Justice Toshiba Walker

Department of Teaching and Learning, Policy and Leadership
College of Education
University of Maryland
3942 Campus Dr, College Park, MD 20742
jtwalker@umd.edu | www.JusticeWalker.com | @JusticeToshiba

Appointments

Assistant Professor, University of Maryland, College Park August 2025-current
Teaching and Learning, Policy and Leadership, College of Education

Assistant Professor, The University of Texas at El Paso August 2020-August 2025
STEM Education, Teacher Education, College of Education
Biology (by courtesy), Biological Sciences, College of Science

Postdoctoral Fellow, University of Pennsylvania August 2019
Teaching, Learning, and Leadership Division

Education

Ph.D. University of Pennsylvania Graduate School of Education August 2019
Thesis Title: *When Biology Learning Paradigms Shift: What Middle School Students Know, Think, and Learn about Synthetic Biology*
Dissertation Committee: Yasmin B. Kafai (chair), Iris Tabak, Sigal Ben-Porath

M.S. University of Pennsylvania School of Engineering and Applied Science May 2012
Concentration: Biopharmaceutical & Engineering Biotechnologies
Advisor: Scott L. Diamond

B.S. University of Miami College of Arts and Sciences May 2005
Concentration: Biology and English Literature
Thesis Title: *Non-Steroidal Anti-Inflammatory Drugs Elicit Apoptosis in Colon Cancer Cells via Caspase-dependent Pathways* Advisor: Michael S. Gaines

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Extramural Funding and Sponsored Research (funded total: $4,265,192):

The University of Texas at El Paso College of Education
NSF Grant #2415876: *Introducing Synthetic Biology Using Co-Designed, Culturally Responsive BioMaker Activities for Family Engagement in Underserved Communities.* ***Principal Investigator:*** **Justice T. Walker** (University of Texas at El Paso). Co-Principal Investigator: Lisa Scheifele (Loyola University of Maryland) Foad Hamidi (University of Maryland, Baltimore County), Alysha Swann (La Nube STEAM Discovery Center). 9/01/2025-8/31/2028 Amount: **$1,686,589**.

The University of Texas at El Paso College of Education
NSF Grant #2329579: *Postdoctoral Fellows as Leaders in Next-Generation Computer Science Education Research-Practice Partnerships Serving Minoritized Communities.* ***Co-Principal Investigator:*** **Justice T. Walker** (University of Texas at El Paso), Pei-Ling Hsu, Elsa Villa (University of Texas at El Paso). Principal Investigator: Johannes Strobel (University of Texas at El Paso). 9/01/2023-8/31/2026 Amount: **$1,202,712**.

The University of Texas at El Paso College of Education

NSF Grant #1342582: *An Online Tool to Support Productive Struggles and Improve the Self-Efficacy of Undergraduate Students in Introductory Computer Science Courses.* **Co-Principal Investigator: Justice T. Walker** (University of Texas at El Paso) and Monika Akbar (University of Texas at El Paso). Principal Investigator: Mahmud Hossain (University of Texas at El Paso). 6/15/2022-5/31/2025 Amount: **$299,950**.

The University of Texas at El Paso College of Education
U.S. Department of Education: *Building Capacity in Computer Science Education at the University of Texas at El Paso.* **Co-Principal Investigators: Justice T. Walker** (University of Texas at El Paso), Joyce Cashman (University of Texas at El Paso), and Kristopher Yeager (University of Texas at El Paso). Principal Investigator: Elsa Villa (University of Texas at El Paso). 10/1/2021-9/30/2025 Amount: **$734,992**.

The University of Texas at El Paso College of Education
NSF Grant #2137708: *BPC-DP Coding Like a Data Miner: A Culturally Relevant Data Analytics Intervention for High School Students.* **Principal Investigator: Justice T. Walker** (University of Texas at El Paso). Co-Principal Investigator: Omar Badreddin (University of Texas at El Paso) and Amanda Barany (Drexel University). 10/01/2021-9/30/2023 Amount: **$335,949**.

University Research Institute Grant #14648663: *Synthetic Biology and Me: A Culturally Relevant Secondary School Professional Development Pilot Implementation.* **Principal Investigator: Justice T. Walker** (University of Texas at El Paso). Amount: **$5,000**.

University of Pennsylvania Graduate School of Education
NSF Grant #1623018: *bioMAKERlab: A Wetlab and Starter Activities for Promoting Synthetic Biology in High School Classes and Workshops*. Advised on the development of an open source low cost portable wet lab device and corresponding user interface. Co-developed: (1) three synthetic biology curriculum activities for middle and high school students, (2) website for curriculum dissemination, (3) research design to assess student inquiry practices, argumentation, knowledge building, perspectives, literacy, learning and wet lab device usability. Implemented all aspects of research design including qualitative and quantitative research instrument development, data collection, processing, and analysis, (4) institutional review board protocols and modifications needed to study more than 150 Philadelphia middle and high school students. Co-authored and presented peer reviewed journal and conference proceedings on research findings. Principal Investigator: Yasmin B. Kafai (University of Pennsylvania). Co-Principal Investigator: Orkan Telhan (University of Pennsylvania) and Karen Hogan (University of Pennsylvania).

NSF Grant #1840933: *Workshop for Connecting Computational Thinking with Synthetic Biology Applications in K-16 Education*. Co-organized: (1) three *learn.design.bio* public workshops that convened a multinational group of computer scientists, biologists, learning scientists, educators, and early career scholars to discuss synthetic biology and engineering biology learning in K-16 formal and informal environments, (2) early career symposium and travel grant award call for submissions, application reviews, and award notifications, (3) workshop registration, logistics, and (4) workshop website with participant lists and workshop program. Principal Investigator: Yasmin B. Kafai (University of Pennsylvania). Co-Principal Investigators: Orkan Telhan (University of Pennsylvania) and Karen Hogan (University of Pennsylvania).

NSF Grant #1742124: *Collaborative Research: Debugging by Design: Developing a Tool Set for Debugging with Electronic Textiles to Promote Computational and Engineering Thinking in High School*. Co-developed: (1) research design to assess student computational thinking, debugging practices, perceived competence, and learning. Implemented all aspects of research design, including qualitative and quantitative research instrument development, data collection, processing, and analysis, (2) institutional review board protocols and modifications needed to study more than 200 Los Angeles high school students. Co-authored and presented peer-reviewed journal and conference proceedings on research findings. Principal Investigator: Yasmin B. Kafai (University of Pennsylvania).

NSF Grant #1509245: *Collaborative Research: ET-ECS: Electronic Textiles for Exploring Computer Science with High School Students & Teachers to Promote Computational Thinking and Participation*. Co-developed: (1) research design to examine electronic-textile-based computer science learning assessments, student collaboration practices, student perceptions about computer science, and computational practices, (2) institutional review board protocols and modifications needed to study more than 400 high school students in Philadelphia and Los Angeles. Implemented all aspects of research design, including qualitative and quantitative research instrument development, data collection, processing, and analysis. Co-authored and presented peer-reviewed journal and conference proceedings on research findings. Principal Investigator: Yasmin B. Kafai (University of Pennsylvania).

University of Pennsylvania College of Arts and Sciences 2012-13
Graduate volunteer research on microRNA regulatory patterns in Arabidopsis *Thaliana.* Leveraged biotechnologies including, Agarose gel electrophoresis, Next Generation Sequencing, and National Center for Biotechnology Information (NCBI) database searches. Principal Investigator: Brian D. Gregory (University of Pennsylvania).

University of Miami College of Arts and Sciences 2002-05
Howard Hughes Medical Institute Grant # 52003758: Undergraduate research on the effects of non-steroidal anti inflammatory (NSAID) compounds on a human cell line of colon cancer cells. Carried out eukaryotic tissue culture and microscopy (e.g., confocal fluorescence microscopy) and genetic screens (e.g., polyacrylamide agarose gel electrophoresis). Principal Investigator: Michael S. Gaines and James H. Wyche (University of Miami).

Primary Awards (funded)

National Science Foundation Grant #2415876 award $1,686,589 (PI)	fall 2024
National Science Foundation Grant #2215849 award $1,202,712 (co-PI)	fall 2023
National Science Foundation Grant #2215849 award $299,950 (co-PI)	fall 2022
U.S. Department of Education award P120A220008 $734,992 (co-PD)	spring 2022
SynBioBeta: Race Against the Clock: Next Generation Gonna-Be award: $1,995	spring 2022
National Science Foundation Grant #2137708 award $335,949 (PI)	fall 2021
The Learning Analytics in STEM Education Research (LASER) Institute Award: $1,500	summer 2021
UTEP University Research Institute award $5,000 (PI)	spring 2021
National Science Foundation sponsored Doctoral Consortium Fellowship award $1,500	summer 2018
National Science Foundation Internship Grant #1623018 supplemental funding award $50,000	fall 2018
National Science Foundation Graduate Research Fellowship Program Honorable Mention	2017
GSE Student Government President's Community Leadership Award	2017
Howard Hughes Medical Institute Scholarship Grant # 52003758 award $160,000	2001-05

Primary Awards (unfunded)

National Science Foundation Grant #2507164 $899,923 (role: PI) [RETURNED]	spring 2025
National Science Foundation Grant #2443489 $1,342,330 (role: PI) [DECLINED]	spring 2025
National Science Foundation Grant #2407412 $199,987 (role: Co-PI) [DECLINED]	spring 2025
National Science Foundation Grant #2342757 $1,197,439 (role: PI) [DECLINED]	spring 2022
National Science Foundation Grant #2314300 $998,502 (role: PI) [DECLINED]	spring 2022
National Science Foundation Grant #2303033 $849,992 (role: PI) [DECLINED]	spring 2022
National Science Foundation Grant #2215437 $756,640 (role: PI) [DECLINED]	spring 2022
National Science Foundation Grant #2127204 subaward $22,235,872 (role: PI) [DECLINED]	fall 2021

Journal Publications: Peer-Reviewed

Barany, A., Acquah, A., Barrera, A., Johnson, M., Reza, S., **Walker, J.T.** (2024). Empowering Pedagogies in Sandbox Data Science: Navigating the Intersection of Computing, Big Data, and Social Media for Enhanced Learning. https://doi.org/10.1108/ILS-12-2023-0211.

Walker, J.T. (revise and resubmit). A Case Study of Middle Schoolers' Use of Context to Explain and Justify Their Attitudes about Synthetic Biology.

Walker, J.T., Barany, A., Acquah, A., Reza, S., Del Rio Guzman, K., Johnson, M., Badreddin, O., Barrera, A. (2024). Coding Like a Data Miner: A Sandbox Approach To Computing-Based Data Science for High School Student Learning. EngageCSEdu. ACM. https://doi.org/10.1145/3631986.

Walker, J.T. (2024). Democratizing Biology through Informal Learning. Grow Magazine. Ginkgo Bioworks. Boston, MA. https://www.growbyginkgo.com/.

Rahimi, S., **Walker, J.T.**, Shin, J., Lin, L. (2023). Toward Defining and Assessing Creativity in Sandbox Games. Creativity Research Journal. https://doi.org/10.1080/10400419.2022.2156477. Impact Factor (IF): 2.032, 5 Year IF (IF5Y): 2.796, Scopus Q1.

Walker, J.T., Stamato, L., Asgarali-Hoffman, N., Hamidi, F., Scheifele, L. (2022). Community Labs in the United States: BioMakerspaces for Life Science Learning and Doing. Public Understanding of Science. https://doi.org/10.1177/09636625221135858. IF: 3.702, IF5Y: 4.254, Scopus Q1.

Walker, J.T. (2021). Middle School Student Knowledge and Attitudes Toward Biotechnology. Journal of Science Education and Technology. https://doi.org/10.1007/s10956-021-09919-y. IF: 3.419, IF5Y: 3.969, Scopus Q1.

Walker, J.T. & Kafai, Y. B. (2021). The Biodesign Studio: Constructions and Reflections of High School Students on Making with Living Media. British Journal of Educational Technology. https://doi.org/10.1111/bjet.13081. IF: 5.628, IF5Y: 5.606, Scopus Q1.

Fields, D.A., Kafai, Y.B., Morales-Navarro, L., **Walker, J.T.** (2021). Debugging by Design: A Constructionist Approach to High School Students' Crafting and Coding of Electronic Textiles as Failure Artifacts. British Journal of Educational Technology. https://doi.org/10.1111/bjet.13079. IF: 5.628, IF5Y: 5.606, Scopus Q1.

Fields, D., Lui, D., Kafai, Y., Jayathirtha, G., **Walker, J.T.**, & Shaw, M. (2021). Communicating about computational thinking: understanding affordances of portfolios for assessing high school students' computational thinking and participation practices. Computer Science Education, 1-35. https://doi.org/10.1080/08993408.2020.1866933. IF: 5.4, Scopus Q1.

Kafai, Y. B., & **Walker, J.T.** (2020). Bringing 21st-century science into schools. Phi Delta Kappan, 102(1), 38-41. https://doi.org/10.1177/0031721720956848. IF: 0.980, IF5Y: 0.899, Scopus Q2.

Lui, D., Kafai, Y.B., Litts, B., **Walker, J.T**., Widman, S. (2019). Pair Physical Computing: High School Students' Practices and Perceptions of Collaborative Coding and Crafting with Electronic Textiles. *Computer Science Education*. https://doi.org/10.1080/08993408.2019.1682378.

Lui, D., **Walker, J.T**., Hanna, S., Kafai, Y.B., Fields, D., & Jayathirtha, G. (2019). Communicating computational concepts and practices within high school students' portfolios of making electronic textiles. *Interactive Learning Environments*, 1-18. https://doi.org/10.1080/10494820.2019.1612446.

Litts, B.K., Widman, S.A., Lui, D. A., **Walker, J.T**., & Kafai, Y.B. (2019). A Maker Studio Model for High School Classrooms: The Nature and Role of Critique in an Electronic Textiles Design Project. *Teachers College Record*, *121*(9). https://doi.org/10.1177/016146811912100906.

Walker, J.T. (2018). Review of Our School: Searching for Community in an Era of Choice, By Sam Chaltain. *The Journal of Negro Education, 87*(4), 460-462. https://doi.org/10.7709/jnegroeducation.87.4.0460.

Litts, B.K., Kafai, Y.B., Lui, D., **Walker, J.T.**, & Widman, S.A. (2017). Stitching Codeable Circuits: High School Students' Learning about Circuitry and Coding with Electronic Textiles. *Journal of Science Education and Technology*, *26*(5), 494-507. https://doi.org/10.1007/s10956-017-9694-0.

Editorships

Walker, J.T., McGrath, J., Guilbert, A., Milone, V., Padilha, E., Hu, A., Chan, D., Luursema, J.M., Seyfried, G., Chavez, M., & Kong, D.S. (Eds.), 2022. Proceedings of the Global Community Bio Summit (GCBS) 5.0, Cambridge, Massachusetts. Retrieved from: www.biosummit.org.

Walker, J. T., Strawhacker, A., Angleton, C., Allan, J., Konwar, A., Obayomi, O. & Kong, D. S., (Eds.), 2021. Proceedings of the Global Community Bio Summit (GCBS) 4.0, Cambridge, Massachusetts. Retrieved from: www.biosummit.org.

Conference Proceedings: Peer-Reviewed

Walker, J.T. & Schanzer, E.. (2025). Twenty Constructionist Things to Do With Data Science. In *Proceedings of the Constructionism Conference*. Constructionism Conference. Zürich, Switzerland. https://doi.org/10.21240/constr/2025/95.X.

Walker, J. T., Rahimi, S., Barany, A., & Lin-Lipsmeyer, L. (2025). Generative Inquiry: Creativity Assessments of Youth Epistemic Agency and in a Computational Data Science Workshop. In Rajala, A., Cortez, A., Hofmann, H., Jornet, A., Lotz-Sisitka, H., & Markauskaite, L. (Eds.), Proceedings of the 19th International Conference of the Learning Sciences - ICLS 2025 (pp. 538-546). International Society of the Learning Sciences. https://doi.org/10.22318/icls2025.641987.

McClain, J., Victor, L., Miller, J., Danish, J., Fusco, J., Hmelo-Silver, C. E., Walter, W., Buli, T., Dragnić-Cindrić, D., Glazewski, K., **Walker, J. T.**, & Bae, H. (2025). “It Takes Two to Tango”: Power Dynamics in Researcher-Coach Collaborations. In Rajala, A., Cortez, A., Hofmann, H., Jornet, A., Lotz-Sisitka, H., & Markauskaite, L. (Eds.), Proceedings of the 19th International Conference of the Learning Sciences - ICLS 2025 (pp. 1589-1593). International Society of the Learning Sciences.

Acquah, A., Barany, A., Johnson, M. A., Scarola, A. S., Rivera, C., & **Walker, J. T.** (2024). Sandboxing in Data Science: An Exploration of Youth Learning Using Open-Inquiry Approaches for Computing-based Data Mining. In *Lindgren, R., Asino, T. I., Kyza, E. A., Looi, C. K., Keifert, D. T., & Suárez, E. (Eds.), Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024* (pp. 2433-2434). International Society of the Learning Sciences. https://doi.org/10.22318/icls2024.371438.

Schunn, C., Noroozi, O., Chen, W., Lyu, Q., Chai, S. C., Li, X., **Walker, J.**, Reza, S. M., Acquah, A., Scarola, A., Barany, A., Henderson, J. B., Stoler, A., Manz, E., Zhou, J., Hmelo-Silver, C. E., Murphy, D., Ryan, Z., Stiso, C., Lin, Q., Danish, J., Duncan, R. G., Chinn, C. A., & Herrenkohl, L. R. (2024). Perspectives from the Field: Scaffolding Peer Critique and Feedback. In *Clarke-Midura, J., Kollar, I., Gu, X., & D'Angelo, C. (Eds.), Proceedings of the 17th International Conference on Computer-Supported Collaborative Learning - CSCL 2024* (pp. 315-322). International Society of the Learning Sciences. https://doi.org/10.22318/cscl2024.250942.

Miller, K. M., Polman, J. L., Yoon, S. A., Shim, J., Leung, V. Y., Nguyen, Y., Rubin, A., Rubin, A., Higgins, T., Karch, J. M., Hammerman, J. K., Matuk, C., DesPortes, K., Amato, A., Dikker, S., Ochoa, X., Romero, E., Podworny, S., Fleischer, Y., Biehler, R., **Walker, J. T**., Barany, A., Acquah, A., Scarola, A., Reza, S., Tran, T. C.,

Vacca, R., Silander, M., Woods, P. J., Fernandez, C., Eloy, A., Blikstein, P., de Deus Lopes, R., Radinsky, J., Tabak, I., Lee, V. R., Demszky, D., Levine, S., & Louie, J. (2024). Data and Social Worlds: How Data Science Education Supports Civic Participation and Social Discourse. In *Lindgren, R., Asino, T. I., Kyza, E. A., Looi, C. K., Keifert, D. T., & Suárez, E. (Eds.), Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024* (pp. 1863-1870). International Society of the Learning Sciences. https://doi.org/10.22318/icls2024.702524.

Drozda, Z., **Walker, J.T.**, Fisler, K. & Weintrop, D. (2024, March) Computing in Data Science or Data in Computer Science? In *Proceedings of the 2024 ACM SIGCSE Technical Symposium on Computer Science Education*, 381-386. ACM. https://doi.org/10.1145/3626253.3631654.

Johnson, M., Barany, A., Barrera, A., Acquah, A., **Walker, J.T.** (October, 2023). Lessons Learned from Online Co-design: Exploring Reflections of Connected Participatory Strategies for Computing-based Data Science Curricular Design. Connected Learning Summit. Irvine, CA. Acceptance Rate: NR

Walker, J.T., Barrera, A., Perez, M.D., Acquah, A., Grushkin, D., Vijayakumar, V. (October, 2023). Biodesign: A Frame for BioMaking to Learn. FLC 2023, October 7–11, 2023, Teachers College, Columbia University. New York City, NY, USA 2023 Copyright is held by the owner/author(s). Publication rights licensed to ACM https://doi.org/10.1145/3615430.3615440. **Best Paper Award.**

Walker, J.T., Barany, A., Barrera, A., Reza, S., Guzman Del Rio, K., Acquah, A., Badreddin, O., Johnson, M. (October, 2023). Coding Like a Data Miner: A Sandbox Approach to Computing-Based Data Science for High School Student Learning. FIE. In the 2023 IEEE Frontiers in Education Conference (FIE). IEEE. https://doi.org/10.1109/FIE58773.2023.10343283. Acceptance Rate: NR

Barany, A., Reza, S., Johnson, M., Barrera, A., Badreddin, O., Fuentes, C., **Walker, J.T.** (June, 2023). Towards the Design of a Culturally Relevant Curriculum for Equitable, Data Mining-based CS Education. 2023 International Conference of the Learning Sciences Annual Meeting. Montreal, Canada. https://doi.org/10.22318/icls2023.614567 Acceptance Rate: 30%

Walker, J.T., Barerra, A., Sepulveda, R. & Perez-Piza, M. (2022, June). Critical Biomaking: Socioscientific Issues as Contexts for Life Science Maker Education. 2022 International Conference of the Learning Sciences Annual Meeting. Hiroshima, Japan. https://repository.isls.org//handle/1/8847. Acceptance Rate: 30%

Rahimi, S., **Walker, J.T.,** & Lin, L. (2022, June). In Pursuit of Creativity in Minecraft: A Mixed-Method Approach. 2022 International Conference of the Learning Sciences Annual Meeting. Hiroshima, Japan. https://dx.doi.org/10.22318/icls2022.1397. Acceptance Rate: 30%

Kafai, Y.B. and **Walker, J.T.** (2020, October). Tools for Biomakers: Reviewing Affordances and Constraints for K-12 Hands-On Making with Biology. FabLearn 2020. https://doi.org/10.1145/3386201.3386204. Acceptance Rate: 40%

Kafai, Y.B. and **Walker, J.T.** (2020, May). Twenty Things to Make with Biology. In *Tangney, B., Byrne, J., & Girvan, C. (Eds.). Proceedings of the 2020 Constructionism Conference*, 551-559. Dublin, Ireland. http://www.constructionismconf.org/. Acceptance Rate: NR

Walker, J.T., Slater, S., & Kafai, Y. (2019, June). A Scaled Analysis of How Minecraft Gamers Leverage YouTube Comment Boxes to Participate and Collaborate. In *Lund, K., Niccolai, G. P., Lavoué, E., Gweon, C. H., & 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), 1, 440-447. Lyon, France: International Society of the Learning Sciences. https://repository.isls.org//handle/1/1601. Acceptance Rate: 30%

Shaw, M., **Walker, J.T.**, & Kafai, Y. (2019, June). Arguing about Synthetic Biology in 140 Characters or Less: Affordances of Microblogging for High School Students Discussions of Socioscientific Issues. In *Lund, K., Niccolai, G. P., Lavoué, E., Gweon, C. H., & 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), 1, 526-533. Lyon, France: International Society of the Learning Sciences. https://repository.isls.org//handle/1/1613. Acceptance Rate: 30%

Lui, D., Kafai, Y.B., **Walker, J.T.**, Hanna, S., Hogan, K., & Telhan, O. (2019, March). A Revaluation of How We Think about Making: Examining Assembly Practices and Artifact Imagination in Biomaking. In *Proceedings of FabLearn,* 34-41. ACM. https://doi.org/10.1145/3311890.3311895.

Kafai, Y.B., Fields, D.A., Lui, D.A., **Walker, J.T.**, Shaw, M.S., Jayathirtha, G., & Giang, M.T. (2019, February). Stitching the Loop with Electronic Textiles: Promoting Equity in High School Students' Competencies and Perceptions of Computer Science. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education,* 1176-1182. ACM. https://doi.org/10.1145/3287324.3287426.

Walker, J.T., Shaw, M., Kafai, Y., & Lui, D. (2018, June). Biohacking Food: A Case Study of Science Inquiry and Design Reflections about a Synthetic Biology High School Workshop. 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), 3, 1559-1560. London, UK: International Society of the Learning Sciences. https://repository.isls.org//handle/1/733. Acceptance Rate: 30%

Kafai, Y., Horn, M., Danish, J., Humburg, M., Tu, X., Davis, B., Georgen, C., Enyedy, N., Blikstein, P., Clegg, T., Byrne, V.L., Norooz, L., Kang, S., Froehlich, J., **Walker, J.T.**, Lui, D., Anderson, E., Kafai, Y., Bumbacher, E., Washington, P., & Riedel-Kruse, I. (2018, June). Affordances of Digital, Textile, and Living Media for Designing and Learning Biology in K-12 Education. 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), 2, 1275-1282. London, UK: International Society of the Learning Sciences. https://repository.isls.org//handle/1/604. Acceptance Rate: 30%

Anderson, E., **Walker, J.T.**, Kafai, Y.B., & Lui, D. (2017, August). The gender and race of pixels: an exploration of intersectional identity representation and construction within Minecraft and its community. In *Proceedings of the 12th International Conference on the Foundations of Digital Games*. ACM. https://doi.org/10.1145/3102071.3102094.

Litts, B.K., Lui, D.A., Widman, S.A., **Walker, J.T**., & Kafai, Y.B. (2017, June). Reflections on Pair E-Crafting: High School Students' Approaches to Collaboration in Electronic Textiles Projects. In *Smith, B. K., Borge, M., Mercier, E., and Lim, K. Y. (Eds.). (2017). Making a Difference: Prioritizing Equity and Access in CSCL, 12th International Conference on Computer Supported Collaborative Learning* (CSCL), 2, 569-572. Philadelphia, PA: International Society of the Learning Sciences. https://repository.isls.org//handle/1/286.

Kafai, Y., Telhan, O., Hogan, K., Lui, D., Anderson, E., **Walker, J.T**., & Hanna, S. (2017, June). Growing designs with biomakerlab in high school classrooms. In *Proceedings of the 2017 Conference on Interaction Design and Children,* 503-508. ACM. https://doi.org/10.1145/3078072.3084316.

Litts, B.K., Kafai, Y.B., Lui, D., **Walker, J.T.**, & Widman, S. (2017, March) Understanding High School Students' Reading, Remixing, and Writing Codeable Circuits for Electronic Textiles. In *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education*, 381-386. ACM. https://doi.org/10.1145/3017680.3017740.

Lui, D., Litts, B.K., Widman, S., **Walker, J.T**., & Kafai, Y.B. (2016, October). Collaborative Maker Activities in the Classroom: Case Studies of High School Student Pairs' Interactions in Designing Electronic Textiles. In *Proceedings of the 6th Annual Conference on Creativity and Fabrication in Education*, 74-77. ACM. https://doi.org/10.1145/3003397.3003408.

Book Chapters

Walker, J.T., Barany, A., Barrera, Johnson, M., A., Reza, S., (2024). Perspectives on Research and Practice In and Around Cultural Relevance for Pre-College Data Science in Computing. *Improving Equity in Data Science.* Routledge. https://doi.org/10.4324/9781003364634-2.

Fields, D. A., Kafai, Y. B., Aguilera, E., Slater, S. & **Walker, J.** (2021). Perspectives on Scales, Contexts, and Directionality of Collaborations in and around Virtual Worlds and Video Games. In U. Cress, C. Rose, A. F. Wise, & J. Oshima (Eds.) *Handbook of Computer Supported Collaborative Learning*, 371-388. https://doi.org/10.1007/978-3-030-65291-3_20.

Kafai, Y. B. & **Walker, J.** (2021). Twenty Things to Make with Biology. In G.S. Stager (Ed.), *Twenty Things to Do with a Computer: Forward 50: Future Visions of Education Inspired by Seymour Papert and Cynthia Solomon's Seminal Work*. ISBN-13: 978-1955604000.

Articles: Unrefereed

Walker, J.T. (2022, November). BioMaking: How Will this Next-century Technology Shape up in Pre-college Teaching and Learning?. STEM For All Multiplex. https://multiplex.videohall.com/blogs/26.

Walker, J.T. (2021, January). Biodesign Education: For What, Whom, and How? Biodesigned: Issue 5, 21 January 2020. https://www.biodesigned.org/justice-toshiba-walker/biodesign-education.

Kafai, Y. B., Hogan, K. M., Telhan, O., & **Walker, J. T.** (2020, October). Learn.Design.Bio.K12: A workshop report on connecting computing and biodesign in K-12 education. Philadelphia, PA: University of Pennsylvania. Cambridge Open Engage. https://doi.org/10.33774/coe-2023-xztxw.

Walker, J.T. (2019, August). Paradigm Shifts in Life Science Education: Opportunities and Challenges in an Era of Synthetic Biology. Public Library of Science (PLOS). https://theplosblog.plos.org/2019/08/paradigm-shifts-in-life-science-education-opportunities-and-challenges-in-an-era-of-synthetic-biology.

Conference Presentations: Peer-Reviewed

Walker, J.T., Rahimi, S., Barany, A., & Lipsmeyer, L. (2025, April) Exploring Youth Epistemic Agency and Creativity in a Sandbox Computational Data Mining Workshop. American Educational Research Association (AERA), Denver, CO.

Walker, J.T., Tran, K.Q., Rivera-Maulucci, M.S. (March, 2025). Designing for Equitable Futures: Perspectives on Rebuilding and Healing in the Next Century of Teaching and Learning. 2025 National Association for Research in Science Teaching (NARST) Annual Meeting, National Harbor, MD.

Tofel-Grehl, C. Schanzer, E., **Walker, J.T.**, Barany, A., Barrera, A., Johnson, M., Reza, S.M., Hansen, T., Searle, K., Jiang, M., Barker, M., Grover, S., Jean, D., Broll, B., Catete, V., Gransbury, I., Ledeczi, A., Barnes, T., Slater, E., Suarez, M., Lee, V., Shreiner, T., Guzdial, M., Ahn, J., Van Doren, S., Cai, J., Ngyuyen, Ha., Rodriguez, F., Martinez C., & Han, J. (2025, February) Engaging Equity in Data Science Education. Data Science Education K-12 Research to Practice Conference. (DSEK-12), San Antonio, TX.

Scarola, A., Rivera, C., Palad, P., Benny, J., Johnson, M., Barany, A., & **Walker, J.T.** (2025, February). Exploring Epistemic Processes and Styles in Student-Driven Data Science Projects. (DSEK-12), San Antonio, TX.

Joseph, B., Elizebath, R., Rivera, C., Scarola, A., Palad, P., Acquah, A., Johnson, M., Barany, A., & **Walker, J.T.** (2025, February) Comparative Analysis of Guided and Free Approaches in Data Science Instruction in a Nontraditional Collaborative Instructional Setting. Data Science Education K-12 Research to Practice Conference. (DSEK-12), San Antonio, TX.

Johnson, M., Barany, A., Barrera, A., Acquah, A., Reza, S., **Walker, J.T.**, & Shaw, M. (2024, April) Coding Like a Data Miner: Reflections on Epistemic Plurality in Sandbox Data Science with Youth. In K. Searle et al. (Chair), Exploring Critical Data Literacy in K-12 Social Studies. AERA, Philadelphia, PA.

Fields, D. A., Lui, D., Kafai, Y.B., Jayathirtha, G., **Walker, J.T.**, & Shaw, M. (2024, April) Communicating about computational thinking: Understanding affordances of portfolios for assessing high school students' computational thinking and participation practices. In D. Weintrop et al. (Chair), Assessing Computational Thinking: Updates and Advances in the Field. AERA, Philadelphia, PA.

Steele, D., Wright, G., **Walker, J.T**. (March, 2024). Re-emphasizing the Roles of "Social" and "Cultural" in Science Learning. 2024 National Association for Research in Science Teaching (NARST) Annual Meeting, Denver, CO.

Barrera, A., Perez, M.D., **Walker, J.T.** (October, 2023). Biomaking Board Games: A Workshop about BioMaterials for Making and Learning. FLC 2023, October 7–11, 2023, Teachers College, Columbia University. New York City, NY.

Boda, P., **Walker, J.T**., Wright, G. (April, 2023). Critically theorizing the margins for reform-based equity in science: A disobedient reckoning. 2023 National Association for Research in Science Teaching (NARST) Annual Meeting, Chicago, IL.

Morton, T. (Chair), McCoy, W., Dou, R.., **Walker, J.T.**, Hattan, C., Woodson, A., Ryoo, J., Shaw, M., Henderson, D., Butler-Barnes, S. (May, 2023). Operationalizing Equity Within Educational Psychology Informed Research and Praxis. 2023 American Educational Research Association Annual Meeting, Chicago, IL.

Morton, T. (Chair), Graham, S., Woodson, A., Ryoo, J., Shaw, M., Vossoughi, S., Henderson, D., Butler-Barnes, S., **Walker, J.T.** (Discussant), (April, 2023). "Allow Me to Reintroduce Myself": Doing Equity Work in Ways That Disrupt Systemic Oppression and Empower Marginalized Groups. 2023 American Educational Research Association Annual Meeting, Chicago, IL.

Strawhacker, A., Hassenfeld, Z.R., **Walker, J.T.** (April, 2023). *Practice and Positionality: Critical Instantiations of STEAM Education and Research*. 2023 American Educational Research Association Annual Meeting, Chicago, IL.

Walker, J.T., Barany, A., Barrera, A., Slater, S., Badreddin, O., Reza, S., Johnson, M. (April, 2023). *Social Media Discourse Instruments as Tools Socioscientific Argumentation*. 2023 American Educational Research Association Annual Meeting, Chicago, IL.

Reza, S., Barrera, A., Johnson, M., Barany, A., Badreddin, O., **Walker, J.T.** (April, 2023). *Social and Cultural Relevance: A Design Principle for Data Science-based Computer Science Education*. 2023 American Educational Research Association Annual Meeting, Chicago, IL.

Barrera, A., Johnson, M., Barany, A., Reza, S., Badreddin, O., **Walker, J.T.** (April, 2023). *Navigator to Producer: Data Science as an Access Point for Equitable Pre-College Computer Science Education.* In Strawhacker et. al. (Chairs), Practice and Positionality: Critical Instantiations of STEAM Education and Research. American Educational Research Association Annual Meeting, Chicago, IL.

Walker, J.T., Stamato, L., Asgarali-Hoffman, N., Hamidi, F., & Scheifele, L.Z. (April, 2022). *Community Labs: Deep Root Spaces for BioMaking*. 2022 American Educational Research Association Annual Meeting, San Diego, CA.

Walker, J.T., (chair), Vishesh K., Tissenbaum, M., Lee, S.J., Tu, X, Adebola, S., Danish, J, Enyedy, N.D., Yu, J., Axelrod, D.B., Khan, J.B., & Lindgren, R. (Discussant) (April, 2022). *Augmented and Ambient Technologies to Support Embodied and Collaborative Learning*. 2022 American Educational Research Association Annual Meeting, San Diego, CA.

Walker, J.T., (chair), Holincheck, N., Gelanti, T.M., M., Selbach-Allen M., Pimentel, D., Raynante, B., Bennett, A.E., Schwortz, A.C., Burrows, A.C., Bump, K., Pazey, B.L., & Eddy, C.M. (April, 2022). *How Teachers Teach, Conceptualize, and Talk About Integrated STEM*. 2022 American Educational Research Association Annual Meeting, San Diego, CA.

Settlage, J., (chair), Byfield, L., Bancroft, S.F., Colaninno, C.E., Bacon, H.R., Humaidan, A.Y., Anderson, S.B.O., Hughes, B., Seiki, S., Asato, J.A., Koo, B.W., Hariani, M., Hayes, K.N., Preminger, L.K., Bae, C.L., Toven-Lindsey, B., O'Conor, D.M., Ansari, S., Williams, S., & **Walker, J.T.**, (Discussant) (April, 2022). *Improving Equity and Quality in Science Education*. 2022 American Educational Research Association Annual Meeting, San Diego, CA.

Walker, J.T. (April, 2021). BioCakes: *An Equity-Informed Approach to Middle and High School Synthetic Biology Learning.* 2021 American Educational Research Association Annual Meeting, Orlando, FL.
Walker, J.T. (chair), Strawhacker, A. (chair), Huang, A., Dabholkar, S., Legault, J., Dilley, C., Kuldell, N., Elliot, J.K., Scholze, A., Kurman, M., Heiland, M., Takara, C., Perez, R., Chappell, C., Hernandez, J., Tuck, E., Scheifele, L., Calabrese-Barton, A. (discussant), Horn, M.S. (discussant), & Kafai, Y.B. (discussant) (April, 2021). *The Biomaker Ecosystem: Technologies, Spaces and Curriculum for K-12 Making with Biology.* 2021 American Educational Research Association Annual Meeting, Orlando, FL.

Walker, J.T. (2020, December). *Biodesign and education - using design principles and synthetic biology to engage diverse learners.* American Society for Cell Biology. ASCB EMBO Meeting. https://www.ascb.org/cellbiovirtual2020/.

Walker, J.T. and Kafai, Y.B. (2020, October). *Making with Living Media: High School Youth Participation and Projects in the Biodesign Challenge*. Workshop. FabLearn 2020. https://nyc2020.fablearn.global.

Fields, D. A., Kafai, Y. B., Lui, D., Shaw, M., Jayathirtha, G. & **Walker, J. T.** (2020, April) *Supporting Computer Science Engagement and Learning Through Reflective, Process-Based Portfolio Assessments*. Poster presentation at the American Education Research Association Annual Meeting, San Francisco, CA http://tinyurl.com/y3kvjcfh. (Conference Canceled).

Walker, J.T., & Kafai, Y.B. (2019, April). Designing Life in the 21st Century: *A Review of High School Students' Attitudes Toward Biotechnologies*. Poster presentation at the American Education Research Association Annual Meeting, Toronto, CA. http://tinyurl.com/yc4233zn.

Walker, J.T., Fields, D.A., Kafai, Y.B., Nakajima, T.M., Lui, D., Goode, J., Margolis, J.S., Jayathirtha, G., & Shaw, M. (2019, April). *Scaling up Equity with E-Textiles: Stitch the Loop Unit Results in Exploring Computer Science*.

Poster presentation at the American Education Research Association Annual Meeting, Toronto, CA. http://tinyurl.com/ybv6ln23.

Fields, D.A., Kafai, Y.B., Shaw, M., Lui, D., Nakajima, T.M., Goode, J., Margolis, J.S., Jayathirtha, G., & **Walker, J.T.** (2019, April). *Stitching the Loop: An E-Textiles Curriculum for Exploring Computer Science*. Poster presentation at the American Education Research Association Annual Meeting, Toronto, CA. http://tinyurl.com/yb9unmao.

Walker, J.T., Shaw, M.S., & Kafai, Y.B. (2019, March). *bioCAKES: Making with Biology*. Workshop Presented at Annual *Fablearn Conference*, New York, NY. https://nyc2019.fablearn.org.

Lui, D., **Walker, J.T.**, Jayathirthi, G., & Kafai, Y.B. (2018, April). Maker Process Portfolios: *Looking at How Students Document Interdisciplinary E-Textiles Projects Within Digital Portfolios.* Poster presented at the American Education Research Association Annual Meeting, New York, NY. http://tinyurl.com/yabypfqv.

Anderson, E., Lui, D., **Walker, J.T.**, & Kafai, Y.B. (2018, April). *What is a Maker Mindset? Exploring 'Thinking Outside the Box' through E-Textiles and BioDesign Making*. Poster presented at the American Education Research Association Annual Meeting, New York, NY. http://tinyurl.com/ybgg92kt.

Lui, D., **Walker, J.T.**, Hanna, S., Hogan, K., Kafai, Y.B., & Telhan, O. (2017, October). *Making with Biology: How to Grow Socially Responsive and Creative Designs with bioMAKERlab.* Digital Media & Learning. Irvine, CA. https://dml2017.dmlhub.net.

Litts, B.K., Lui, D., **Walker, J.T.**, Widman, S., & Kafai, Y.B. (2017, April) *Computational Circuitry: High School Student Code Circuits in Electronic Textile Designs.* Poster presented at the American Education Research Association Annual Meeting, San Antonio, TX. http://tinyurl.com/jbxwdwc.

Litts, B.K., Lui, D., Widman, S., **Walker, J.T.**, & Kafai, Y.B. (2017, April) *Science Lab as Maker Studio: Creating and Critiquing Electronic Textiles in a High School Class*. Roundtable presented at the American Education Research Association Annual Meeting, San Antonio, TX. http://tinyurl.com/hza5bdd.

Litts, B.K., Kafai, Y.B., Lui, D., Widman, S., & **Walker, J.T.** (2017, April) *Collaborative E-Crafting: Adopting Collectivistic Orientations Toward E-Textiles Maker Projects.* Poster presented at the American Education Research Association Annual Meeting, San Antonio, TX. http://tinyurl.com/hdcfzhr.

Conference Presentations: Unrefereed

Barrera, A., Reza, S.M., Barany, A., Badreddin, O., Johnson, M., **Walker, J.T.** (April, 2022). *Sandbox Science: Equity Approaches to Open-Ended Data and Computer Science Curricular Design*. Community Engagement Scholarship Forum. The University of Texas at El Paso. El Paso, TX. https://www.utep.edu/cce/Faculty/engforum.html.

Reza, S.M., Barrera, A., Barany, A., Badreddin, O., Johnson, M., **Walker, J.T.** (April, 2022). *Coding Like a Data Miner: A Culturally Relevant Data Analytics Intervention for High School Students.* Community Engagement Scholarship Forum. The University of Texas at El Paso. El Paso, TX. https://www.utep.edu/cce/Faculty/engforum.html.

Hamidi, F., Chen, C., Elcock, L., & **Walker, J.T.** (2021, November). *Constructing Community Bio: Diverse Perspectives in Community Building for Teaching and Learning.* '21 Global Community Bio Summit 5.0. Massachusetts Institute of Technology, Cambridge, MA. https://www.biosummit.org/.

Collins, A., Scholze, A., Chappell, C., & **Walker, J.T.** (2021, November). *Prototyping Your Practice: Action Equity in Teaching and Learning.* '21 Global Community Bio Summit 5.0. Massachusetts Institute of Technology, Cambridge, MA. https://www.biosummit.org/.

Tillman, D.A., An, S.A., Tinajero, J.V., **Walker, J.T.**, & Robertson, W.H. (2021). Encouraging Creativity Via Innovative Technology (2021), The University of Texas at El Paso Sol Conference. El Paso, TX. https://solconference.utep.edu/program.

Kuldell, N., Brown, B., Tissenbaum, M., & **Walker, J.T.** (2020, October). *Future Directions in Life Science Education: Innovations, Blindspots, and Opportunities*. '20 Global Community Bio Summit 4.0. Massachusetts Institute of Technology, Cambridge, MA. https://www.biosummit.org/#2020-section.

Walker, J.T. & Kadam, S. (2019, October). *Lightning Talks: Bio.Tech Education Access and Literacies*. '19 Global Community Bio Summit 3.0. Massachusetts Institute of Technology, Cambridge, MA. https://www.biosummit.org/2019.

Walker, J.T. & Chow, C. (2018, October). *Learning in the Biotech Era: Diversity, Engagement and Participation Priorities*. '19 Global Community Bio Summit 2.0. Massachusetts Institute of Technology, Cambridge, MA. https://www.biosummit.org/2018.

Walker, J.T. & Kafai, Y.B. (2018, October). *Synthetic Biology Activities for K-12 Students*. '18 Global Community Bio Summit 2.0. Massachusetts Institute of Technology, Cambridge, MA. https://www.biosummit.org/2018.

Kafai, Y.B., **Walker, J.T.**, Lui, D., Hogan, K., & Telhan, O. (2017, September). *Kids as Biodesigners.* '17 Global Community Bio Summit 1.0. Massachusetts Institute of Technology, Cambridge, MA. https://www.biosummit.org/2017.

Anderson, E. & **Walker, J.T.** (2017, April) *Do Pixels have Race? Investigating Youth Racial Engagement in Minecraft Play, Production, and Community Participation*. Diversifying Barbie and Mortal Kombat: Where Are We Now, Massachusetts Institute of Technology, Cambridge, MA.

Walker, J.T. (2005, May) *Non-Steroidal Anti-Inflammatory Drugs Elicit Apoptosis in Colon Cancer Cells via Caspase-dependent Pathways.* Poster presented at the Atlantic Coast Meeting of the Minds Conference, Coral Gables, FL.

Walker, J.T. (2004, July) *Antiproliferative Effects of Natriuretic Peptides on Smooth Muscle Epithelial Cell hypertrophy*. Leadership Alliance National Symposium, Chantilly, VA.

Invited Talks

Walker, J.T. (2023, October). "BioMaking: New Frontiers for Epistemic Agency in Life Science Teaching and Learning." Fab Learn Conference. Teachers College, Columbia University. New York, NY. https://nyc2023.fablearn.global/.

Walker, J.T. (2023, October). "Toward Epistemic Agency: Visions Beyond Plurality for Next Generation Technologies, Teaching and Learning." Indiana University Center for Research on Learning and Technology. Bloomington, IN.

Walker, J.T. (2023, September). "Sandbox Data Science: Principles for Epistemic Agency in Inquiry-Driven Computing." Rutgers University Graduate School of Education. New Brunswick, NJ.

Walker, J.T. (2023, April)**.** "Making Meets Bio: Emerging Frontiers for Life Science Engineering, Design and Making." University of Pennsylvania Graduate School of Education. Philadelphia, PA.

Walker, J.T. (January, 2023)**.** "Integrated Technologies and the Importance of Community Science Education for Sustainable Innovations." Darwin Regional Conference, Bangladesh, India. https://www.facebook.com/104822158922667/posts/pfbid022m5xLb3v4wdzWf2CPuJiHVoQYocvgwUUuNN2wMeXjtVxxPUA5FdVK6BBYgazr8YAl/?sfnsn=mo&mibextid=RUbZ1f.

Walker, J.T. (December, 2022)**.** "Think Equity: Learning Sciences Directions Toward Responsible STEAM Education Research and Practice." Global Community Bio Summit 6.0. MIT Cambridge, MA. https://www.biosummit.org/2022.

Walker, J.T. (November, 2022)**.** "Re-Imagining Equity Paths for the Next Generation of Maker Teaching and Learning." STEM For All Multiplex. TERC Cambridge, MA. https://multiplex.videohall.com/pages/november2022webinar.

Walker, J.T. (August, 2022)**.** "A Culturally Relevant Data Analytics-based Computer Science Curriculum for High School Students." Paso del Norte Partnership for Education Research Fall Summit. The University of Texas at El Paso, El Paso, TX.

Walker, J.T. (August, 2022)**.** "Mid-scale RI-2: National STEM Education Research CoLab." Paso del Norte Partnership for Education Research Fall Summit. The University of Texas at El Paso, El Paso, TX.

Walker, J.T. (July, 2022)**.** "BioCakes: A BioMaking Activity for Teaching and Learning about Synthetic Biology" Nerd Night. Insights El Paso Science Center.

Walker, J.T. (November, 2021)**.** "Perspectives, Practices, and Places: Emerging Paradigms for Modern Life Science Learning." Georgia Tech University Ivan Allen College of Liberal Arts. Atlanta, GA.

Walker, J.T. (November, 2021)**.** "Academic Curriculum Vitae (CV) Example and Writing Tips." University of Texas at El Paso Ethnographies or Language, Literacies and Learning Lab. The University of Texas at El Paso, El Paso, TX.

Walker, J.T. (October, 2021)**.** "Using Biology to Make: Design Biology for Research, Learning, and Practice." University of Maryland, Baltimore County. Baltimore, MD.

Walker, J.T. (May, 2021). "Charting Life Science Frontiers: Research on Synthetic Biology Teaching and Learning," Stanford University Graduate School of Education STEM Education Community Group. Paolo Alto, CA.

Walker, J.T. (May, 2021)**.** "BioBuilder Career Conversation: Justice T. Walker" BioBuilder Educational Foundation.Cambridge, MA.

Walker, J.T. (September, 2020)**.** "A Scaled Analysis of How Minecraft Gamers Leverage YouTube Comment Boxes to Participate and Collaborate." University of Texas at El Paso Ethnographies or Language, Literacies and Learning Lab.

Journal Editorial Activities

The Journal of Science Teacher Education

Associate Editor 2024-current
Journal of Research in Science Teaching 2025-current
Associate Editor
Research Directions: Biotechnology Design
Editorial Board 2023-current

Journal Reviewer Activities
The Journal of Negro Education 2016-current
Interactive Learning Environments 2018-current
International Journal of Child-Computer Interaction 2019-current
Journal of Research in Science Teaching 2021-current
Digital Culture and Education 2022-current
Educational Technology Research and Development 2023-current
Journal of Statistics and Data Science Education 2025-current

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Conference Reviewer Activities
The American Educational Research Association (AERA) 2016-current
SIG-Advanced Technologies for Learning
SIG-Learning Sciences
SIG-Science Teaching and Learning
Division C: Learning and Instruction
FabLearn Conference 2018-current
Connected Learning Conference 2022-current
International Conference of the Learning Sciences (ICLS) 2022-current
Computer Supported Collaborative Learning (CSCL) 2022-current
Constructionism Conference 2022-current

University Service
UTEP Faculty Senate Executive Council 2024-current
UTEP Office of Student Conduct and Conflict Resolution Hearing Officer 2023-current
College of Education Teacher Education Department Undergraduate Curriculum Committee 2022-current
College of Education Teacher Education Department Workload Committee 2023-2024
UTEP Black Affinity Faculty Group 2020-2024
UTEP Hispanic Servingness Research Council 2022-2025
College of Education Teacher Education Department TLC Doctoral Program Committee 2020-2023
UTEP AWARE 2021-2022
STEMERS Organizing Committee 2021-2022
Ethnography of Languages, Literacies, and Learning (EL3) Lab: QOC Organizing Committee 2021-2022

Professional Service
Insights El Paso Science Center
Board Member (Secretary) 2021-current
BioDesign Challenge
Competition Judge 2021-current
Massachusetts Institute of Technology Global Community Bio Summit 2018-current
Conference Co-chair
Conference Proceedings Editor
Organizing Committee: Co-organized inaugural fellows program application, selection, and leadership training.
Co-organized event *Learning and Education* tracks, including panels, lightning talks, and breakout sessions.
Co-organized event applications and program committee.

University of Pennsylvania Graduate School of Engineering and Applied Science 2018-current
Alumni Undergraduate Admissions Interviewer
University of Pennsylvania Fontaine Society Fellowship 2015-19
Coordinating Committee Treasurer
SynBioBeta Conference fall 2018
Media Committee Volunteer
University of Pennsylvania Graduate School of Education
Commencement Marshall spring 2017; 2018
Committee on Degrees Student Representative 2016-17
Faculty Promotions Committee Student Representative fall 2017
Awards Committee Student Representative spring 2016
International Society of the Learning Sciences 2016
Computer-Supported Collaborative Learning Conference Student Volunteer

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Professional Memberships and Service

International Society of the Learning Sciences (ISLS) 2016-current
Communications Committee 2020-current
Communications Committee Co-Chair 2023-current
Equity Learning Task Force 2022-current
ISLS 2024 Annual Meeting Communications Co-Chair 2023-2024

National Association for Research in Science Teaching (NARST) 2021-current
Ethics and Equity Committee (EEC) Chair 2023-current
Basu Scholarship Co-Chair 2022-2022

American Society for Cell Biology (ASCB) 2021-current

American Educational Research Association (AERA) 2015-current
Division C: Learning and Instruction
Equity and Inclusion Committee Member 2022-current
Division K: Teacher and Teacher Education
SIG: Learning Sciences
SIG: Advanced Technologies for Learning
SIG: Multicultural/Multiethnic Education: Theory, Research and Practice, Awards Committee Co-Chair
SIG: Science Teaching and Learning

National Science Teachers Association 2015-current

National Association for the Advancement of Colored People 2015-current

Smithsonian Institute 2014-current
National Museum of African American History and Culture Ambassador

Alpha Phi Alpha Fraternity, Inc. 2002-current

DC Canes University of Miami Alumni Club 2013-16

Mid-Atlantic International Baccalaureate Association of World Schools 2014-15
Board Member At-Large

Teaching Experience

The University of Texas at El Paso (El Paso, TX)

Research Trends in STEM Education (Graduate)	2022-current
Practitioner Inquiry for Classroom Research (Graduate)	2022-current
Level Teaching Science in Elementary School (Undergraduate)	2022-current
Level Learning Sciences Theory (Doctoral)	2021-current
Level Teaching Science in Secondary School (Undergraduate)	2020-current

LaSalle University Department of Biology (Philadelphia, PA)

Cellular Biology and Genetics Laboratory (Undergraduate)	2019-2020

University of Pennsylvania Graduate School of Education (Philadelphia, PA)

Graduate Level Science Education Methods, Instructor	summer 2020
Graduate Level Maker Studio, Co-Instructor	spring 2020
Graduate Level Learning Sciences: Past, Present, and Future, Co-Instructor	spring 2020
Graduate Level Video Games and Virtual Worlds, Co-Instructor	spring 2020
Graduate Level Science Education Methods, Instructor	summer 2019
Graduate Level Video Games and Virtual Worlds, Guest Lecturer	November 2018

University of Pennsylvania, College of Arts and Sciences (Philadelphia, PA)

Undergraduate Level Introduction to Biology Teaching Assistant	spring 2012
Graduate Level Advanced Biochemistry Teaching Assistant	spring 2011; fall 2012

Johns Hopkins University Center for Talented Youth (CTY) 2013-16
High School Biology Summer Instructor (Johns Hopkins University, Baltimore, MD)
High School Health Science Summer Instructor (King Saud University, Riyadh, Saudi Arabia)
High School Biotechnology Summer Instructor (Haverford College, Lancaster, PA)
High School Biotechnology Summer Instructor (Roger Williams University, Bristol, RI)

Islamic Saudi Academy (Alexandria, VA) 2012-15
High School Biology and Biotechnology Instructor

Friendship Public Charter School (Washington, DC) 2008-12
High School Advanced Placement Biology and Microbiology Instructor

Palm Beach County Public Schools (West Palm Beach, FL) 2007-08
High School Reading Instructor

Orange County Public Schools (Orlando, FL) 2006-07
Middle School Physical Science Instructor

Graduate Students Supervised

Maria D. Perez (dissertation committee chair)
Matthew Munden (dissertation committee member co-chair)
Alex Acquah (Primary Advisor)
Alan Barrera (Primary Advisor)
Estrada, Bernadette (Primary Advisor)
Ana Ferrante (Primary Advisor)
Cynthia Martinez (Primary Advisor)
Crystal Fuentes (Primary Advisor)

Jakia Sultana (Primary Advisor)
Lilia Eskelsen (Secondary Advisor)

Awards

Hopper Dean CS Education Center of Excellence Faculty Fellow 2022-2023