

CHRISTOPHER PROCTOR

PhD candidate, Stanford University Graduate School of Education
cproctor@stanford.edu | 323.230.0313 | chrisproctor.net

Education

Stanford University	PhD in Education (anticipated 2020) Learning Sciences & Technology Design Paulo Blikstein (advisor), Brigid Barron, Antero Garcia & Roy Pea MS in Computer Science (2018) Artificial Intelligence & Human-Computer Interaction MA in Education (2007) Teaching Secondary English BS in Symbolic Systems (2006) Decision-Making & Rationality BA in English (2006) Critical Theory & Early Modern Period
---------------------	--

Journal articles (peer reviewed)

Proctor, C. & Blikstein, P. (2019). Unfold Studio: Supporting critical literacies of text & code. *Information and Learning Science*, 1(2).

Books (peer reviewed)

Blikstein, P., Bumbacher, E., Davis, R., **Proctor, C.**, & Lin, V. (In final stages of review). *Learning-Centered Design: Methodologies for the Design of Learning Technologies and Environments*.

Book chapters (peer reviewed)

Proctor, C. & Garcia, A. (In press). Student voices in the digital hubbub. In L. Hogg, C. Achieng-Evensen, & K. Stockbridge (Eds.), *The Importance of Student Voice in the Classroom*.

Burke, Q., O'Donnell, K., Angevine, C., & **Proctor, C.** (Accepted). Credentialing computation: Empowering teachers in computational thinking through educator microcredentials. In C. Mouza, A. Yadav, & A. Leftwich (Eds.), *Preparing teachers to teach computer science: Models, practices, and policies*.

Conference proceedings (peer reviewed)

Kafai, Y., **Proctor, C.**, & Lui, D. (2019). From theory bias to theory dialogue: Embracing cognitive, situated and critical framings of computational thinking for K-12 CS education. In R. McCartney et al. (Eds.) *Proceedings of the 2019 ACM Conference on International Computing Education Research*. (pp. 101-109) New York: ACM. (20% accepted.) **Best paper award**.

Proctor, C. (2019). Considering theory in the design of CS education infrastructure: Three framings of computational thinking. In Brusilovsky, P, T.W. Price, L. Malmi and S. Edwards. *Proceedings of SPLICE 2019 workshop Computing Science Education Infrastructure: From Tools to Data* at 15th ACM International Computing Education Research Conference, Aug 11, 2019, Toronto, Canada. (Invited submission).

Proctor, C. (2019). Measuring the computational in computational participation: Debugging interactive stories in middle school computer science. In K. Lund et al. (Eds.). *A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings*,

13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019. (pp. 104-111). Lyon, France: ISLS.

- Proctor, C.**, Bigman, M., & Blikstein, P. (2019). Defining and designing computer science education in a k-12 public school district. In E. Hawthorne & M. Pérez-Quiñones (Eds.) *Proceedings of the 50th ACM Technical Symposium on Computer Science Education (SIGCSE '19)*. (pp. 314-320). New York: ACM. (32% accepted)
- Kafai, Y., **Proctor, C.**, Lui, D. (2019). Framing Computational Thinking for Computational Literacies in K-12 Education. In *Proceedings of the 2nd Weizenbaum Conference*. Berlin, Germany.
- Boles, K., Macedo, L., **Proctor, C.**, & Blikstein, P. (2018). Manipul8: An Interactive Experience to Inspire Pattern-Based Algebraic Thinking and Representational Fluency. Demo presented at Interaction Design & Children (IDC), Trondheim, Norway.
- Mongkhonvanit, K., Zau, C., **Proctor, C.**, & Blikstein, P. (2018). Testudinata: A Tangible Interface for Exploring Functional Programming. Demo presented at Interaction Design & Children (IDC), Trondheim, Norway.
- Proctor, C.**, & Blikstein, P. (2018). How broad is computational thinking? A longitudinal study of practices shaping computer science learning. In J. Kay & R. Luckin (Eds.). *Rethinking Learning in the Digital Age: Making the Learning Sciences Count, 13th International Conference of the Learning Sciences (ICLS) 2018*. (pp. 544-551). London, UK: ISLS. (32% accepted)
- Davis, R., **Proctor, C.**, Friend, M., & Blikstein, P. (2018). Solder and wire or needle and thread: do the tools we use change the way we think? In J. Kay & R. Luckin (Eds.). *Rethinking Learning in the Digital Age: Making the Learning Sciences Count, 13th International Conference of the Learning Sciences (ICLS) 2018*. (pp. 800-807). London, UK: ISLS. (32% accepted)
- Proctor, C.**, & Blikstein, P. (2017). *Interactive Fiction: Weaving together literacies of text and code*. Work-in-progress paper presented at Interaction Design and Children (IDC), Stanford, CA.
- Proctor, C.** & Blikstein, P. (2016). Grounding how we teach programming in why we teach programming. (pp. 127-134). In A. Sipitakiat & N. Tutiya-phuengprasert (Eds.) *Constructionism in Action: Proceedings of Constructionism 2016*.

Research experience

- 2019- **Visiting scholar** Paulo Blikstein, Teachers College, Columbia University
Research and development lead for constructionist computer science curriculum.
- 2018- **Research assistant** Daniel McFarland, Stanford University
- 2019 Used topic models and NLP embeddings to model how academic fields change over time and how diversity of participants drives innovation.
- 2017 **Research consultant** Digital Promise
Developed ten micro-credentials to support professional development in teaching computational thinking. Published on Bloomboard.
- 2015- **Research assistant** Paulo Blikstein, Stanford University
- 2018 Led several participatory design-based research projects to design and develop constructionist learning technologies.

University teaching experience

- 2019 **TA**, Stanford University, The Centrality of Literacies in Teaching & Learning.
- 2019 **Instructor**, Teachers College, Columbia University, Beyond Bits and Atoms: Designing Technical Tools.
- 2019 **Instructor**, Teachers College, Columbia University, Beyond Bits and Atoms Lab.
- 2018 **Instructor**, Stanford University, Beyond Bits and Atoms: Designing Technical Tools.
- 2018 **TA**, Stanford University, The Centrality of Literacies in Teaching & Learning.
- 2017 **TA**, Stanford University, Beyond Bits and Atoms: Designing Technical Tools.
- 2017 **TA**, Stanford University, The Centrality of Literacies in Teaching & Learning.

K12 teaching experience

Certifications: National Board (2012), Texas English (2009), California English & Math (2007, 2009)

- 2014- **Computer Science Teacher** at Creekside Learning Lab, Woodside, CA
- 2016 Developed and taught weekly lessons for 4th and 5th grade students.
- 2013- **Computer Science Teacher** at The Girls' Middle School, Palo Alto, CA
- 2015 Developed interdisciplinary two-year CS curriculum in Scratch and Python based on creative media production. Designed and implemented interface for new school information system. Led a yearlong design process to incorporate Maker pedagogy more deeply into school.
- 2010 **Teaching Shakespeare Institute**, Folger Shakespeare Library, Washington, DC
National Endowment for the Humanities summer institute focused on teaching Shakespeare through performance and primary source research.
- 2009- **English Teacher** at Westlake High School, Austin, TX
- 2011 Designed, taught, and published curriculum units emphasizing blogs, wikis, groupwork, performance assessments with outside audiences. Developed and new educational technologies to support reading and writing. Awarded Golden Apple teaching award.
- 2007- **English Teacher** at Palo Alto Senior High School, Palo Alto, CA
- 2009 Proposed and piloted equitable detracked freshman English course. Lead author on departmental scope-and-sequence plan and schoolwide summary of assessment practices. Recommended for tenure.

Software development experience

Full-stack developer with specialty in user research, UI, UX, machine learning, academic computing. Expert in Python, Javascript, web technologies. Proficient in C, C++, Java, Swift, R.

- 2017- **Research software developer** for PeerTeach, Palo Alto, CA
- 2018 Supported design, developed, and deployed interactive web application for helping students become more effective peer tutors.
- 2016- **Lead designer and developer** of Unfold Studio
Web application for interactive storytelling and literacy-based CS education. Deployed at 6 schools; 10k student stories submitted. (<https://unfold.studio>)
- 2012- **Lead developer** at cK-12 Foundation, Palo Alto, CA
- 2013 As leader of cK-12's Interactive Learning Group, wrote interactive learning design framework and led a team of 8 developing interactive algebra and geometry curricula. Designed architecture to serve over 500k interactive simulations; analyzed student interactions to assess learning.

Grants & fellowships

- 2019 \$10,000 grant from SPLICE, NSF-funded initiative to develop infrastructure for computing education research: Scaling ProgSnap2 for Wider Adoption
- 2019 L. Ramon Veal Research Seminar, National Council of Teachers of English
- 2019 \$8000 TELOS Grant, Scaling Up Unfold Studio: Computational Literacy Beyond Silicon Valley
- 2017 Honorable Mention, National Science Foundation Graduate Research Fellowship
- 2017 \$4,250 Lopatin Fellowship, The linguistic production of learning opportunities
- 2016 \$17,000 MediaX Grant, The contextual future of situated schools
- 2016 \$7,500 TELOS Grant, Interactive fiction: Weaving together literacies of text and code

Presentations

- 2019 *Stories Told and Lessons Learned: Literacy-based Computer Science at an Iowa Middle School*. Presentation at Iowa Technology and Education Conference (ITEC), Des Moines, Iowa.
- 2019 *Interactive Storytelling with Unfold Studio* Workshop at Iowa Technology and Education Conference (ITEC), Des Moines, Iowa.
- 2019 *Connecting Computational Thinking to Broader Literacies* Presentation at TELOS festival, Stanford University.
- 2018 *Interactive Storytelling: Weaving Together Literacies of Text and Code*. Philly Celebration of Writing & Literacy, Philadelphia, PA. Philadelphia Writing Project
- 2018 Invited speaker, Stanford Teacher Education Program Computer Science Curriculum & Instruction pilot course
- 2018 *Interactive Storytelling*. Workshop at Computer Science Teachers Association (CSTA) annual conference, Omaha, NE.
- 2017 *Worldbuilding for Safe, Secure, and Private Futures: Producing Internet-Related Role-playing Games and Interactive Fiction*. Workshop at MozFest 2017, London, UK, with Antero Garcia
- 2017 Invited speaker, Stanford Center for Supporting Excellence in Teaching & TELOS Professional development course for EdTech integration specialists.
- 2016 *Weaving english/language arts into computational literacy*. Abstract presented at Learning Sciences Graduate Student Conference (LSGSC), Chicago, IL.
- 2016 Invited speaker, Norcal Media Day, Palo Alto, CA. Journalism Education Association of Northern California

Academic community

- 2019 **Reviewer** for SIGCSE workshops; SIGCSE Program Committee.
- 2019 Building a Participatory Classroom Culture Through Gaming. (In press.) NCTE Quick Reference Guide written with Antero Garcia.
- 2018 **Reviewer** International Conference of the Learning Sciences (ICLS), FabLearn 2019
- 2017 **Conference volunteer** Interaction Design & Children (IDC) 2017, Stanford, CA; FabLearn 2017, Stanford, CA
- 2017- **Participant** University of Pennsylvania Research Apprenticeship seminar
- 2018, **Professional development leader** Darunsikkhalai School, Bangkok, Thailand
- 2017 Planned and led two four-day workshops for 35 teachers on constructionist pedagogy, with a focus on powerful ideas, assessment, and shaping learning environments.
- 2016 **Conference volunteer** FabLearn 2016, Stanford, CA
- 2015 **Professional development leader** Merced County Office of Education, California
Planned and led a two-day workshop for 20 teachers on using Arduino in STEM high school courses.

Revised September 2019