

# Dr. LuEttaMae (Lu) Lawrence

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## APPOINTMENTS

### Postdoc Fellow

Human-Computer Interaction Institute, Carnegie Mellon University  
Supervisors: Vincent Aleven, Ken Holstein, & Bruce McLaren  
August 2020 - Present

### Learning Sciences Researcher

Position offered but cancelled due to COVID-19  
Playful Journey Lab, MIT  
April 2020

## EDUCATION

### Ph.D. in Digital Environments for Learning, Teaching, and Agency | 2020

Curriculum & Instruction, University of Illinois Urbana-Champaign  
Committee: Emma Mercier (Advisor), Mike Tissenbaum, Robb Lindgren, Luc Paquette, Cynthia D'Angelo  
Dissertation: *The design process of a collaborative orchestration tool and its implications for instructor uptake*

### M.A. in Digital Environments for Learning, Teaching, and Agency | 2018

Curriculum & Instruction, University of Illinois Urbana-Champaign  
Committee: Emma Mercier (Advisor), Robb Lindgren, Christina Krist  
Thesis: *Food for Thought: How interface design fosters collaborative data discussions*

### B.F.A. in Graphic Design | 2015

College of Design, Iowa State University

## PUBLICATIONS

### PEER-REVIEWED JOURNALS

**Lawrence, L.** & Mercier, E. (2019). Co-design of an orchestration tool: Supporting engineering teaching assistants as they facilitate collaborative learning. *Interaction Design and Architecture(s) Journal*, (42), 111-130.

### PEER-REVIEWED CONFERENCE PROCEEDINGS

Tucker, T., **Lawrence, L.**, & Mercier, E. (2021). Investigating the effectiveness of an orchestration tool on the nature of students' collaborative interactions during group work. Paper accepted to the American Society for Engineering Education, Long Beach, CA, USA, June 27-30, 2021.

**Lawrence, L.** (2020). Design discourse: Interactions of an interdisciplinary research team and what it means for design-based research. *LSGS Conference 2020*. Madison, WI: Learning Sciences Graduate Students Conference.

Shehab, S., **Lawrence, L.**, Livingston, L., Margotta, A., & Mercier, E. (2020). Towards the effective implementation of collaborative problem solving in undergraduate engineering classrooms: Co-designing guidelines for teaching assistants. Paper accepted to the American Society for Engineering Education, Montreal, Quebec, Canada, June 21-24, 2020.

**Lawrence, L.** (2019). Exploring the design process of an interdisciplinary team building a collaborative orchestration tool. *LSGS Conference 2019 Contexts, Complexity, and Communities: Reflecting on and Reshaping Research on Learning*. Chicago, IL: Learning Sciences Graduate Students Conference.

**Lawrence, L.,** & Mercier, E. (2019). A review of the evolving definition of orchestration: Implications for research and design. In *A wide lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings*. Lyon, France: The International Society of the Learning Sciences.

**Lawrence, L.,** Henderson, A. K., & Mercier, E. (2018). Exploring collaboration between designers and educational researchers to improve interdisciplinary research methods. *LSGS Conference 2018 Expanding Apprenticeship*. Bloomington, IN: Learning Sciences Graduate Students Conference.

Kelly, S. B., **Lawrence, L.,** & Mercier, E. (2017). Engaging everyday science data to help make sense of data. In *Making a Difference—Prioritizing Equity and Access in CSCL: The 12th International Conference on Computer Supported Collaborative Learning*. Philadelphia, USA: The International Society of the Learning Sciences.

**Lawrence, L.** & Mercier, E. (2017). Designing visualizations to monitor collaboration in engineering discussion sessions. In Vogel, C. & Muratovski, G. (Eds.), *Re: Research*. Cincinnati, OH: International Association of Societies of Design Research.

## BOOK CHAPTERS AND BOOK PROPOSALS

Cromley, J. G., Beretvas, S. N., & **Lawrence, L.** (2018). *Models of multimedia comprehension: A review and synthesis of the literature in STEM*. Book proposal accepted March, 2018. Springer.

Cromley, J. G., & **Lawrence, L.** (2018). Multimedia simulations that foster deep learning: Findings from a review of the literature. R. Zheng (Ed.). *Strategies for deep learning with digital technology: Theories and practices in education*. Hauppauge, NY: Nova Science Publishers.

## TEACHER RESOURCES

**Lawrence, L.,** Shehab, S., Livingston, L., & Margotta, A. (2019). Collaborative teaching sequence: A guide for teachers. *CoLearnLab Resources*. <https://www.colearnlab.org/resources>

Kelly, S., **Lawrence, L.,** & Mercier, E. (2017). Food for Thought: User and resource guide. CoLearnLab Resources. <https://www.colearnlab.org/resources>

## GRANTS RECEIVED

### Hardie Dissertation Grant (\$1,984)

*Design and implementation of a supportive technology for teaching assistants.*

Principal Investigator: **LuEttaMae Lawrence**

Funded *March 2019*

### O'Leary Learning Center Grant (\$1,000)

*Designing interdisciplinary lessons around collaborative software for the middle school classroom*

Principal Investigators: Susan Kelly, Megan Kessler, **LuEttaMae Lawrence**, & Jenn White

Funded *December 2017*

### O'Leary Learning Center Grant (\$1,000)

*A new framework for implementing collaboration among designers and educational researchers*

Principal Investigators: **LuEttaMae Lawrence** & Amanda Henderson

Funded *December 2017*

## AWARDS

**TIER-ED Graduate Research Award (\$5,000)** *May 2019.*

**Graduate College Conference Travel Award (\$350)** *March 2019*

**Hardie Conference Travel Support Award (\$500)** *March 2019*

**Block Grant Conference Travel Award (\$1,163)** *March 2018*

**Hardie Conference Travel Support Award (\$500)** *March 2017*

**DELTA Travel Fellowship (\$200)** *March 2017*

## APP DEVELOPMENT

*Food for Thought: Your food, your footprint.* © University of Illinois Board of Trustees – 2017. <https://apps.apple.com/us/app/food-for-thought-your-food-your-footprint/id1200031349>

## PRESENTATIONS

\* = Student co-author

### PEER REVIEW CONFERENCE PRESENTATIONS

**Lawrence, L.**, Shehab, S., Tissenbaum, M., \*Rui, T., & \*Hixon, T. (2021). Human-centered design taxonomy: Case study application with novice, multidisciplinary designers. Paper accepted at the American Educational Research Association, Virtual Conference, April 9-12, 2021.

Shehab, S., **Lawrence, L.**, Tissenbaum, M., \*Rui, T., & \*Hixon, T. (2021). Integrating human-centered design in higher education courses: Evaluating the first iteration. Paper accepted at the American Educational Research Association, Virtual Conference, April 9-12, 2021.

Shehab, S., **Lawrence, L.**, Tissenbaum, M., \*Rui, T., & \*Hixon, T. (2020). Integrating human-centered design in post-secondary courses: Evaluating the first iteration. Paper accepted to the International Congress of Qualitative Inquiry, Champaign, IL, Accepted, but cancelled due to COVID-19.

**Lawrence, L.**, Shehab, S., & Mercier, E. (2020). Examining the use of a supportive orchestration tool by teaching assistants during collaborative problem solving. Paper accepted at the American Educational Research Association, San Francisco, CA, USA, April 17-21, 2020. Accepted, but cancelled due to COVID-19.

Mercier, E., Paquette, L., Bosch, N., **Lawrence, L.**, & Shehab, S. (2020). The development and implementation of an orchestration tool based on live action log data. Paper accepted at the American Educational Research Association, San Francisco, CA, USA, April 17-21, 2020. Accepted by cancelled due to COVID-19.

Jung, J., Mercier, E., & **Lawrence, L.** (2019). Interrogating the tool design processes: Impact of practical needs in theory-driven tool design. Paper presented at the Association for Educational Communities & Technology, Las Vegas, NV, October 21-25, 2019.

**Lawrence, L.** & Shehab, S. (2019). Integrating technology to support teachers' monitoring and intervention strategies during collaborative activities. Paper presented at the Graduate Student Conference, Champaign, IL, March 8, 2019.

**Lawrence, L.**, & Mercier, E. (2018). Designing for collaborative problem solving on multi-touch tables. Paper presented at the American Educational Research Association, New York, NY, USA, April 13-17, 2018.

**Lawrence, L.** (2018). Comparing visual design for teaching data literacy with multi-touch tables. Paper presented at the Graduate Student Conference, Champaign, IL, March 9, 2018.

Kelly, S., Mercier, E., & **Lawrence, L.** (2017). Student collaboration to build joint understanding of data. Paper presented at the annual meeting of the American Educational Research Association, St. Antonio, TX, USA, April 28-May 1, 2017.

**Lawrence, L.**, Mercier, E., & Kelly, S. (2017). Designing for data literacy with collaboration and multi-touch technology. Poster at the annual meeting of the American Educational Research Association, St. Antonio, TX, USA, April 28-May 1, 2017.

## PEER REVIEWED WORKSHOPS

Shehab, S., **Lawrence, L.**, O'Bryan, L., & Switzky, R. (2019, June). *Bringing the human-centered design approach to the K-12 classrooms*. Workshop presented at the Illinois New Teacher Collaborative summer conference, Champaign, IL, USA, June 25-26, 2019.

**Lawrence, L.** (2017, October). *Communicating your research: Poster design*. LSGSC 2017 Conference Proceedings. Workshop presented at the meeting of the Learning Sciences Graduate Students Conference, Bloomington, IN, USA, October 18-19, 2017.

## INVITED PRESENTATIONS AND WORKSHOPS

**Invited Speaker – Human-centered design: A case study application with novice, multidisciplinary designers.** Siebel Center for Design, Champaign, IL, December 3, 2020.

**Invited Speaker – Designing AI-based orchestration tools to support the sudden shift to remote learning.** Digital Environments for Learning, Teaching, and Agency, Champaign, IL, October 20, 2020.

**Invited Workshop – Mapping design features to learning outcomes.** Workshop presented to MIT Playful Journey Lab, Boston, MA, USA, February 18, 2020.

**Invited Workshop – Mapping design features to learning outcomes.** Workshop presented to Tissenbaum Lab, Champaign, IL, USA, February 12, 2020.

**Invited Speaker – Exploring the design process and use of a teacher orchestration tool.** Human-Computer Interaction Institute, Carnegie Mellon University, September 4, 2020

**Invited Speaker – Designing technology to educate students on the environmental impact of food.** Food Science and Human Nutrition Graduate Student Association, Champaign, IL, October 29, 2018

**Invited Panelist – Educational game design.** Playful by Design Spring Symposium, Champaign, IL, April 7, 2018.

**Invited Workshop – Designing your research: Academic poster design.** Special Education Graduate Student Organization, Champaign, IL, September 28, 2018.

**Invited Speaker – Design for collaborative learning.** Physics Education Research Group, Champaign, IL, June 7, 2018.

**Invited Workshop – Designing your research: Academic poster design.** DELTA Seminar, Champaign IL, November 13, 2017

## RESEARCH EXPERIENCE

**Graduate Research Assistant** | January 2019 – August 2020  
*Human Centered Design Assessment*  
Principal Investigators: Rachel Switzky & Mike Tissenbaum  
Siebel Center for Design

**Design Research Consultant** | *January 2019 – August 2020*

*Connections of Earth and Sky with Augmented Reality (CEASAR): Transforming Collaborative Learning Practices with Shared and Embedded Digital Models*

Principal Investigators: Robb Lindgren, Nathan Kimball, Emma Mercier, & Jina Kang  
National Science Foundation (1822796)

**Design Research Consultant & Grant Writer** | *August 2018 – August 2020*

*Parent-Child Collaborative Problem Solving in a Museum Exhibit*

Principal Investigator: Emma Mercier  
Campus Research Board (RB18110)

**Graduate Research Assistant** | *August 2017 – August 2020*

*Improving Collaborative Learning in Engineering Classes Through Integrated Tools for Instructors and Students*

Principal Investigators: Emma Mercier & Luc Paquette  
National Science Foundation (1628976)

**Graduate Research Assistant** | *May 2017 – December 2018*

*Meta-Analysis to Support an Integrated Theory of Multimedia Learning: An ECR Synthesis Proposal* Principal

Investigator: Jennifer Cromley

National Science Foundation (1661231)

**Graduate Research Assistant** | *December 2015 – Aug 2017*

*Fostering Collaborative Drawing and Problem Solving through Digital Sketch and Touch*

Principal Investigators: Emma Mercier, Joshua Peschel, & Geoffrey Herman  
National Science Foundation (1441149)

**Graduate Research Assistant** | *December 2015 – May 2017*

*Computer Supported Collaborative Learning for the Development of Environmental Literacies*

Principal Investigator: Emma Mercier

Campus Research Board (RB15253)

## TEACHING

### COURSES

**Curriculum Designer & Instructor**, Summer Intensive Design Workshops; *June 2016 & June 2017*

**Teaching Assistant**, Art 301: Design Thinking for Non-Majors; *Fall 2015*

### GUEST LECTURER

**Guest Lecturer**, Curriculum and Instruction 590: Digital Environments for Learning, Teaching, and Agency  
Graduate Seminar; *Fall 2019*

**Guest Critic**, Art and Design 471: Graphic Design Capstone; *Spring 2019*

**Guest Critic**, Art and Design 471: Graphic Design Capstone; *Spring 2018*

**Guest Lecturer**, Curriculum and Instruction 590: Mobile Learning Technologies; *Spring 2017*

## ACADEMIC SERVICE

### COMMITTEES

Graduate Student Representative; Search Committee for Assistant Teaching Professor in Computer Science

Education: 2019 - 2020

Learning Sciences Graduate Student Conference; Review Committee: 2018 - 2019

## **CONFERENCE REVIEWER**

American Educational Research Association Conference

International Association of Societies of Design Research Conference

International Conference on Computer Supported Collaborative Learning Conference

Learning Sciences Graduate Student Conference

## **BOOK AND JOURNAL REVIEWER**

Interaction Design and Architecture Journal

R. Zheng (Ed.). Strategies for deep learning with digital technology: Theories and practices in education for  
Nova Science Publishers.

## **MEMBERSHIPS**

American Educational Research Association (AERA)

Association for Educational Community and Technology (AECT)

International Association of Societies of Design Research (IASDR)

International Society of the Learning Sciences (ISLS)

## **PROFESSIONAL EXPERIENCE**

### **Educational Design Consultant**

LuEttaMae Lawrence

*November 2015 - Present*

### **Freelance Designer**

LuEttaMae Lawrence

*September 2012 - June 2018*

### **Graduate Design Intern**

The Meyocks Group, West Des Moines, IA

*June - August 2015*

### **Graphic Design Intern**

818 - A Tiny Design Empire, Des Moines, IA

*March - June 2015*

### **Graphic Designer**

Iowa State Department of Music, Ames, IA

*February 2014 - March 2015*

### **Graphic Designer**

Juls Design, Ankeny, IA

*June - October 2014*

**Graphic Designer**

Monument Wealth Management, Alexandria, VA  
*May 2013 – June 2014*