

EDUCATION

- 2020 – 2024 **Ph.D.**, Learning, Literacies, and Technologies
Specialization in Games & Mathematics Education
Cert., Statistics
Arizona State University, Tempe, AZ
Dissertation: Exploring Characteristics of Play in Solving Explicitly and Implicitly Mathematical Puzzles (*working title*)
Dissertation Committee: Elisabeth R. Gee (chair), Michelle Zandieh, Brian Nelson, Naneh Apkarian
- 2018 – 2020 **M.S.**, Teaching
Concentration in Mathematics
University of Maine, Orono, ME
Thesis Committee: Janet Fairman (co-chair), Natasha Speer (co-chair), Timothy Boester
Thesis: Understanding Social Factors in Small Group Work in Undergraduate Mathematics Classrooms
- 2011 – 2015 **B.S.**, Mathematics Education
Boston University, Boston, MA

PROFESSIONAL EXPERIENCE

- 2020 – Pres. **Graduate Research & Teaching Assistant**
Arizona State University, Tempe, AZ
- 2018 – 2020 **Graduate Teaching & Research Assistant**
University of Maine, Orono, ME
- 2016 – 2018 **7-12 Mathematics Teacher**
Maine Connections Academy, South Portland, ME

PEER-REVIEWED PUBLICATIONS

Refereed Journal Articles

- [1] Su, M., Ha, J., Pérez Cortés, L. E., **Bernier, J.**, Yan, L., Nelson, B., Bowman, C. D., & Bowman, J. Understanding Question-asking Quality in Museums through a Mobile App. *Accepted for publication in Educational Technology Research and Development*.
- [2] Gao, Y. B., **Bernier, J.**, Kessner, T. M., Pérez Cortés, L. E., & Gee, E. (2022). No player left behind: exploring the use of collaborative talk in a playfixing activity. *CoDesign*.
<https://doi.org/10.1080/15710882.2022.2129692>

- [3] Pérez Cortés, L. E., Gao, Y. B., Kessner, T. M., **Bernier, J.**, & Gee, E. R. (2022). Playfixing broken games: A design-oriented activity for engaging in designerly ways of thinking. *International Journal of Game-Based Learning*, 12(1), 1-21. <https://doi.org/10.4018/IJGBL.309127>
- [4] Jordan, M., **Bernier, J.**, & Zuiker, S. (2021). The Future Is Open and Shapable: Using Solar Speculative Fiction to Foster Learner Agency. *Literacy Research: Theory, Method, and Practice*, 70(1), 309-329. <https://doi.org/10.1177/23813377211028263>

Refereed Conference Publications

Full Papers (5+ pages)

- [5] **Bernier, J.** & Zandieh, M. (2022). Comparing Student Strategies in Vector Unknown and the Magic Carpet Ride Task. *Proceedings of the 2022 Conference on Research in Undergraduate Mathematics Education* (pp. 46-53). Boston, MA: Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education (SIGMAA on RUME).

Short Papers and Posters (1-4 pages)

- [6] **Bernier, J.**, Su, M., Yan, L., & Nelson, B. (2023). An Analysis of the Design and Pedagogy of DragonBox Algebra. To be published in the *Proceedings of the 17th International Conference of the Learning Sciences – ICLS 2023*. Montreal, QC, Canada: International Society of the Learning Sciences (ISLS).
- [7] **Bernier, J.**, Cabrera, L., Figueroa, F., Ha, J., Kramarczuk, K., Mak, J., Su, M., Xin, Y., Yan, L., Ketelhut, D. J., Nelson, B., & Terrell Shockley, E. (2022). Accessible Computational Thinking in Elementary Science. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences - ICLS 2022* (pp. 2024-2025). Hiroshima, Japan: ISLS.
- [8] Gao, Y., **Bernier, J.**, Kessner, T. M., Pérez Cortés, L. E., & Gee, E. R. (2021). No Player Left Behind: Exploring the Use of Collaborative Talk in a Playfixing Activity. In E. de Vries, Y. Hod, & J. Ahn (Eds.), *Proceedings of the 15th International Conference of the Learning Sciences - ICLS 2021* (pp. 977-978). Bochum, Germany: ISLS.
- [9] **Bernier, J.** (2020). Investigating the Influence of Gender Identity and Sexual Orientation in Small Group Work. In S.S. Karunakaran, Z. Reed, & A. Higgins (Eds.), *Proceedings of the 23rd Annual Conference on Research in Undergraduate Mathematics Education* (pp. 1173-1174). Boston, MA: SIGMAA on RUME.

CONFERENCE PRESENTATIONS, SYMPOSIA, AND WORKSHOPS

Peer-reviewed Regional, National, and International Conferences

- [1] **Bernier, J.**, Su, M., Yan, L., & Nelson, B. (2023, June). An Analysis of the Design and Pedagogy of DragonBox Algebra. Poster presented at the 2023 ISLS Annual Meeting, in Montreal, QC.
- [2] Gao, Y. B., **Bernier, J.**, & Gee, E. (2023, June). Game-Mediated Second Language Learning through Collaboratively Redesigning Broken Games. Presented at the 2023 Computer Assisted Language Instruction Consortium (CALICO) Annual Conference, held in Minneapolis, MN.
- [3] Terrell Shockley, E., Figueroa, F., Su, M., Yan, L., K. Kramarczuk, Xin, Y., Cabrera, L. Mak, J., **Bernier, J.**, Ha, J., Nelson, B. & Ketelhut, D. J. (2023, March) Making Computational Thinking Accessible to Multilingual Learners in Elementary Science. Poster presented at TESOL 2023 International Convention & English Language Expo, Portland, OR.
- [4] **Bernier, J.**, Cabrera, L., Figueroa, F., Ha, J., Kramarczuk, K., Mak, J., Su, M., Xin, Y., Yan, L., Ketelhut, D. J., Nelson, B., Terrell Shockley, E. (2022, June). Accessible Computational Thinking in Elementary Science. Poster presented at the 2022 ISLS Annual Meeting, held online.
- [5] Gee, E. R., **Bernier, J.**, Kessner, T. M., Pérez Cortés, L. E., Gao, Y. (2022, April). Exploring Patterns of Design Thinking in Playfixing Three Different Broken Games. In D. Rossi, (Chair): Breaking, Building, and Broadcasting: Analog and Digital Games and Affinity Spaces for Learning [Roundtable]. Talk presented at the American Education Research Association (AERA) 2022 Annual Meeting, held in San Diego, CA in a hybrid format.
- [6] Su, M., Pérez Cortés, L. E., Ha, J., Nelson, B., Bowman, C., Bowman, J., **Bernier, J.**, & Yan, L. (2022, April) Understanding visitors' question-asking quality in science museums through a question-asking mobile app. Poster presented at the AERA 2022 Annual Meeting, San Diego, CA.
- [7] **Bernier, J.** & Zandieh, M. (2022, February) Comparing Student Strategies in Vector Unknown and the Magic Carpet Ride Task. Talk presented at the 24th Annual Conference on Research in Undergraduate Mathematics Education (RUME), held in Boston, MA.
- [8] Kramarczuk, K., Cabrera, L., Ketelhut, D. J., Terrell-Shockley, E., Xin, Y., Mak, J., Nelson, B., **Bernier, J.**, Ha, J., Su, M., Yan, L., & Figueroa, F. (2022, January). A Professional Development Model for Integrating Computational Thinking and Culturally Responsive Teaching Practices into Elementary Science Practice. Poster presented at the Association for Science Teacher Education (ASTE) Annual Conference 2022, Greenville, SC.
- [9] Gee, E. R., Kessner, T. M., Pérez Cortés, L. E., Gao, Y., & **Bernier, J.** (2021, August). Virtual tabletop game play and design for diverse participants and purposes. Workshop facilitated at Foundations of Digital Games (FDG) 2021, held online.
- [10] Gao, Y., **Bernier, J.**, Kessner, T. M., Pérez Cortés, L. E., & Gee, E. R. (2021, June). No Player Left Behind: Exploring the Use of Collaborative Talk in a Playfixing Activity. Poster presented at the 2021 ISLS Annual Meeting, held online.

- [11] **Bernier, J.** (2021, April). When Group Work in Undergraduate Math Classrooms is Socially Productive but Mathematically Unproductive. Poster presented at the AERA 2021 Virtual Annual Meeting, held online.
- [12] Jordan, M., **Bernier, J.**, Zuiker, S., Miller, C., & Gabriel, A. (2020, December). Imagining Solar Energy Futures: Using futures thinking strategies to position youth as sustainability leaders. In M. Jordan (Discussant): From sustainability to solidarity: imagining ecological futures across our networks [Symposium]. Talk presented at the Literacy Research Association 70th Annual Conference, held online.
- [13] **Bernier, J.** (2020, February). Investigating the Influence of Gender in Small Group Work. Poster presented at the 23rd Annual Conference on RUME, held in Boston, MA.

Invited and Local Conferences

- [14] **Bernier, J.** & Yan, L. (2023, February). The Play and Experience of DragonBox Algebra. Poster presented at the 9th Annual Teachers College Doctoral Council Education Research Conference (TCDC Conference), held in Tempe, AZ.
- [15] Yan, L., & **Bernier, J.** (2023, February). Every Voice Matters: Building an Equitable Classroom Discussion Protocol to Include All Students. Poster presented at the 9th Annual TCDC Conference, held in Tempe, AZ.
- [16] **Bernier, J.** (2023, February). Playfixing Across Contexts and Content: An Interactive Presentation & Discussion. Workshop facilitated at the 9th Annual TCDC Conference, held in Tempe, AZ.
- [17] **Bernier, J.** (2023, February) Puzzles and Playful Mathematical Problem Solving. Talk presented at the 9th Annual TCDC Conference, held in Tempe, AZ.
- [18] **Bernier, J.** & Zandieh, M. (2022, November). Comparing Student Strategies in a Game-Based and Pen-and-Paper Task for Linear Algebra. Poster presented as the ASU College of Integrated Sciences and Arts Student Showcase in Mesa, AZ.
- [19] Mauntel, M.¹, Amresh, A., **Bernier, J.**, Bettersworth, Z., Plaxco, D., Zandieh, M. (2021, May). Vector Unknown: A Game about Linear Combinations. Presented virtually at the 2021 STEM For All Video Showcase.
- [20] **Bernier, J.** (2020, June). Investigating the Influence of Gender in a Small Group Interaction. Presented virtually at the RiSE Interdisciplinary Research Group Virtual Showcase.
- [21] **Bernier, J.** (2019, June). Background and Design for a Study on Gender Identity and Sexual Orientation in Small Group Work in Undergraduate Math. Poster presented at the 2019 RiSE Summer Conference, Orono, ME.

PARTICIPATION IN GRANT-FUNDED RESEARCH

¹ Presenters after first presenter listed alphabetically.

- 2021 – Pres. Collaborative Research: Accessible Computational Thinking in Elementary Science Classes within and across Culturally and Linguistically Diverse Contexts
NSF Award Nos.: 2101526, 2101039 Award Amounts: \$1,172,781, \$931,058
Principal Investigators: Diane Ketelhut (2101526), Brian Nelson (2101039)
Co-PI: Ebony Terrell Shockley (2101526)
- 2021 – 2023 Simulation-Based Inquiry-Oriented Linear Algebra
NSF Award No.: 171524 Award Amount: \$337,999
Principal Investigator: Michelle Zandieh
Co-PIs: Ashish Amresh, David Plaxco
- 2019 Integrating Computation into Science Teaching and Learning in Grades 6-8
NSF Award No.: 1842359 Award Amount: \$1,250,000
Principal Investigator: Susan McKay
Co-PIs: Mitchell Bruce, Harlan Onsrud, Sara Lindsay, James Fratini

WORK IN PROGRESS

Manuscripts in Review

- [1] Gee, E. R., **Bernier, J.**, Kessner, T. M., Pérez Cortés, L. E., & Gao, Y. Patterns of Design Thinking in Playfixing Broken Games: An Exploratory Study. *Under review at Simulation and Gaming.*
- [2] **Bernier, J.** & Zandieh, M. Comparing Student Strategies in a Game-Based and Pen-and-Paper Task for Linear Algebra. *Under review at Journal of Mathematical Behavior.*

Manuscripts in Preparation

- [3] Williams, J. L., Kessner, T. M., & **Bernier, J.** Representation and Historical Antecedents in New Media: The Queer-ious Case of Assassin's Creed. *Target Journal: Games and Culture*

Scholarship in Development

- [4] **Bernier, J.**, Kramarczuk, K., Terrell Shockley, E, Figueroa, F., Yan, L., Xin, Y., Mak, J., Su, M., Ketelhut, D. J., & Nelson, B. Examining How Teachers Incorporate Culturally Responsive Teaching into Lesson Plans During a Workshop. *Target Journal: TBD*
- [5] **Bernier, J.**, Heyer, N., Su, M., Yan, L., Ha, J., Islam, R., Jordan, M., & Nelson, B. A Design-Based Approach to Playful Algebra Learning with *DragonBox Algebra* (working title). *Target Journal: TBD*
- [6] **Bernier, J.** Theoretical and Analytical Framework for Defining and Identifying Characteristics of Play. *Target Journal: TBD.*
- [7] **Bernier, J.** Characteristics of Play in the Puzzle Solving and Mathematical Problem Solving of Undergraduates. *Target Journal: TBD*

TEACHING CERTIFICATION

2016 – 2028 **Mathematics**, Grades 7 – 12 (300), Maine
Initial Licensure issued 2016
Professional Licensure issued 2018, renewed 2023

COLLEGIATE TEACHING EXPERIENCE

Instructor of Record

Fall 2022 **TEL 111**, Exploration of Education
Arizona State University, Tempe, AZ
On Campus, ~15 students

Spring 2019 **MAT 107**, Elementary Descriptive Geometry
University of Maine, Orono, ME
On Campus, ~25 students

Collaborative Teaching

Spring 2020 **MAT 116**, Introduction to Calculus
University of Maine, Orono, ME
with Ayesha Maliwal-Bundy, M.A. (course coordinator) and Chris Smith, M.A.
On Campus/Moved online due to COVID-19, ~160 students

Teaching Assistant

Fall 2019 **MAT 126**, Calculus I
University of Maine, Orono, ME
Instructor of Record: Byungjae Son, Ph.D.
On Campus, ~75 students

Fall 2018 **MAT 126**, Calculus I
University of Maine, Orono, ME
Instructor of Record: Julien Rosen, Ph.D.
On Campus, ~75 students

Guest Speaker

Spring 2023 **FMS 365**, Video Games and Narrative
Arizona State University, Tempe, AZ
Instructor: Jeffrey Holmes, Ph.D.

GRANTS, FELLOWSHIPS, HONORS, AND AWARDS

Fellowships and General Awards

2023	ASU	University Graduate Fellowship	\$3,888
2022	ASU	Graduate College University Grant ²	\$10,000
	GMG	Girls Make Games Fellowship	\$2,000
	ASU	University Graduate Fellowship	\$3,576
2020	ASU	University Graduate Fellowship ³	\$5,236
	ASU	Mary Lou Fulton Teachers College Fellowship ⁴	\$80,000
	UMO	Most Outstanding MST Graduate	Non-Monetary

Research Funding

2022	ASU	MLFTC Mini-Grant	\$180
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Travel/Conference Funding

2023	ASU	Graduate and Professional Society Travel Award	\$950
	GMG	Games Developers Conference All-Access Pass	\$2,204
2022	ASU	Graduate and Professional Society Travel Award	\$950
	ASU	Graduate College Travel Award	\$300
2021	AERA	Division C Graduate Student Grant	\$65
	ASU	Graduate College Online/Remote Travel Award	\$180

SERVICE

Departmental

2023 – 2024	Communications Officer Teachers College Doctoral Council MLFTC, Arizona State University
2020	Lead Organizer RiSE Interdisciplinary Research Group Virtual Research Showcase RiSE Center, University of Maine
2019 – 2020	President

² Funds distributed across two semesters in 2022-2023 academic year.

³ Funds distributed across two semesters in the 2020-2021 academic year.

⁴ Funds distributed across eight semesters between the 2020-2021 and 2023-2024 academic years.

RiSE Interdisciplinary Research Group
RiSE Center, University of Maine

Programmatic

2021 – 2022 Student Representative
Learning, Literacies, and Technologies Program Committee
MLFTC, Arizona State University

Non-Academic

2023 – Pres. Chairman
2010 – 2023 Vice Chairman
2017 – 2020 Treasurer
Troop 160 Memorial Scout Camp
Lewiston, ME / Osborn, ME