

# Debra Ann-Ling Lui

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## EDUCATION

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### University of Pennsylvania 2016

**Ph.D. Graduate School of Education & Annenberg School for Communication (Joint Degree)**

Dissertation: *Situating The 'Maker Movement':*

*Tracing The Implementation Of An Educational Trend Within Public Libraries*

Committee: Carolyn Marvin (Chair), Yasmin Kafai, John L. Jackson, Jr. Guobin Yang

### M.A. Annenberg School for Communication 2012

### Massachusetts Institute of Technology 2008

**M.S. Comparative Media Studies**

Thesis: *Neon Signs, Underground Tunnels & Chinese American Identity:*

*The Many Dimension of Visual Chinatown*

Committee: William Uricchio (Chair), Henry Jenkins, Wyn Kelley

### B.S. Architecture & Management Science (Double Major) 2003

## PROFESSIONAL APPOINTMENTS

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### University of Pennsylvania - Graduate School of Education 2016 - present

#### Postdoctoral Fellow

*Project Investigator: Yasmin Kafai, Ed.D.*

Conducting research on how hands-on maker activities can support learning within traditional STEM subjects including computer science and biology. Studying different assessment tools for computational making, including digital portfolios and modular, tangible debugging tools for electronic textiles. Assisting with implementation and research on a series of synthetic biology activities as a form of creative making for high school students. This work was supported by the National Science Foundation (Grant #1509245, #1623018 and # 1742140).

## AWARDS

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### Fred Rogers Memorial Scholarship Recipient, Television Academy Foundation 2014

Awarded \$10,000 to conduct research on media-based educational enactments of the 'Maker Movement'.

## RESEARCH & RELEVANT WORK EXPERIENCE

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### University of Pennsylvania - Graduate School of Education 2012 - 2016

#### Research Assistant

*Project Investigator: Yasmin Kafai, Ed.D.*

Assisted with research on teaching with computational textiles and codeable circuits. Involved with collection and qualitative analysis of data including interviews, field notes, artifacts and photos, and video recordings. Taught electronic-textiles/tangible computing workshops for high school and elementary school students. Participated in writing journal and conference papers. This work was supported by the National Science Foundation (Grant #1238172 and #1509245).

**Massachusetts Institute of Technology – MIT Museum** 2008-2010

**Education & Outreach Programs Coordinator; School Workshop Instructor**

Worked with faculty, staff, and students across the university, as well as local organizations and companies, on a roster of public education and outreach programs, including workshops, lectures, panels, demonstrations and tours for youth, families and adults. Developed and taught workshops in engineering and robotics for middle and high school students. Managed museum partnerships with local schools. Assisted in organizing museum events and initiatives for the annual, citywide Cambridge Science Festival.

**Massachusetts Institute of Technology – Comparative Media Studies** 2006-2008

**Research Assistant (Project New Media Literacies)**

*Project Investigator: Henry Jenkins, Ph.D.*

Created media activities and resources for building ‘21<sup>st</sup> century skills’ for high school students. Studied different participatory creative communities, including video game designers, DJs, and theater artists. Developed related curriculum including the “Reading in a Participatory Culture” teachers’ guide, focused on incorporating popular culture and new media into English classes. Produced accompanying documentary video series as an educational resource. Project was funded by the MacArthur Foundation’s Digital Media and Learning Grants.

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## UNIVERSITY TEACHING EXPERIENCE

### University of Pennsylvania

#### Course Instructor

2013 - present

*EDUC 545: Educational Makerspaces (Co-taught with Yasmin B. Kafai) (Spring 2017)*

*COMM 262: Visual Communication (Summer 2013)*

#### Teaching Assistant

2011 - 2015

*SWRK 798: Social Change through Participatory Filmmaking – John L. Jackson, Jr., Ph.D. (Fall 2015)*

*COMM 225: Children & Media – Amy Jordan, Ph.D. (Fall 2013)*

*COMM 130: Introduction to Mass Media and Society – Joseph Turow, Ph.D. (Spring 2013)*

*COMM 262: Visual Communication – Paul Messaris, Ph.D. (Fall 2012)*

*COMM 322: History & Theory of Freedom of Expression – Carolyn Marvin, Ph.D. (Spring 2011)*

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## PUBLICATIONS

### JOURNAL ARTICLES Peer Reviewed

**Lui, D.**, Walker, J.T., Hanna, S., Kafai, Y.B., Fields., D.A., & Jayathirtha, G. (accepted). Communicating Computational Concepts and Practices within High School Students’ Portfolios of Electronic Textile Designs. *Interactive Learning Environments*.

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

Litts, B. K., Kafai, Y. B., **Lui, D. A.**, 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

**Lui, D.** (2015). Public Curation and Private Collection: The Production of Knowledge on Pinterest.com. *Critical Studies in Media Communication*, 32(2), 128-142.

Kafai, Y. B., Lee, E., Searle, K. S., Fields, D. A., Kaplan, E., & **Lui, D.** (2014). A crafts-oriented approach to computing in high school. *ACM Transactions of Computing Education*, 14(1). 1-20

**CONFERENCE PROCEEDINGS Peer Reviewed**

**Lui, D.**, Anderson, E., Kafai, Y.B. (forthcoming). Is Making all about Tinkering? A Case Study of High School Students' Activities in Biomaker Workshops. In *Proceedings of the 2018 Connected Learning Summit, Cambridge, MA.*

**Lui, D.**, Jayathirtha, G., Fields, D.A., Shaw, M., & Kafai, Y.B. (forthcoming). Design Considerations for Capturing Computational Thinking Practices in High School Students' Electronic Textile Portfolios. In *Proceedings of the International Conference of Learning Sciences in London, UK.*

**Lui, D.**, Anderson, E., Jayathirtha, G., Kafai, Y.B. (2017, October) Learning by Fixing and Designing Problems: Developing a Reconstruction Kit for Debugging E-Textiles. In *Proceedings of the 6th Annual Conference on Creativity and Fabrication in Education.* ACM.

Anderson, E. A., 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 International Conference on the Foundations of Digital Games, FDG '17* (pp. 17). ACM

Fields, D. A., **Lui, D.** & Kafai, Y. B. (2017, July). Teaching computational thinking with electronic textiles: High school teachers' contextualizing strategies in *Exploring Computer Science*. In S. C. Kong, J. Sheldon, & R. K. Y. Li (Eds) *Conference Proceedings of International Conference on Computational Thinking Education 2017*, Hong Kong: The Education University of Hong Kong, 67-72. ISBN: 978-988-77034-4-0

Kafai, Y.B., Telhan, O., Hogan, K., **Lui, D.**, Anderson, E., Walker, J.T., and Hanna, S. (2017, June). Growing Designs with biomakerlab in High School Classrooms. In *Proceedings of the 16<sup>th</sup> international conference on Interaction design and children* (pp. 503-508). ACM.

Litts, B.K., **Lui, D.**, 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 *Proceedings of the 2017 conference on Computer Support for Collaborative Learning. International Society of the Learning Sciences.* ACM.

Litts, B. K., Kafai, Y. B., **Lui, D.**, Walker, J., & 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* (pp. 381-386). ACM.

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

Searle, K. A., Fields, D. A., **Lui, D. A.**, & Kafai, Y. B. (2014, July). Diversifying high school students' views about computing with electronic textiles. In *Proceedings of the Tenth Annual Conference on International Computing Education Research* (pp. 75-82). ACM.

Kafai, Y. B., Searle, K., Kaplan, E., Fields, D., Lee, E., & **Lui, D.** (2013, March). Cupcake cushions, scooby doo shirts, and soft boomboxes: e-textiles in high school to promote computational

concepts, practices, and perceptions. In *Proceeding of the 44th ACM Technical Symposium on Computer Science Education* (pp. 311-316). ACM.

### **BOOK CHAPTERS**

Field, D.A., **Lui, D.**, & Kafai, Y.B. (in press). Teaching Computational Thinking with Electronic Textiles: Modeling Iterative Practices and Supporting Personal Projects in Exploring Computer Science. In S. Kong & H. Abelson (Eds.), *Computational Thinking Education*. Singapore: Springer.

Nichols, T.P. & **Lui, D.** (in press). Learning by Doing: The Tenuous Alliance of the Maker Movement and Educational Reform. In A. Schrock & J. Hunsinger (Eds.), *Making Our World: Hacker and Maker Movements in Context. Digital Formations Series*. New York: Peter Lang Publishing Inc.

### **UNDER REVIEW, SUBMITTED, AND IN PREPARATION**

**Lui, D.**, Kafai, K.B., Litts, B., Walker, J.T., Widman, S.A. (in preparation). Pair eCrafting: High School Students' Practices and Perceptions of Collaborative Crafting and Coding with Electronic Textiles

Kafai, K.B., **Lui, D.**, Anderson, E., Walker, J.T., Hanna, S., Hogan, K., Telhan, O. (in preparation). Youth as Biomakers: Growing Designs and Applications in High School Classrooms.

**Lui, D.**, Litts, B.K., Kafai, Y.B., & Elinich, K. (in preparation). Pop Up Making: Materials, Supports, and Space for Family Making Interactions in a Science Center.

**Lui, D.** (in preparation). The Institutional Contexts of Educational Making: Looking Across the Actor Networks of Library-Based Maker Program.

**Lui, D.** (in preparation). The Digital Production of Space: Examining the Yelp.com Elite Squad.

### **CONFERENCE PRESENTATIONS**

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#### **INVITED TALK**

**Lui, D.** (2017, October). *The Institutional Contexts of Educational Making: Looking Across the Actor Networks of Library-Based Maker Programs*. Presented at Global Initiatives Conference: Social Relationships Across the Lifespan, Northwestern University, Evanston, IL.

#### **REGULAR SUBMISSION**

Anderson, E., **Lui, D.**, Walker, J.T., & Kafai, Y.B. (2018, April). What is a Maker Mindset? Exploring Creative Thinking Skills through E-Textiles and BioDesign Making. Presented at the at the American Education Research Association, New York, NY.

**Lui, D.**, Walker, J.T., Jayathirtha, G., & Kafai, Y.B. (2018, April). Maker Process Portfolios: How Students Document Interdisciplinary E-Textiles Projects within Digital Portfolios. Presented at the at the American Education Research Association, New York, NY.

**Lui, D.**, Walker, J.T., Anderson, E., Hanna, S., Hogan, K., Kafai, Y.B., Telhan, O. (2017, October). *Making with Biology: How to Grow Socially Responsive and Creative Designs with bioMAKERlab*. Presented at the Digital Media and Learning conference, Irvine, CA.

**Lui, D.** & Jayathirtha, G. (2017, October). *DeBug-It! An Electronic Textiles Mat for Iterative Design*. Tech showcase presented at the Digital Media and Learning conference, Irvine, CA.

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*. Paper presented at the American

Education Research Association, San Antonio, TX.

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, San Antonio, TX.

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, San Antonio, TX.

**Lui, D.** (2015, July). *Online Maker Education Platforms: Exploring (In)equity and Technological Affordance*. Paper presented at the International Association for Media and Communication Research, Montreal, Canada.

Laughlin, C. & **Lui, D.** (2015, July). *The Makerspace in the Basement*. Paper presented at the International Association for Media and Communication Research, Montreal, Canada.

**Lui, D.** (2015, June). *Situating Educational Making: Examining the Diverse Contexts of Library Makerspaces*. Ignite Talk presentation at the Digital Media and Learning conference, Los Angeles, CA.

**Lui, D.** & Nichols, T.P. (2015, April). *Learning by Doing: Tracing Conflicting Aims of the Maker Movement in Education*. Paper presented at the American Education Research Association, Chicago, IL.

Lubken, D. and **Lui, D.** (2014, May). *When Freedom Didn't Ring: Narrating a Quiet Moment in the Liberty Bell's Past*. Paper presented at the International Communication Association pre-conference Making Sense of Memory and History, Seattle, WA

**Lui, D.** (2014, May). *The Social Construction of the 21st Century Museum: Digital Mapping and Community Building through MOCA's Mapping Our Heritage project*. Paper presented at the Annual Conference of the International Communication Association, Seattle, WA.

**Lui, D.** (2013, June). *The Digital Production of Social Space: Examining the 'Elite Squad' on Yelp.com*. Paper presented at Communication and the City: Voices, Spaces, Media, University of Leeds, Leeds, UK.

**Lui, D.** (2013, June). *New Channels for Political Agency at the Museum: Youth Oral History Programs at the Museum of Chinese in America (MOCA)*. Paper presented at International Association for Media and Communication Research, Dublin, Ireland.

**Lui, D.** (2012, November). *Touching the Liberty Bell: Affect and Expectation in Ritual*. Paper presented at the Annual Conference of the National Communication Association, Orlando, FL.

**Lui, D.** (2012, May). *Memory Itineraries: Branding Philadelphia Through Bodily Practice*. Poster presented at the Annual Conference of the International Communication Association, Phoenix, AZ.

**Lui, D.** (2012, March). *Evaluating Pop Culture Museum Engagements: Pedagogies of, about, and with Harry Potter*. Paper presented at the Ethnography Forum, Graduate School of Education, University of Pennsylvania, Philadelphia, PA.

**Lui, D.** (2011, July). *Blockbuster Exhibits and Consumer Agency: Pop Culture Media Engagements with the Museum*. Paper presented at Moving Image and the Institution: Cinema and the Museum in the 21<sup>st</sup> Century, Cambridge University, Cambridge, UK.

**Lui, D.** (2011, May). *From the Theater to the Gallery: Harry Potter Engagements within the Museum*. Paper presented at Media in Transition 7, Massachusetts Institute of Technology, Cambridge, MA.

**Lui, D.** (2007, October). *Moby-Dick Remixed: Appropriation as a New Media Literacy*. Paper presented at Creating and Learning in a Media Saturated Culture, Home Inc. Media Literacy conference, Massachusetts Institute of Technology, Cambridge, MA.

**Lui, D.** (2007, May). *The 'You' in YouTube: The Emergence of Collective Identity Formation through Online Video Sharing*. Paper presented at Media in Transition 5, Massachusetts Institute of Technology, Cambridge, MA.

## GRANTS

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**ABCS Course Development Grant, Penn Netter Center for Community Partnerships** 2015  
Awarded \$5,000 grant (in 4-person team) to develop the Academically Based Community Service (ABCS) course "Social Change Through Participatory Filmmaking" with West Philadelphia High School.

**Peter J. Eloranta Undergraduate Summer Research Fellowship, MIT** 2003  
Awarded \$6,000 grant to study the 'Blackbox' theater architecture movement in the 20<sup>th</sup> century.

## MEDIA PRODUCTION

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### FILM/VIDEO

**Producer & Director**, [Growing Up is Activism](#) (with R. Liu), 21 min, documentary film, 2013.  
Screened at the Screening Scholarship Media Festival, University of Pennsylvania, 2013  
Screened at American Educational Research Association (AERA), Amateur Film Festival, 2013

**Producer, Crew & Editor**, [Reading in a Participatory Culture](#) – Project New Media Literacies (with A. Van Someren and T. Rohani), documentary web series, 2007-2008

**Producer, Crew & Editor**, [Big Games and Alternate Reality Games](#) – Project New Media Literacies (with A. Van Someren), documentary web series, 2007-2008

**Producer, Crew, Writer, & Actor**, *MIT in Pocket* – MIT Media Lab/Interactive Cinema Group (with D. Crow, C. Toepel, & L. Kam), fiction film, 2003

### AUDIO

**Producer**, [3620 Podcast](#) – Annenberg School for Communication, 2012 – present  
[Warning: Triggers Ahead](#) (11 min, with A. Sastre); [My Friend, the Pilot](#) (12 min); [How to Make a 3620 Podcast](#) (18 min); [The Past is Present](#) (19 min); [Comprehensive Examination](#) (13 min)

**Editor**, [Philanthropy Unfiltered Podcast](#) – Center for High Impact Philanthropy. 2015.

## ACADEMIC SERVICE

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Proceedings Chair & Short Paper Discussant, FabLearn Conference	2017
Reviewer, FabLearn Conference; American Education Research Association	2017
White Paper Reviewer, National Institute of Education, Singapore	2017
Reviewer, Critical Studies in Media Communication	2016
Special Events Director, Volunteer and Registration Coordinator, Screening Scholarship Media Festival (SSMF), University of Pennsylvania	2013-2015
Workshop Event Coordinator, camra@Penn (Multimedia Pedagogy Collective)	2013-2015

Reviewer, Screening Scholarship Media Festival, University of Pennsylvania	2013-2016
Reviewer, International Communication Association	2013-2014
Reviewer, International Association for Media and Communication Research	2013
Graduate Student Council, Annenberg School for Communication	2012

### **PROFESSIONAL MEMBERSHIPS**

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American Education Research Association (AERA); International Communication Association (ICA); International Association for Media and Communication Research (IAMCR); National Communication Association (NCA)

Revised May 6, 2018