

# Mia S. Shaw

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## EDUCATION

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**Doctor of Philosophy in Teaching, Learning, and Teacher Education** Starting Aug 2017

University of Pennsylvania  
Advisor: Dr. Yasmin Kafai

**Master of Education in Curriculum and Instruction** May 2014

University of Nevada, Las Vegas

**Bachelor of Science in Human Biology with Honors** June 2012

Stanford University

Honors Thesis: "The Birds, The Bees, and Everything in Between: Exploring The Sex Education Experiences of African-American College Students"

Advisors: Dr. Lisa Medoff and Dr. Jennifer Wolf

## RESEARCH INTERESTS

Designing STEAM+CS-rich making environments where Black and Brown youth design artifacts that author expanded identities and restory dominant narratives about STEM and computer science.

## JOURNAL PUBLICATIONS (Peer-reviewed)

Fields, D. A., Lui, D., Kafai, Y. B., Jayathirtha, G., Walker, J. T., & Shaw, M.S. (2021). Communicating about computational thinking: understanding affordances of portfolios for assessing high school students' computational thinking and participation practices. *Computer Science Education*

Shaw, M. S., Fields, D. A., & Kafai, Y. B. (2020). Leveraging Local Resources and Contexts for Inclusive Computer Science Classrooms: Reflections from Experienced High School Teachers Implementing Electronic Textiles. *Computer Science Education*, 30(3), 313-336.

Shaw, M. S., Fields, D. A., & Kafai, Y. B. (2019). Connecting with Computer Science: Electronic Textile Portfolios as Ideational Identity Resources for High School Students. *International Journal of Multicultural Education*, 21(1).

## CONFERENCE PROCEEDINGS (Peer-reviewed)

Shaw, M.S., Ji, G., Zhang, Y., & Kafai, Y.B. (accepted). Promoting socio-political identification with computer science: How high school youth restory their identities through electronic textile quilts. In *Proceedings of RESPECT 2021*.

Shaw, M.S. (accepted). Restorying identity: Towards a development of critical identification with computing for minoritized youth. In *Proceedings of ISLS '21: The Annual Meeting of the International Society of the Learning Sciences*.

Shaw, M.S., Kafai, Y.B., Zhang, Y., Ji, G., Russo, R., & Aftab, A. (accepted). Connecting with Computer Science: Two Case Studies of Restorying CS Identity with Electronic Textile

Quilts. In *Proceedings of ISLS '21: The Annual Meeting of the International Society of the Learning Sciences*.

- Shaw, M. S. (2020). Restorying through Computational Quilts: A Critical Approach Towards Reimagining Computer Science. In *Proceedings of the 2020 ACM Conference on International Computing Education Research (ICER '20)*. Association for Computing Machinery, New York, NY, USA, 344–345. DOI: <https://doi.org/10.1145/3372782.3407114>
- Shaw, M. S. & Kafai, Y. B. (2020). Charting the Identity Turn in K-12 Computer Science Education: Developing More Inclusive Learning Pathways for Identities. In Gresalfi, M. and Horn, I. S. (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 1* (pp. 114-121). Nashville, Tennessee: International Society of the Learning Sciences.
- Shaw, M.S., Coleman, J.J., Kafai, Y.B., & Thomas, E.E. (2019). Restorying geek identity: Reimagining computer science connections with youth of color through collaborative quilts. In *Proceedings of the Second Connected Learning Summit*.
- Jayathirtha, G., Kafai, Y. B., Lui, D., Shaw, M., & Cho, J. Y. (2019). Collaborative Coding and Composing of JazzHands: Integrating the Learning of Advanced Computational Concepts with Electronic Textiles to Make Music Wearables. In *Proceedings from SIGCSE '19: The Fiftieth ACM Technical Symposium on Computer Science Education*. Minneapolis, MN: ACM.
- Kafai, Y.B., Fields, D.A., Lui, D., Walker, J.T., Shaw, M.S., Jayathirtha, G., Nakajima, T., Goode, J., & Giang, M.T. (2019). Stitching the loop with electronic textiles: Promoting equity in high school students' competencies and perceptions of computer science. SIGCSE 2019, Minneapolis, MN: ACM.
- Shaw, M.S., Walker, J.T., & Kafai, Y.B. (2019). Arguing about Synthetic Biology in 140 Characters or Less: Affordances of Microblogging for High School Students Discussions of Socio-Scientific Issues. In *Proceedings of the 2019 Computer-Supported Collaborative Learning Conference of the International Society of the Learning Sciences*.
- Kafai, Y.B., Fields, D.A., Lui, D.A., Walker, J.T., Shaw, M.S., Jayathirtha, G., Nakajima, T.M., Goode, J., & Giang, M. (2019). Stitching the Loop with Electronic Textiles: Promoting Equity in High School Students' Competencies and Perceptions of Computer Science. In *Proceedings from SIGCSE '19: The Fiftieth ACM Technical Symposium on Computer Science Education*. Minneapolis, MN: ACM. Available at <http://www.constructionism2018.fsf.vu.lt/proceedings>.
- Fields, D.A., Shaw, M.S., & Kafai, Y.B. (2018). Personal learning journeys: Reflective portfolios as “objects-to-learn-with” in an e-textiles high school class. In V. Dagiene & E. Jastué, *Constructionism 2018: Constructionism, Computational Thinking and Educational Innovation: conference proceedings* (pp. 213-223). Vilnius, Lithuania.

Walker, J.T., Shaw, M.S., Kafai, Y.B., Lui, D.A. (2018). Biohacking food: A case study of science inquiry and design reflections about a synthetic biology high school workshop. *Proceedings from ICLS '18: The Thirteenth International Conference of the Learning Sciences*. London, UK: ISLS.

Lui, D., Jayathirtha, G., Fields, D.A., Shaw, M.S., & Kafai, Y.B. (2018). Design considerations for capturing computational thinking practices in high school students' electronic textile portfolios. *Proceedings from ICLS '18: The Thirteenth International Conference of the Learning Sciences*. London, UK: ISLS.

### **CONFERENCE PROCEEDINGS (Not peer-reviewed)**

Shaw, M., Coleman, J. J., Kafai, Y. B. & Thomas, E. (2020, Apr 17 - 21) *Restorying Geek Identity: A Case Study of Underrepresented Youth Reimagining Connections Through Collaborative Counter-Storytelling* [Structured Poster Session]. AERA Annual Meeting San Francisco, CA <http://tinyurl.com/yxtgzs7> (Conference Canceled)

Fields, D. A., Kafai, Y. B., Lui, D., Shaw, M., Jayathirtha, G. & Walker, J. T. (2020, Apr 17 - 21) *Supporting Computer Science Engagement and Learning Through Reflective, Process-Based Portfolio Assessments* [Structured Poster Session]. AERA Annual Meeting San Francisco, CA <http://tinyurl.com/y3kvjcfh> (Conference Canceled)

### **BOOK CHAPTERS**

Colket, L., Garrett, J., & Shaw, M. S. (2021). Transformative Storytelling as Critical Praxis for Educational Leaders. In Eds. K. Pak & S. Ravitch, *Critical Leadership Praxis for Educational and Social Change* (pp.). New York, NY: Teachers College Press.

### **SYMPOSIA, DEMOS, WORKSHOPS, & PRESENTATIONS**

Shaw, M.S., Coleman, J.J., Kafai, Y.B., & Thomas, E.E. (accepted). Restorying Geek Identities: Making Interactive Quilts for Critical Reimagining of Maker and Computing Stories. *Proceedings of Ninth Annual Conference on Maker Education (Fablearn 2020)*.

Jayathirtha, G., Shaw, M.S., Kafai, Y.B., & Fields, D.A. (accepted). When a Glove Becomes a Gun: From Personally Meaningful to Socially Critical Restorying in Maker Activities. *Proceedings of Ninth Annual Conference on Maker Education (Fablearn 2020)*.

Jayathirtha, G., Shaw, M.S., & Fields, D.A. (2019). Debugging by Design: Learning by Making and Fixing Mistakes. *Proceedings of Eighth Annual Conference on Maker Education (Fablearn 2019)*.

Walker, J.T., Shaw, M.S., & Kafai, Y.B. (2019). bioCAKES: Making with Biology. *Proceedings of Eighth Annual Conference on Maker Education (Fablearn 2019)*.

### **RESEARCH EXPERIENCE**

University of Pennsylvania - Graduate School of Education

Sept 2017-present

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**Principal Investigator: Yasmin B. Kafai, EdD**

- Collaborated on the implementation of electronic textiles research incorporating art (Google CS-ER: Supporting Computer Science Education Research in K–12 Grant)
- Collaborated on the implementation of the Biomakerlab project (NSF Grant #1623018).
- Collaborated on the implementation of electronic textiles research in teaching and assessment (NSF Grant #1509245).

**Principal Investigator: Pam Grossman, PhD**

July 2017-May 2018

- Conducted research for the Lucas Education Research Student Voice in Project Based Learning project

**Stanford University - Public Service Scholars Program**

June 2012

- Implemented a descriptive, retrospective study of African-American college students' sex education experiences using qualitative and quantitative questionnaire methods

**Researcher**

Stanford University, Public Service Scholars Program

- Implemented a descriptive, retrospective study of African-American college students' sex education experiences using qualitative and quantitative questionnaire methods
- Collaborated with faculty and students across various departments

**TEACHING EXPERIENCE**

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**Instructor**

Sept 2019-present

TeenSHARP

- Developed and taught college-level course "Exploring and Reimagining Science Through the Lens of Race" for high school students as part of the TeenSHARP academic program.

**Teaching Assistant**

Jan 2020-May 2020

University of Pennsylvania Graduate School of Education "Maker Studio" course

- Facilitated class discussions and taught two class sessions focused on the inclusive and critical making, as well as the politics of making

**Presenter, "Girl-Friendly Making"**

May 2017

Maker Faire 2017

- Facilitated a panel with Techbridge Girls girls about the advantages of creating girl-friendly maker spaces.

**Instructor**

Nov 2016

Bay Area Science Festival 2016

- Facilitated two private, hands-on workshops for Chevron employees and their children during the festival

**Instructor**

Mar 2016

US2020 STEMfest

- Led a hands-on, engineering design challenge for middle school students

**Program Coordinator**

July 2014-present

## Techbridge Girls

- Coordinates and implements Techbridge Girls after-school and summer programs for middle school girls
- Refines and pilots science, engineering, and technology curricula that is aligned with Next Generation Science Standards
- Conducts professional development workshops for teachers, role models, and professional audiences about effective strategies for engaging youth in STEM
- Established an ambassador leadership program for eighth-grade participants

## Corps Member

Aug 2012-June 2014

### Teach For America

- Administered appropriate district curriculum which is aligned with the Nevada State Standards.
- Diagnosed and analyzed student progress and provide appropriate instruction.
- Founded an after-school mentorship program for eighth grade girls.

## Teaching Assistant

June 2010-Aug 2010

### Stanford Medical Youth Science Program

- Tutored and mentored 24 students over the course of the summer, emphasis on careers in sciences
- Co-coordinated academic enrichment and social events.
- Connected students with Stanford faculty and health professionals

## TECHNICAL SKILLS

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- Proficient in block-based programming, electronic textiles, and Arduino
- Proficient in Windows OS, Mac OS, and Salesforce

## LANGUAGES

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English: Fluent

Spanish: Classroom knowledge

## HONORS AND AWARDS

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Dean's Award for Academic Excellence

May 2012

Dean's Award for Academic Excellence

May 2009