

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] **Bernier, J.**, & Zandieh, M. (2024). Comparing student strategies in a game-based and pen-and-paper task for linear algebra. *The Journal of Mathematical Behavior*, 73(1).
<https://doi.org/10.1016/j.jmathb.2023.101105>
- [2] Su, M., Ha, J., Pérez Cortés, L. E., **Bernier, J.**, Yan, L., Nelson, B., Bowman, C. D., & Bowman, J. (2023). Understanding museum visitors' question-asking through a mobile app. *Educational Technology Research and Development*, 71(6), 2483–2506.
<https://doi.org/10.1007/s11423-023-10265-6>

- [3] Gao, Y. B., **Bernier, J.**, Kessner, T. M., Pérez Cortés, L. E., & Gee, E. R. (2023). No player left behind: exploring the use of collaborative talk in a playfixing activity. *CoDesign*, 19(2), 128–141. <https://doi.org/10.1080/15710882.2022.2129692>
- [4] 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>
- [5] 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)

- [6] **Bernier, J.** (2024). A Framework for Characterizing and Identifying Playful Mathematical Experiences. To be published in *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education*. Omaha, NE: Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education (SIGMAA on RUME).
- [7] **Bernier, J.** & Zandieh, M. (2022). Comparing Student Strategies in Vector Unknown and the Magic Carpet Ride Task. In Karunakaran, S.S. & Higgins, A. (Eds.), *Proceedings of the 24th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 46-53). Boston, MA: SIGMAA on RUME.

Short Papers and Posters (1-4 pages)

- [8] **Bernier, J.**, Su, M., Yan, L., & Nelson, B. (2023). An analysis of the design and pedagogy of DragonBox algebra. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 1873-1874). Montreal, QC: International Society of the Learning Sciences (ISLS).
- [9] **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.
- [10] 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.

- [11] **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.**, Heyer, N., Su, M., Yan, L., Islam, R., Ha, J., Jordan, M., & Nelson, B. C. (2024, April). A Design-Based Approach to Playful Algebra Learning with DragonBox Algebra. In Lei, Qingli [Session Organizer]: Play, Motivation and Engagement in Math Learning [Paper Session]. To be presented at the American Educational Research Association (AERA) 2024 Annual Meeting, in Philadelphia, PA.
- [2] Kramarczuk, K., **Bernier, J.**, Figueroa, F., Yan, L., Terrell Shockley, E., Coen, A., Su, M., Nelson, B. C., Xin, Y., & Ketelhut, D. J. (2024, April). Elementary Teachers' Positional Identities and Dispositions Towards Culturally Responsive Computational Thinking-Integrated Science. In Morandi, S. [Chair] & Madkins, T. C. [Session Organizer]: Sociopolitical Issues in STEM Teacher Education [Roundtable Session]. To be presented at the AERA 2024 Annual Meeting in Philadelphia, PA.
- [3] Yan, L., **Bernier, J.**, Su, M., Islam, R., & Nelson, B. C. (2024, April). Every Voice Matters: Designing an Equitable Classroom Discussion Observation Protocol to Engage All Students. In Davey, B. [Chair] & Bae, C. L. [Session Organizer]: Creating New Spaces and Methods for Equity in Science Teaching and Learning [Roundtable Session]. To be presented at the AERA 2024 Annual Meeting in Philadelphia, PA.
- [4] Kessner, T. M., **Bernier, J.**, Williams, J., Gee, E. R. (2024, April). Ludoepistemic Consonance in Pre-Service Social Studies Teachers' (Re)Design of Monopoly as a Classroom Simulation. In Zhao, X. [Chair] & Sinclair, K. [Session Organizer]: Promising Practices in Social Studies Teaching and Learning [Roundtable Session]. To be presented at the AERA 2024 Annual Meeting in Philadelphia, PA.
- [5] **Bernier, J.**, Kramarczuk, K., Terrell Shockley, E, Figueroa, F., Yan, L., Xin, Y., Mak, J., Su, M., Ketelhut, D. J., & Nelson, B. (2024, March). CT+CRT+Science: Pathways to Integration in Elementary Teachers' Lesson Plans. To be virtually presented at the 2024 Annual International Conference of the National Association for Research in Science Teaching (NARST).
- [6] **Bernier, J.** (2024, February). A Framework for Characterizing and Identifying Playful Mathematical Experiences. To be presented at the 26th Annual Conference on Research in Undergraduate Mathematics Education (RUME), in Omaha, NE.
- [7] **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.

- [8] 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.
- [9] 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.
- [10] **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.
- [11] 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]. Presented at the AERA 2022 Annual Meeting, held in San Diego, CA in a hybrid format.
- [12] 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.
- [13] **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 RUME, held in Boston, MA.
- [14] 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.
- [15] 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.
- [16] 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.

- [17] **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.
- [18] 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.
- [19] **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.

Committee-Reviewed, Invited, and Local Conferences

- [20] **Bernier, J.** (2024, February). Exploring Playfulness in Solving Puzzles and Mathematical Problems. Poster presented at the 10th Annual Teachers College Doctoral Council Education Research Conference (TCDC Conference), held in Tempe, AZ.
- [21] Yan, L., Xin, Y., Figueroa, F., **Bernier, J.**, Terrell Shockley, E., Nelson, B., Ketelhut, D. J. (2024, February). Practical Strategies for Culturally Responsive Teaching in Computational Thinking Integrated Elementary Science Lessons. Poster presented at the 10th Annual TCDC Conference, held in Tempe, AZ.
- [22] **Bernier, J.** (2023, October). Hands-On with Playfixing: Exploring Using ‘Broken’ Tabletop Games to Experience Design. Workshop facilitated at the North American Simulation and Gaming Association (NASAGA) 2023 Annual Meeting, held in St. Louis, MO.
- [23] **Bernier, J.** & Yan, L. (2023, February). The Play and Experience of DragonBox Algebra. Poster presented at the 9th Annual Teachers TCDC Conference, held in Tempe, AZ.
- [24] 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.
- [25] **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.
- [26] **Bernier, J.** (2023, February) Puzzles and Playful Mathematical Problem Solving. Talk presented at the 9th Annual TCDC Conference, held in Tempe, AZ.
- [27] **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.

[28] 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.

[29] **Bernier, J.** (2020, June). Investigating the Influence of Gender in a Small Group Interaction. Presented virtually at the RiSE Interdisciplinary Research Group Virtual Showcase.

[30] **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

2021 – 2024	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 Information and Learning Sciences.*
- [2] Williams, J. L., Kessner, T. M., & **Bernier, J.** Representation and Historical Antecedents in New Media: The Queer-ious Case of Assassin's Creed. *Under review at Games and Culture.*
- [3] **Bernier, J.**, Kramarczuk, K., Terrell Shockley, E, Figueroa, F., Yan, L., Xin, Y., Mak, J., Su, M., Ketelhut, D. J., & Nelson, B. Exploring Culturally Responsive Teaching Practices in Computational Thinking + Science Lesson Planning. *Under review at TechTrends.*

¹ Presenters after first presenter listed alphabetically.

Manuscripts in Preparation

- [4] **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: Digital Experiences in Mathematics Education*
- [5] Yan, L., Xin, Y., Figueroa, F., **Bernier, J.**, Terrell Shockley, E., Nelson, B., Ketelhut, D. J. Practical Strategies for Culturally Responsive Teaching in Computational Thinking Integrated Elementary Science Lessons (working title). *Target Journal: TBD*

Scholarship in Development

- [6] Kessner, T. M., **Bernier, J.**, Williams, J. L., & Gee, E. R. Ludoepestemic Consonance in Pre-Service Social Studies Teachers' (Re)Design of Monopoly as a Classroom Simulation (working title). *Target Journal: TBD*
- [7] **Bernier, J.** Characteristics of Play in the Puzzle Solving and Mathematical Problem Solving of Undergraduates (working title). *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 2018, 2019 **MAT 126**, Calculus I
 University of Maine, Orono, ME
 2019 Instructor of Record: Byungjae Son, Ph.D.
 2018 Instructor of Record: Julien Rosen, Ph.D.
 On Campus, ~75 students per semester

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**

2024	ASU	University Graduate Fellowship	\$2,720
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

2024	ASU	LLT Program Committee Research Award	\$605
	ASU	Howard Sullivan Learning Technologies Grant	\$180
2023	ASU	Graduate College/GPSA Graduate Research Grant	\$2,000
2022	ASU	MLFTC Mini-Grant	\$180

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.

Travel/Conference Funding

2024	ASU	MLFTC Travel Grant	\$900
	ASU	Graduate and Professional Society Travel Award	\$950
2023	ISLS	Presenter Hardship Fund	\$430
	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**


2024	Organization Committee Member 10 th Annual Teachers College Doctoral Council Conference MLFTC, Arizona State University
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 RiSE Interdisciplinary Research Group RiSE Center, University of Maine

Programmatic

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

Non-Academic

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2023 – Pres.

2010 – 2023

2017 – 2020

Chairman

Vice Chairman

Treasurer

Troop 160 Memorial Scout Camp

Lewiston, ME / Osborn, ME