & Chen, B. (Eds.), *Proceedings of the 15th International Conference on Computer-Supported Collaborative Learning-CSCL 2022* (pp. 123-130). Hiroshima, Japan: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/8266> (Full Paper)
28. *Xia, Y., *Keith, C., *Yan, S., & **Borge, M.** (2022). An exploration of the individualistic and collective moves in relation to equitable participation in collaborative game design. In Chinn, C., Tan, E., Chan, C., & Kali, Y. (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences- ICLS 2022* (pp. 1413-1416). Hiroshima, Japan: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/8501> (Short Paper)
27. *Yan, S., *Keith, C., *Xia, Y., & **Borge, M.** (2022). Learning from and about failure in a hybrid collaborative game environment. In Chinn, C., Tan, E., Chan, C., & Kali, Y. (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences- ICLS 2022* (pp. 815-822). Hiroshima, Japan: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/9073> (Full Paper)
26. *Aldemir, T. & **Borge, M.**, Xia, Y. (2021). Exploration of Facilitation Strategies for Intergroup Dialogues in a CSCL Context. In C. E. Hmelo-Silver, B. De Wever, & J. Oshima, (Eds.), (2021). *Proceedings of the 14th International Conference on Computer-Supported Collaborative Learning - CSCL 2021*. Bochum, Germany: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/7300> (Full Paper)
25. *Aldemir, T., & **Borge, M.** (2020). Unpacking collaborative sense-making: The role of reflective accuracy in collaborative process quality. In M. Gresalfi and I.S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 3* (pp. 1709-1712). Nashville, TN: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/6405> (Short Paper)
24. *Xia, Y., & **Borge, M.** (2020). Collaborative agency that drives collaborative problem-solving and learning. In M. Gresalfi and I.S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 3* (pp. 1221-1228). Nashville, TN: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/6318> (Full Paper)

23. *Xia, Y., & **Borge, M.** (2020). Examining the relationship between calibration and reflection in an online discussion environment. In M. Gresalfi and I.S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences*, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 3 (pp. 1293-1300). Nashville, TN: International Society of the Learning Sciences. DOI:10.22318/icls2020.1293 (Full Paper)
22. *Yan, S., & **Borge, M.** (2020). Learning from design failure, collaboratively. In M. Gresalfi and I.S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences*, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 1 (pp. 302-309). Nashville, TN: International Society of the Learning Sciences. DOI:10.22318/icls2020.302. Winner of Best Student Paper award: <https://www.isls.org/conferences/icls-2020-online-conference>. <https://repository.isls.org/handle/1/6651> (Full Paper)
21. **Borge, M.**, *Aldemir, T., & *Xia, Y. (2019). Unpacking Socio-Metacognitive Sense-Making Patterns to Support Collaborative Discourse. In K. Lund, G.P. Niccolai, E. Lavoué, C.H. Gweon, & M. Baker (Eds.), *A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings*, 13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019. Volume 2, (pp. 320-327). Lyon, France: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/4420> (Short Paper)
20. *Toprani, D., *AlQahtani, M., & **Borge, M.** (2019). Children's Interaction around Digital Technology in Collaborative Learning Environments. In K. Lund, G.P. Niccolai, E. Lavoué, C.H. Gweon, & M. Baker (Eds.), *A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings*, 13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019. (2), (pp. 589-592). <https://repository.isls.org/handle/1/4463> (Short Paper)
19. *Xia, Y. & **Borge, M.** (2019). A Systematic Review of the Quantification of Qualitative Data in Proceedings of International Conferences on CSCL from 2005 to 2017. In K. Lund, G.P. Niccolai, E. Lavoué, C.H. Gweon, & M. Baker (Eds.), *A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings*, 13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019. Volume 2 (pp. 620-623). Lyon, France: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/4471> (Short Paper)
18. *Xia, Y., *Lee, H., & **Borge, M.** (2019). Exploring Students' Self-assessment on Collaborative Process, Calibration, and Metacognition in an Online Discussion. In K. Lund, G.P. Niccolai, E. Lavoué, C.H. Gweon, & M. Baker (Eds.), *A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings*, 13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019, Volume 2 (pp. 620-623). Lyon, France: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/4578> (Short Paper)
17. **Borge, M.**, & Mercier, E. (2018). Towards a cognitive-ecological framework in CSCL. In J. Kay, & R. Luckin (Eds.), *Rethinking Learning in the Digital Age, Making the Learning Sciences Count: The International Conference of the Learning Sciences (ICLS) 2018*,

Volume 1 (pp. 336-343). London, UK: International Society of the Learning Sciences.
<https://repository.isls.org/handle/1/753> (Full Paper)

16. **Borge, M.**, *Yan, S., +Shimoda, T., & *Toprani, D. (2016). Moving beyond making: Towards the development of ThinkerSpaces. In the Workshop Proceedings of (ACM)Sig CHI2016 (San Jose, California, May 7-12). ACM.
https://hci.sbg.ac.at/wp-content/uploads/2015/11/Moving_Beyond_Making.pdf. (Short Paper)
15. *JooYoung, S., *AlQahtani, M., *Ouyang, X., & **Borge, M.** (2017). Embracing students with visual impairments in CSCL. In B. K. Smith, M. Borge, E. Mercier, K. Y. Lim (Eds.), *Making a Difference: Prioritizing Equity and Access in CSCL*, 12th International Conference on Computer Supported Collaborative Learning (CSCL) 2017, Volume 2, (pp. 4). Philadelphia, PA: International Society of the Learning Sciences.
<https://repository.isls.org/handle/1/287> (Short Paper)
14. *Jung, Y., *Toprani, D., *Yan, S., & **Borge, M.** (2017). Children's participation in rule-making to mitigate process problems in CSCL. In B. K. Smith, M. Borge, E. Mercier, K. Y. Lim (Eds.), *Making a Difference: Prioritizing Equity and Access in CSCL*, 12th International Conference on Computer Supported Collaborative Learning (CSCL) 2017, Volume 2, (pp. 4). Philadelphia, PA: International Society of the Learning Sciences.
<https://repository.isls.org/handle/1/195> (Short Paper)
13. *Jung, J., *Yan, S. & **Borge, M.** (2016). Problems with different interests of learners in an informal CSCL setting. In Looi, C. K., Polman, J. L., Cress, U., and Reimann, P. (Eds.), *Transforming Learning, Empowering Learners: The International Conference of the Learning Sciences (ICLS) 2016*, Volume 1 (pp. 878-881). Singapore: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/333> (Short Paper)
12. *Shiou Ong, Y., & **Borge, M.** (2016). Joint idea-building in online collaborative group discussions. In C. K. Looi, J. L. Polman, U. Cress, and P. Reimann (Eds.), Looi, C. K., Polman, J. L., Cress, U., and Reimann, P. (Eds.), *Transforming Learning, Empowering Learners: The International Conference of the Learning Sciences (ICLS) 2016*, Volume 1 (pp. 878-881). (1), (pp. 8). Singapore: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/125> (Short Paper)
11. *Toprani, D., *Yan, S., & **Borge, M.** (2016). A comparative analysis of the collaboration process across different technologies. In *Proceedings of the 6th Annual Conference on Creativity and Fabrication in Education, FabLearn*. New York, NY, USA, 66-69.
<https://doi.org/10.1145/3003397.3003407> (Short Paper)
10. **Borge, M.**, *Shiou Ong, Y., & Rosé, C. P. (2015). Activity design models to support the development of high-quality collaborative processes in online settings. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, S. Ludvigsen, (Eds.), *Exploring the Material Conditions of Learning: The Computer Supported Collaborative Learning (CSCL) Conference 2015*, Volume 1 (pp. 427-434). Gothenburg, Sweden: The International Society of the Learning Sciences. <https://repository.isls.org/handle/1/437> Nominated for Best Paper Award. (Full Paper)
9. **Borge, M.**, & Carroll, J. M. (2014). Verbal equity, cognitive specialization, and performance. In *Proceedings of the 18th International Conference on Supporting Group*

Work. (pp. 215–225). ACM, New York, NY, USA. DOI:10.1145/2660398.2660418 (Full paper)

8. **Borge, M.**, & Goggins, S. (2014). Towards the facilitation of an online community of learners: Assessing the quality of interactions in Yammer. In J.L. Polman, E.A. Kyza, D. K. O'Neill, I. Tabak, W. R. Penuel, S. Jurow, K. O'Connor, T. Lee, and L. D'Amico (Eds.), *Learning and Becoming in Practice: The International Conference of the Learning Sciences (ICLS) 2014*, Volume 2 (pp. 753-760). Boulder, CO: International Society of the Learning Sciences. DOI:10.22318/icls2014.753 (Full Paper)
7. +Shimoda, T., White, B. Y., **Borge, M.**, & Frederiksen, J. (2013). Designing for science learning and collaborative discourse. In *Proceedings of the 12th International Conference on Interaction Design and Children* (pp. 247-256). New York, NY, ACM. DOI:10.1145/2485760.2485782. (Full Paper)
6. **Borge, M.**, *Ganoe, C. H., *Shih, S.-I., & Carroll, J. M. (2012). Patterns of team processes and breakdowns in information analysis tasks. In *Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work* (pp. 1105–1114). Association for Computing Machinery, New York, NY, USA. <https://doi.org/10.1145/2145204.2145369> (Full Paper)
5. **Borge, M.**, & White, B. Y. (2012). Supporting STEM learning with gaming technologies: Principles for effective design. In *Proceedings of the 8th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment* (pp. 7). Palo Alto, California: Association for the Advancement of Artificial Intelligence (AAAI) Press. <https://doi.org/10.1609/aiide.v8i5.12575>. <https://ojs.aaai.org/index.php/AIIDE/article/view/12575/12424> (Full Paper)
4. **Borge, M.** & Carroll, J. M. (2010). Using collaborative activity as a means to explore student performance and understanding. In Gomez, K., Lyons, L., & Radinsky, J. (Eds.), *Learning in the Disciplines: Proceedings of the 9th International Conference of the Learning Sciences (ICLS 2010)*, Volume 1, Full Papers (pp. 889-896). Chicago IL: International Society of the Learning Sciences. <https://repository.isls.org/bitstream/1/2768/1/889-896.pdf> (Full Paper)
3. Carroll, J. M., **Borge, M.**, *Ganoe, C., & *Jiang, H. (2010). Distributed collaborative homeworks: Learning activity management and technology support. In *Proceedings of IEEE Education Engineering (EDUCON)*. (pp. 1585-1594). Madrid: IEEE. <https://ieeexplore.ieee.org/document/5492338> (Full Paper)
2. *Jiang, H., Carroll, J. M., **Borge, M.**, & *Ganoe, C. H. (2010). Supporting partially distributed, case-based learning in an advanced undergraduate course in usability engineering. In *Proceedings - 10th IEEE International Conference on Advanced Learning Technologies, ICALT 2010* (pp. 594-596). doi: 10.1109/ICALT.2010.168. (Short Paper)
1. Carroll, J. M., **Borge, M.**, *Xiao, L., & *Ganoe, C. H. (2008). Realistic learning activity is not enough. In *Proceedings - 2008 Eighth IEEE International Conference on Advanced Learning Technologies* (pp. 3-7). doi: 10.1109/ICALT.2008.310 (Short Paper)

Posters, Technical Reports, and Symposia

19. **Borge, M.**, and Patterson, A. (2024). Equity Team (ET) 2024 Report. Presented to the Dean of the College of Education, the Associate Dean for Faculty Affairs, and the Associate Dean for Access, Equity, and Inclusion, The Pennsylvania University, University Park, PA. Local. Available online.
18. *Aldemir, T., **Borge, M.**, & Soto, J. (2023). How students talk about race and identity: Unpacking social-emotional talk. In Damşa, C., Borge, M., Koh, E., & Worsley, M. (Eds.), *Proceedings of the 16th International Conference on Computer-Supported Collaborative Learning - CSCL 2023* (pp. 404-405). International Society of the Learning Sciences, peer-reviewed/refereed. International. <https://repository.isls.org/handle/1/9253>
17. Mercier, E., Lawrence, L., Ahn, J., ... **Borge, M.**, et al. (2022). Mapping the complexities and benefits of research-design partnerships. In Chinn, C., Tan, E., Chan, C., & Kali, Y. (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences- ICLS2022* (pp. 1794-1801). Hiroshima, Japan: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/8587> (Symposium)
16. Strauß, S., Eberle, J., ... **Borge, M.**, (2022). Learning to build bridges: Promoting skills for complex collaboration across professional and cultural boundaries. In Weinberger, A., Chen, W., Hernández-Leo, D., & Chen, B. (Eds.), *Proceedings of the 15th International Conference on Computer-Supported Collaborative Learning-CSCL 2022* (pp. 517-524). Hiroshima, Japan: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/8347> (Symposium)
15. Zhu, G., Greisel, M., ... **Borge, M.**, et al. (2022). Regulation of teaching as an individual or collaborative process: Theory meets practice. In Chinn, C., Tan, E., Chan, C., & Kali, Y. (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences- ICLS2022* (pp. 1802-1809). Hiroshima, Japan: International Society of the Learning Sciences. <https://repository.isls.org/handle/1/8588> (Symposium)
14. *Toprani, D. & **Borge, M.** (2021). Technology's Role in Supporting Collaborative Interactions: An Ecological Approach. In C. E. Hmelo-Silver, B. De Wever, & J. Oshima, (Eds.), *Proceedings of the 14th International Conference on Computer-Supported Collaborative Learning - CSCL 2021*. Bochum, Germany: International Society of the Learning Sciences, peer-reviewed/refereed. International. <https://repository.isls.org/bitstream/1/7334/1/263-264.pdf>
13. *Jung, Y. J. & **Borge, M.** (2020). Investigating Children's Interactions Across Face-to-face and Virtual Spaces: Case Study of Mobile Eye-tracking Analysis. In Gresalfi, M. and Horn, I. S. (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2* (pp. 891-892). Nashville, Tennessee: International Society of the Learning Sciences, peer-reviewed/refereed. International.
12. *Xia, Y., *Lee, H., & **Borge, M.** (2019). Exploring Students' Self-assessment on Collaborative Process, Calibration, and Metacognition in an Online Discussion. In Lund, K., Nicolai, G. P., Lavoué, E., Hmelo-Silver, C., Gweon, G., & Baker, M. (Eds.), *A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in*

Collaborative Settings, 13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019, Volume 2 (pp. 945-946). Lyon, France: International Society of the Learning Sciences, peer-reviewed/refereed. International.

11. *Yan, S., & **Borge, M.**, (2019). Group's response to design for productive failure. *American Educational Research Association*, Toronto, Canada.
10. *Toprani, D., *Xia, Y., & **Borge, M.** (2018). Supporting SEL learning in progressive design contexts. In Kay, J. and Luckin, R. (Eds.), *Rethinking Learning in the Digital Age: Making the Learning Sciences Count*, 13th International Conference of the Learning Sciences (ICLS) 2018, Volume 3 (pp. 1573-1574). London, UK: International Society of the Learning Sciences, peer-reviewed/refereed. International.
9. **Borge, M.**, Rosé, C. P. (2016). Automated feedback on group processes: An experience report [Conference session]. In Barnes, T., Chi, M., Feng, M. (Eds.), *Proceedings of the 9th International Conference on Educational Data Mining, EDM 2016* (pp. 573–574). Raleigh, North Carolina, USA. International Educational Data Mining Society. <https://www.educationaldatamining.org/EDM2016/proceedings.html> (Poster)
8. **Borge, M.**, *Ong Shiou, Y., & Subramanian, P. (2015). Developing an interactive cognitive support system to guide and improve collective thinking processes, *Teaching and Learning with Technology Symposium*, The Center for Online Innovations in Learning, The Pennsylvania State University. Local.
7. *Salman, F., **Borge, M.**, & Zimmerman, H. A. (2015). Girls' digital storytelling: democratizing learning design through makerspaces. *The Annual Meeting of the American Educational Research Association*, The American Educational Research Association, Chicago, peer-reviewed/refereed. National.
6. *Ong Shiou, Y., & **Borge, M.** (2015). Assessing the quality of students' arguments in Yammer. *The International Conference of Computer Supported Collaborative Learning (CSCL) 2015*, The International Society of The Learning Sciences, Gothenburg, Sweden, peer-reviewed/refereed. International.
5. Rosé, C. P., Stahl, G., Goggins, S., Patterson, E., **Borge, M.**, Carroll, J. M., & Duchon, A. (2014). *Towards Optimization of Macrocognitive Processes: Automating Analysis of the Emergence of Leadership in Ad Hoc Teams*. Office of Naval Research: Report to Sponsor. Washington D. C.: The Office of Naval Research. Invited. <https://apps.dtic.mil/dtic/tr/fulltext/u2/a606908.pdf>.
4. Penstein Rosé, C., Goggins, S., Stahl, G., Patterson, E., Duchon, A., **Borge, M.**, & Carroll, J. (2013). *Towards Optimization of Macrocognitive Processes Automating the Analysis of the Emergence of Leadership in Ad Hoc Teams*. Presented to the Office of Naval Research, Command and Decision-Making Program, Washington D.C.
3. Carroll, J., **Borge, M.**, Ganoë, C., Shih, S., & Rosson, M. (2012). *Coordinating Multiple Conceptual Views to Construct and Verify Common Ground*. Presented to the Office of Naval Research, Command and Decision-Making Program, Washington D.C.

2. **Borge, M.**, Ganoë, C., Shih, S., Carroll, J., & Rosson, M. (2010). Characterizing and supporting activity awareness in information analysis tasks. Presented to the Office of Naval Research, CKI Program, Washington D.C.
1. *Convertino, G., **Borge, M.**, & Carroll, J. M. (2008). Case-based, collaborative learning in usability engineering, Teaching and Learning with Technology Symposium, Teaching and Learning with Technology, The Pennsylvania State University, peer-reviewed/refereed. Local.

Manuscripts in Progress

3. **Borge, M.**, Xie, X., Lee, D., Namaduri, A. (2027). "The construction paradox and the design of AI-supported collaboration." In Rupert Wegerif, Imogen CaseBourne, Amin Zhou, and Ingunn Johanne Ness (Eds.), *The Handbook of AI and the Future of Education*. Springer Nature.
2. **Borge, M.** (2027). "Designing a CSCL Course as a Transdisciplinary Learning Environment." In Carol Miller and Laura Cruz (Eds.), *Towards a Model of Transdisciplinary Education*. Springer Nature.
1. *Xia, Y., & **Borge, M.** (Manuscript in progress). How learners calibrate and reflect in online discussion environments. To be submitted to *Educational Technology Research & Development*.

Instructional Material, Software

2. Borge, M., Lee, T., & T. S. (2017). CREATE 2.0. create.psu.edu. Teaching and Learning with Technology (TLT) selected me as a faculty fellow to extend my previous system. This new generation of CREATE was implemented in Django (and several modern frameworks, e.g., REST, vue.js, jQuery, bootstrap, etc.), implemented by TK Lee txl20@psu.edu. I designed the front-end of the system in collaboration with TLT Studio (manager: Audrey Romano, UX/UI design: Robin Smail, Graphic design: Serena Epstein, HTML/CSS: Heather Harter; System administration: Jason Heffner jdh132@psu.edu). I worked with them to create professional development materials for teaching faculty to help them understand, assess, and support collaborative processes. These efforts resulted in a series of videos and guides for instructors (included in supplemental materials) and a new software platform to help faculty and students. The training program designer was Kathy Jackson, and the faculty programs manager was Bart Pursel.
1. Borge, M., & Shimoda, T. (2015). "CREATE: Collective Regulation & Enhanced Analysis Thinking Environment." Todd Shimoda. create.psu.edu. (retired). As part of NSF-funded research, I developed a prototype of a computer-supported collaborative training system to help students improve collaborative sense-making processes by learning how to monitor and regulate collaborative processes. The design was implemented by Todd Shimoda, todd@shimodaworks.com, in PHP. I tested this prototype in eight Penn State courses and used feedback from students and faculty to improve it over time.

PAPERS, PRESENTATIONS, SEMINARS, AND WORKSHOPS

Invited Keynotes, Presentations, and Guest Lectures

36. Borge, M., Hickey, D., & Vogel, F. (2024). Network of academic programs in the Learning Sciences: Reigniting NAPLeS. ISLS 2024, Buffalo, New York.
35. Borge, M. (2022). Equity and agency in CSCL. Invited talk for the TIER-Ed speaker series. University of Illinois Urbana-Champaign.
34. Borge, M. (2022). Technology-enhanced collaboration, equity, and empowerment. Invited talk for the Center for Research on Learning and Technology (CRLT) speaker series. Indiana University, Bloomington.
33. Borge, M., (2022). Quantifying language to promote collective regulation in online collaborative spaces. Distinguished Language Sciences Colloquia, The Pennsylvania State University, University Park, PA.
32. Borge, M. (2020). Supporting deep learning and collaboration in informal spaces. Invited Keynote for the 2020 Distance Library Services Conference. University Park, PA.
31. Borge, M., (2020). What is sociometacognition and why does it matter? Learning Sciences Seminar, The University of Utah, Salt Lake City, Utah. (COVID Remote).
30. Borge, M., (2019). Advanced mixed methods design: A discussion of Borge et al., 2018. Educational Psychology Special Topics Seminar, The Pennsylvania State University, University Park, PA.
29. Borge, M., (2019). Embedded modeling: Engaging students as active participants in the learning of human-centered design practices. Human-Computer Interaction Graduate Seminar Series, The Pennsylvania State University, University Park, PA.
28. Borge, M., (2019). Advanced mixed methods design: A discussion of Borge et al., 2018. Educational Psychology Special Topics Seminar, The Pennsylvania State University, University Park, PA.
27. Borge, M., (2018). A discussion of faculty service loads and gender. Department of Health & Human Performance: Graduate Seminar, University of Houston, Houston, TX.
26. Borge, M. (2017). Introduction to the CREATE system. Teaching and Learning with Technology Conference. University Park, PA.
25. Borge, M. (2017). Providing access to high-quality collaborative learning environments. Center for Innovative Research on Cyberlearning (CIRCL), Cyberlearning Conference, Washington D.C.
24. Borge, M. & Smith, B. (2017). Human-centered design: Important considerations for the design of future technologies. Center for Innovative Research on Cyberlearning (CIRCL), Cyberlearning Conference, Washington D.C.
23. Hmelo-Silver, C., Borge M., Chen, B., Mercier, E., & Wise, A. (2017). Computer supported collaborative learning: Theories, methods, and important considerations.

Center for Innovative Research on Cyberlearning (CIRCL), Cyberlearning Conference, Washington D.C.

22. Borge, M. (2017). Designing for productive collective sense-making: Why it matters. Symposium for Teaching and Learning with Technology, University Park, PA.
21. Borge, M. (2017). Towards the development of ThinkerSpaces: A conversation with Dr. Marcela Borge. LDT graduate student committee, College of Education, The Pennsylvania State University, University Park, PA.
20. Borge, M. (2017) Easy to use, intelligent support for collaborative projects. Faculty Development Brown Bag Seminar, College of IST, The Pennsylvania State University, University Park, PA.
19. Borge, M. (2016). Characterizing how students learn collaboratively, American Educational Research Association Annual Meeting, American Educational Research Association, Philadelphia, PA.
18. Borge, M. (2016). CREATE intelligent collaboration: Designing a system to help students become more competent collaborators – A conversation with Dr. Marcela Borge. Center for Online Learning Innovation, COIL conversations online webinar series, The Pennsylvania State University, University Park, PA.
17. Borge, M. (2015). Assessment and feedback on group processes: Supporting self-directed learning in team-based online courses. DANCE (Discussion Affordances for Natural Collaborative Exchange), Carnegie Mellon University, Pittsburgh, PA.
16. Borge, M., Greenburg, L., Perez-Edgar, K., Scherf, S., Smith-Simon, K. (2015). Work-life balance in academia. Department of Psychology, The Pennsylvania State University, University Park, PA.
15. Borge, M. (2015). Using multiple methods during epistemic games, Guest lecture, College of Education, The Pennsylvania State University, University Park, PA.
14. Borge, M. (2015). What is HCI?, Guest lecture, College of Information Sciences and Technology, The Pennsylvania State University, University Park, PA.
13. Borge, M. (2014). Design-based Research: Past projects and experiences. College of Education Design-Based Research Group Speaker Series, The Pennsylvania State University, University Park, PA.
12. Shields, S., & Borge, M. (2014). Stealth instruction through Games: WAGES (Workshop Activity for Gender Equity Simulation) Demonstrates Gender Inequity in the Workplace. 122nd Annual Convention of the American Psychological Association, Washington D.C.
11. Borge, M. (2013) Systems thinking as a design problem: A Response to Liztinger and Minstrell et al. Waterbury Summit, The Pennsylvania State University, University Park, PA.
10. Borge, M. (2012). Designing for learning in computer supported collaborative environments. College of Education Learning Sciences Group Speakers Series, The Pennsylvania State University, University Park, PA.

9. Borge, M. (2010). Role-mediated collaborative interactions. Four sections of IST 110, Introduction to Information, People and Technology, College of Information Sciences and Technology, Pennsylvania State University, University Park, PA.
8. Borge, M., Carroll, J., *Ganoë, C., & Rosson, M.B. (2010). Using speech acts to analyze team processes. Communication Analysis Workshop, Cognitive Engineering Research Institute, Tempe, AZ.
7. Borge, M. (2010). Understanding and supporting collaborative activities in undergraduate courses. College of Business, University of Almeria, Almeria, Spain.
6. Borge, M. (2009). Computer supported collaborative learning: Trade-offs, constraints, and support tools. College of Information Sciences, The University of Almeria, Almeria, Spain.
5. Borge, M. (2009). Face-to-face collaborative interactions: Objectives, problems, and possible solutions. College of Information Sciences, The University of Almeria, Almeria, Spain.
4. Borge, M. (2009). What are effective collaborative processes? College of Information Sciences and Technology IST 110, Introduction to Information, People and Technology, Pennsylvania State University, University Park, PA.
3. Borge, M. (2009). Setting and achieving goals. Office of Learning Initiative Teacher Internship Program, Pennsylvania State University, University Park, PA.
2. Borge, M. (2009). Working with teams. Office of Learning Initiatives Teacher Internship Program, Pennsylvania State University, University Park, PA.
1. Borge, M. (2008). Supporting student teams. College of Information Sciences and Technology course, Introduction to Information, People and Technology, Pennsylvania State University, University Park, PA.

Peer-Reviewed Workshops and Paper Presentations with Extended Abstracts

12. *Aldemir, T., & Borge, M., (2019). Socio-metacognitive processes in computer-supported collaborative learning. American Educational Research Association, Toronto, Canada.
11. *Yan, S., & **Borge, M.**, (2019). Group's response to design for productive failure. American Educational Research Association, Toronto, Canada.
10. *Toprani, D., *Yan, S., & Borge, M. (2018). A broader perspective on learning. International Workshop on Advanced Learning Sciences, Pittsburgh, PA.
9. Borge, M. (2018). Supporting socio-emotional skills for complex problem solving. International Workshop on Advanced Learning Sciences, Pittsburgh, PA.
8. Borge, M., *Toprani, D., & *Yan, S. (2017). Impacts of different forms of technology use on social learning processes. Society for Research on Child Development Conference, Austin, TX.

7. D'Angelo, C., Hmelo-Silver, C., Borge, M., Wise, A., & Chen, B. (2017). Establishing a foundation for collaborative process evaluation and adaptive support in CSCL. International Conference for Computer Supported Collaborative Learning, Philadelphia, PA.
6. Borge, M. (2013). Systems thinking as a design problem: A response to Litzinger and Minstrell et al., Waterbury Education Summit, Penn State, University Park.
5. Borge, M., *Shih, S., *Ganoe, C., & Carroll, J. (2011). Verbal equity and the intersection of artifacts, team process, and performance. INGroup Conference, Minneapolis, MN.
4. Borge, M., & White, B. (2009). Scaffolding collaborative processes with managerial roles: findings from a fifth-grade classroom. American Educational Research Association, San Diego, CA.
3. Borge, M., White, B., & *+Miller, T. (2006). Supporting collaborative groups in the classroom. American Educational Research Association, San Francisco, CA.
2. Borge, M., White, B., & *+Frederiksen, T. (2004). Regulating social interactions: Developing a functional theory of collaboration. Annual Meeting of the American Educational Research Association, Montreal, Quebec, Canada.
1. White, B., *+Frederiksen, T., & Borge, M. (2003). How can cognitive modeling, role-playing, and collaborative inquiry foster learners' meta-socio-cognitive development. Annual Meeting of the American Educational Research Association, San Diego, CA.

DESIGN & DEVELOPMENT PROJECTS

7. 2016-2018 CREATE 2.0 Developing a Multi-user, University-Wide System. Selected as a faculty fellow for my work with the CREATE prototype by the Teaching and Learning with Technology (TLT) group that supports educational technology across Penn State University. Worked with TLT to build a multi-user open-source version of CREATE and faculty development tools to scale the CREATE system university wide.
6. 2014-2017 CoLearnr User Testing and Beta Version. Worked with the CEO of Colearnr.com to test and revise a multi-platform, collaborative learning management system, develop requirements for children in K-12, and a beta version for kids.
5. 2013-2017 CREATE: Collaborative Regulation, Enhanced Analysis, and Thinking Environment prototype. Conducted research on the development of collaborative competencies and iteratively developed a computer supported collaborative training system to help students improve collaborative sense-making processes by learning how to monitor and regulate collaborative processes.
4. 2009-2012 Coordinated Multiple Views. Conducted research on activity awareness and development of a prototype to support group cognition and decision making for information analysts.

3. 2007-2012 Collaborative Case-Based Learning with the UCS Case-Based Library. Conducted research on group cognition, group interactions, development of self-regulatory tools and assessments for use in classroom settings.
2. 2001-2007 Inquiry Island/The Web of Inquiry. Conducted research, developed curriculum, and devised new learning assessments for a modifiable cognitive agent system to support science inquiry as part of the ThinkerTools research group.
1. 2001-2002 M.E.L.L.I.E. Pilot of a bilingual-math software program run by the Distributed Learning Workshop. Trained at the Office of Educational Research and Improvement (OERI), Stanford University, Palo Alto. Conducted requirements analysis and usability tests of learning system designed for Math students who were also English Language Learners. Video recorded sessions were transcribed into Spanish and then translated into English. Created databases to organize and store all data.

TEACHING

The Pennsylvania State University

Current Courses

LDT 100: World Technologies and Learning

LDT 566: Using Technology to Enhance Learning Processes

LDT 577: Computer Supported Collaborative Learning

LDT 843: Technology for Good and Evil

Past Courses

IST 110: Introduction to Information, People, and Technology.

IST 331: Introduction to Human-Centered Design

IST 413: Usability Engineering

IST 602: Supervised Experience in College Teaching

LDT 415: Systematic Instructional Development

LDT 575: Designing Experimental Research

LDT 594: CSCL Research Apprenticeship: Interaction Analysis

LDT 594: CSCL Research Apprenticeship: Communication and Content Analysis

SERVICE

External

Editorial Boards

- (2024 - present) Editorial Board, International Journal of Computer Supported Collaborative Learning
- (2018 - present) Editorial Advisory Board, Journal of Information and Learning Sciences
- (2017 - present) Senior Associate Editor, American Journal of Education

Ad Hoc Journal Reviewer

Educational Technology Research and Development
 Cognitive Science
 Computer Science Education
 Computers and Education
 Human-Computer Interaction
 International Journal of Artificial Intelligence in Education
 International Journal of Computer Supported Collaborative Learning
 Instructional Science
 Journal of Educational Psychology
 Journal of Learning Media and Technology
 Journal of the Learning Sciences
 Technology, Instruction, Cognition, & Learning

Conference Reviewer

The ACM Conference for SIGCHI
 The ACM Conference for Computer Supported Cooperative Work
 The ACM Interaction Design and Children (IDC) Conference
 The ACM International Joint Conference on Pervasive and Ubiquitous Computing
 The American Educational Research Association
 International Conference of the Learning Sciences
 International Conference of Computer Supported Collaborative Learning
 IFIP TC13 Conference on Human Computer Interaction

Other

National Science Foundation Panel Reviewer

2013- present Directorate for Computer and Information Science and Engineering and
 Directorate for STEM Education **(including large-scale investments)**

National Science Foundation Mentor

2015 Cyberlearning Mentor
 CIRCL's Workshop Series: Developing Strong Cyberlearning Proposals.
 Nominated by the Center for Innovative Research in Cyberlearning's (CIRCL)
 Advisory Board and/or NSF program officers to mentor new scholars.

National Science Foundation Project Advisory Board Member

2013-2016 Cyberlearning: Transforming Education
 NSF Cyberlearning EXP: RUI: Exploring Spatial-Temporal Anchored
 Collaboration in Asynchronous Learning Experiences
 Dorn, B. (PI), Ball, K. (Co-PI), Schroeder, L. (Co-PI)

Conference Program Committees and Other Service to the Profession

2024	The ACM Interaction Design and Children (IDC) Conference Associate Chair for the Long and Short Paper Track
2023	International Society of the Learning Sciences Program Co-Chair, International Conference of Computer Supported Collaborative Learning
2022	ISLS Early Career Workshop Co-Chair
2021	“CSCL in a Time of Crisis Guest Moderator” (5th and 6th installment of the series). https://www.isls.org/cscl-times-of-crisis-webinars/
2021	ISLS Early Career Workshop Co-Chair
2019- present	AERA LS/ALT SIG student best paper awards committee
2019- present	NAPLeS Abstracts Coordinator for ISLS Website.
2014- present	International Society of the Learning Sciences Education Committee & NAPLeS Network
2019-2021	International Society of the Learning Sciences CSCL Community member, Elected Position
2019	International Society of the Learning Sciences Advisory Committee, International Conference of Computer Supported Collaborative Learning
2017	International Society of the Learning Sciences Program Co-Chair: International Conference of Computer Supported Collaborative Learning
2017	International Society of the Learning Sciences Program Committee Member, International Conference for the Learning Sciences
2017	Mid Career Workshop Co-Chair, International Conference of Computer Supported Collaborative Learning
2017	Cyberlearning Program Committee Member
2016	Mid Career Workshop Co-Chair, International Conference for the Learning Sciences
2014	ACM GROUP Program Committee Member
2009	Human Computer Interaction Program Committee Member
2009	Interact Program Committee Member

Internal

The Pennsylvania State University

2024- present	Member, Promotion & Tenure Committee, College of Education
2024- 2025	Co-Chair, Faculty Search Committee, Learning, Design, and Technology Program
2023- 2024	Member, Faculty Search Committee, Learning, Design, and Technology Program
2023- 2024	Schreyer Honors College Faculty Selection Committee
2023- 2024	Member, Promotion & Tenure Committee, HCI Area, College of Information Sciences and Technology
2024- present	Chair, Graduate Studies and Research Policy Committee, College of Education
2023- present	Member, Faculty, Staff, and Student Awards Committee, College of Education
2022- present	Reviewer, Equity Fellows Program, College of Education
2021- present	Chair/Co-chair, Equity Team, College of Education

2021- present Member, Equity Coalition, College of Education
 2023- present Chair (2024)/Member(2023), Sabbatical Leave Committee, College of Education
 2021- present Member, Promotion & Tenure Committee, Learning, Design, and Technology program
 2022- present Research Associate, Center for the Study of Higher Education (CSHE)
 2021- present Course Development Committee, Learning, Design, and Technology program
 2021- 2022 Professor-in-Charge of Learning, Design, and Technology Program
 2021 - 2022 World Campus Coordinator, Learning, Design, and Technology program
 2020 - 2021 Member, Equity Team, College of Education
 2020 - 2021 Faculty Search Committee; Educational Psychology and the Institute for Computational and Data Sciences (Co-Hire)
 2020 Faculty of Color Advisory Group, College of Education
 2018 - 2021 Admissions Committee (MED program), Learning, Design, and Technology program
 2016 - 2018 Faculty Council, College of Education
 2019 Reviewer for NSF Advancing Informal STEM Learning down select, College of Education
 2017 Advisory Committee Member, Advising on the review of the Office of the Associate Dean for Research, Outreach, and Technology; College of Education
 2016 - 2018 Chair of the Technology Committee, College of Education
 2016 - 2017 New Courses Committee Member, Learning, Design, and Technology program
 2014 - 2015 Faculty Search Committee, Learning, Design, and Technology program
 2016 - 2017 Teaching and Learning with Technology Faculty Fellow, Pennsylvania State University
 2010 - 2019 Fast Start Project Mentor, Pennsylvania State University
 2015 - 2020 Imagineering with Games & Technology, After School Design Club, Program developer, supervisor, and facilitator, Grades 2-6; State College
 2013 Girlz Digital World, Summer Camp, Grades 6-8, supervisor & instructor, College of Information Sciences and Technology

STUDENTS SUPERVISED

Doctoral Degree Advisor

Ongoing Christine Mulgrave-King, World Campus Education Doctorate
 Ongoing Xie, Xingxing; Dissertation Chair, Learning, Design, and Technology
 2022 Yu Xia; Dissertation Chair, Learning, Design, and Technology
 2022 Dhvani Toprani; Dissertation Chair, Learning, Design, and Technology
 2022 Shulong Yan; Dissertation Chair, Learning, Design, and Technology
 2022 Tugce Aldamir; Dissertation Chair, Learning, Design, and Technology
 2021 Mona AlQahtani; Dissertation Chair, Learning, Design, and Technology

Doctoral Degree Committee Member

2024 - 2025 Annie Everett, Higher Education
 2024 - 2025 Hongyi Dong, Information Sciences and Technology
 2023 -2026 Breniel Malcolm, Learning, Design, and Technology
 2023 - 2024 Yao Lyu, Information Sciences and Technology

2015 - 2018	Jung, Yongju, Learning, Design, and Technology
2016 - 2019	Junxiu Yu, Learning, Design, and Technology
2017 - 2019	Jaclyn Dudek, Learning, Design, and Technology
2015 - 2017	Gamrat, Chris., Learning, Design, and Technology
2015 - 2018	Xiaoxue, Jessie, Psychology
2014 - 2018	Ong, Yann., Learning, Curriculum and Instruction
2014 - 2018	Nick LaLone, Learning, Information Sciences and Technology
2013 - 2014	Nochenson, Allan, Information Sciences and Technology

International Thesis Examination

2026 Ajanie Arachchige; University of Technology, Sydney, Australia.
 Doctoral Thesis titled ‘Supporting Information Problem Solving in the Age of
 Misinformation and Generative AI: A Socio-Technical Approach’.

Master’s of Education Advisor

2024 - present Kelly Eckerd
 2024 - present Laura Elizabeth Horner
 2024 - present Kaphil Long
 2023 - present Emily Cromley
 2023 - present Jessica Cotton
 2023 - present Michael William Massimo
 2023 - present Miranda Rae Moore,
 2023 - present Jacqueline Omlor
 2023 - present Jeffrey Whitaker
 2023 - present Jennifer Wagner
 2022 - present Wynter Adams
 2022 - present Amy Michele Sliman

SP2023	Emily Chu (Graduated)
FA2022	Tricia Ryan (Graduated)
FA2021	Rachel Young (Graduated)
FA2021	Katrina Baker (Graduated)
FA2021	Sara Kaplan (Transferred)
FA2021	Rachel Asper (Transferred)
SP2023	Sara Cambell (Graduated)
SP2023	Athena Turner-Frederik (Graduated)
SU2021	Stephanie Tolbert (Graduated)
FA2021	Jamie Hicks (Graduated)
SP2021	Mark Deluca (Graduated)
SP2021	Megan Strickland (Graduated)
SP2019	Courtney Losinger (Graduated)
SU2018	Rusty Seitz (Graduated)
FA2020	Randy Young (Graduate)
SU2018	Scott Koser (Graduated)
SU2019	Robbie Berry (Graduated)

SP2018	Megan Rose Hill (Graduated)
FA2017	Wei-Yu (Wendy) Yang (Graduated)
FA2017	Troy Deveney (Graduated)
FA2016	Misty Patcyk (Transferred)
FA2016	Linda Reese, (Graduated)
FA2016	Todd Shear (Withdrew).
SU2019	Sarah Stover (Graduated)
FA2015	Qing Zhang (Graduated)

Supervision of Funded Undergraduate Research

2025 - 2026	Amogh Namduri
2016 - 2017	Chatty, Ani
2016 - 2017	Hoffman, Kevin
2014 - 2017	Hanson, Emily., Undergraduate
2013 - 2017	Thompson, Shawn
2013 - 2015	Cunningham, Scott
2013 - 2015	Sanchez, Anthony
2013 - 2014	Mansur, Ariq

SPECIALIZED KNOWLEDGE

Research Methods and Analytic Techniques

Design-based research, quasi-experimental studies, case-based studies, and mixed-methods studies; Structured interviews, interaction analysis, content/communication analysis, social network analysis, case studies, and instrument development.

Usability/Design

Scenario-based design, task analysis, artifact analysis, paper prototyping, usability testing, and software design.

Field Research Audio/Video Recording, Compressing, and Analysis Techniques

Data collection of complex behaviors in fieldwork settings using audio mixers, cameras, microphone receivers, and transmitters, importing and compressing video files in various formats.

Spanish Language Proficiency

Native Spanish speaker with professional and conversational reading and writing fluency.

MEMBERSHIPS

American Educational Research Association (AERA)
 Association for Computing Machinery (ACM)
 Special Interest Group on Computer Human Interaction (ACM SIGCHI)
 Special Interest Group on Computer Science Education (ACM SIGCSE)

International Society for the Learning Sciences (ISLS)
Women in Cognitive Science