

Kevin N. Hall

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Professional Summary

Former science teacher with 13 years of classroom experience turned researcher and curriculum designer, specializing in STEM equity, digital learning environments, and natural language processing applications in education. Currently developing AI-supported tools and frameworks that help teachers adapt science curricula to be more culturally sustaining, justice-centered, and rooted in students' lived experiences.

Education

- **Ph.D. Candidate in Digital Environments for Learning, Teaching, & Agency**
University of Illinois Urbana-Champaign | Expected May 2026
- **Visiting Student Scholar**
Stanford University | January 2025 - Present
- **Master of Education in Digital Environments for Learning, Teaching, & Agency**
University of Illinois Urbana-Champaign | 2022
- **Master of Education in Curriculum and Instruction**
University of Illinois Urbana-Champaign | 2002
- **Bachelor of Science in Ecology, Ethology, and Evolution**
University of Illinois Urbana-Champaign | 1998

Research Areas

STEM Equity, Science Education, CS Education, Professional Development, Emerging Technologies in Education, Computational Thinking, Digital Equity and Inclusion, PVEST, Sense of Belonging

Research Experience

Graduate Research Assistant, Stanford University | January 2025 - present

- **Teacher Planning Using Generative AI**
GenAI+Learning Seed Grant
 - Developing AI-supported frameworks for teacher curriculum planning and adaptation

Graduate Research Assistant, University of Illinois Urbana-Champaign | 2020 - present

- **Community Catalysts: Empowering Rantoul's Youth and Parents through a Community-Centered Approach to Educational Transformation** | July 2024 – June 2025

- Designed and facilitated Participatory Action Research training for parent mentor groups
- Developed community-centered frameworks for educational transformation
- **A Professional Development Model for High School Teachers to Adapt Curricula Toward Students' Knowledges and Resources**
NSF Research Grant | Summer 2023 - present
 - Co-designed professional development frameworks for culturally sustaining curriculum adaptation
 - Analyzed teacher implementation strategies across multiple high school contexts
- **Enacting Materials to Promote Ownership, Engagement, and Relevance for High School Science Teachers**
NIH Research Grant | Fall 2023 – Present
 - Co-developed curricular materials enhancing student engagement and ownership in science learning
 - Conducted mixed-methods analysis of teacher implementation and student outcomes
- **Chancellor's Call to Action to Address Racism & Social Injustice**
Research Grant | Summer 2022 – Summer 2024
 - Investigated systemic racism and social injustice within educational settings using computational analysis
 - Partnered with communities to develop actionable strategies for institutional change
- **Theory-based Computational Analysis of Classroom Audiovisual Data (T(CA)²)**
Research Grant | Summer 2023 – Summer 2024
 - Applied machine learning and NLP techniques to analyze large-scale classroom audiovisual datasets
 - Developed computational models to understand classroom interactions and discourse patterns
- **Progressing through the Ages: Global Change, Evolution, and Societal Well-being (PAGES)**
Research Grant | Fall 2020 – 2023
 - Analyzed educational methods to increase student awareness of global change and evolution
 - Developed curriculum frameworks linking scientific concepts to societal well-being
- **Connected Spaces Makerspaces for Black Youth**
Research Grant | Fall 2020 – 2022
 - Conducted ethnographic research on STEM engagement among Black youth in makerspaces
 - Developed equity-centered programs enhancing access and participation in STEM activities

- **Formative, Automated Assessment of Student Thinking (FAAST): Feedback on Student Epistemic Views**

Research Grant | Fall 2020 – 2022

- Co-developed automated assessment tools for evaluating student epistemic thinking
- Implemented AI-powered feedback mechanisms supporting student learning and agency

Summer Research Intern | Summer 2020

- **Siebel Center for Design** | Conducted human-centered design research on improving students' perceptions and engagement with peer feedback in design courses

Publications

- Ko, M. M., Krist, C., Hug, B., Wingert, K., Suárez, E., Lauren, L. H., Leonardi, N., **Hall, K.**, & Light, E. (2024). EMPOWER: Enacting Materials to Promote Ownership, Engagement, and Relevance. 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. 2303-2304). International Society of the Learning Sciences.
- **Hall, K.**, Krist, C., & Tissenbaum, M. (2023). Being a good student: Risks and reactive coping strategies encountered in a summer STEM makerspace for Black youth. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 688-695). International Society of the Learning Sciences.
<https://repository.isls.org//handle/1/10316>
- Krist, C., **Hall, K.**, et al. (2023). Understanding the Assemblage of Community Desire: Progress, Challenges, and Tensions in Establishing a Community-Based Health Justice Science Education Curriculum Collaborative. In *Proceedings of ICLS 2023*, pp. 1266-1269.
- Tissenbaum, M., Holbert, N., Halverson, E., Smith, C., Correa, I., **Hall, K.**, Bawankule, A., Danzig, B., Maltese, A., Bers, M., Blake-West, J., Fields, D., Kafai, Y., Butapetch, H., Ottina, J., Chapman, G., Saplan, K. & Millerjohn, R., Oct 2023. Interactive Tools for Distributed Community Building and Collaboration in Maker Education In *Proceedings of the 16th International Conference on Computer-Supported Collaborative Learning - CSCL 2023*. International Society of the Learning Sciences (ISLS), p. 347-355
- Shim, S.-Y., Krist, C., Ko, M.-L. M., Jarosewich, T., **Hall, K.**, & Hug, B. (2022). Teacher Sensemaking of Potential Educative Features in Science Curricular Materials. In *Proceedings of ICLS 2022*, pp. 1489-1492.
- Arastoopour Irgens, G., Dabolkar, S., Bain, C., Woods, P., **Hall, K.**, Swanson, H., ... & Wilensky, U. (2019). Modeling and Measuring Students' Computational Thinking Practices in Science. *Journal of Science Education and Technology*.

- Swanson, H., Arastoopour Irgens, G., Bain, C., **Hall, K.**, et al. (2018). Characterizing Computational Thinking in High School Science. In *Proceedings of the 13th International Conference of the Learning Sciences*, Vol. 2, 871-878.

Book Chapters

- **Hall, Kevin**, and Christina Krist. "Unsupervised ML with Text Data." In *Applying Machine Learning in Science Education Research: When, How, and Why?*, pp. 281-312. Cham: Springer Nature Switzerland, 2025.

Conference Presentations

- Krist, C., **Hall, K.**, Moodie, E., Hug, B., Smith, R., Dariotis, J. K., Whitaker, R., Nguyen, T. H., Vill, B., Krist, D., Suarez, E., & Ko, M. (April 5, 2024). Establishing a community-based curriculum materials collaborative for health justice science education. *Poster presented at the 2nd Chancellor's Call to Action to Address Racism & Social Injustice Research Symposium, Urbana IL.*
- Shim, S., Krist, C., **Hall, K.**, Ko, M. L., Jarosewich, T., & Hug, B. (2024). Flexible tool or verbatim script?: Teachers' framing and uses of educative features in curriculum materials. Paper presented at NARST 2024, Denver CO.
- **Hall, K.**, Hug, B., & Krist, C. (April 2023). Using a computational grounded theory approach to examine the shift to NGSS alignment in AP Biology curriculum materials. *Paper presented at NARST 2023, Chicago IL.*
- **Hall, K.**, Krist, C., & Kuo, E. (March 2022). Perspectives on generalizability in problem-solving from undergraduate physics students: Influences of a mastery homework approach. *Paper presented at NARST 2022, Vancouver BC.*
- Shim, S. Y., **Hall, K.**, Jarosewich, T., Krist, C., Ko, M. L., & Hug, B. (March 2022). Proposing a framework to analyze educative features in NGSS-aligned science curricular materials. *Paper presented at NARST 2022, Vancouver BC.*

Workshops & Professional Development

- **[Workshop]** How to use AI and center people in science education research. *Facilitated by Marcus Kubsch, Christina Krist, Peter Wulff, Joshua Rosenberg, Kevin Hall, Eugene Cox, Chris Palaguachi, & Paul Tschisgale* NARST 2024 Pre-Conference Workshop, Denver CO Mar 17, 2024
- **[Workshop]** Enriching qualitative video analysis with computational techniques: A focus on naturalistic classroom settings. *Facilitated by Christina Krist, Paul Hur, Kevin Hall, & Chris Palaguachi* MASER: Methodological Advances in Science Education Research Weizmann Institute of Science, Rehovot, Israel Sept 11, 2023

- **[Professional Development Workshop]** EMPOWER Year 1: Enacting Materials to Promote Ownership, Engagement, and Relevance for High School Science Teachers Facilitated by Christina Krist, Barbara Hug, & **Kevin Hall** University of Illinois Urbana-Champaign, NSF DRK12 award #2300743 Aug 7-9, 2023
- **Micro:bit Professional Development for Computer Science Teachers** | Spring 2021

Teaching Experience

Graduate Teaching Assistant, University of Illinois Urbana-Champaign | Spring 2020

- Co-designed and implemented Instructional Literacy course for 25+ pre-service teachers
- Facilitated breakout sessions and provided formative feedback on student assignments

Graduate Teaching Assistant, University of Illinois Urbana-Champaign | 2001 – 2002

- Taught technology integration in education to cohorts of pre-service teachers
- Mentored students in developing professional websites and digital portfolios

Leadership & Professional Experience

Director of Curriculum Development, CT-STEM Project, Northwestern University | 2016 – 2019

- Co-developed computational thinking-integrated science units with 16 teachers across three high schools
- Led design and administration of CT-STEM interactive e-learning website serving 200+ registered teachers
- Managed interdisciplinary curriculum team of 10-12 graduate and undergraduate students
- Served on steering committee collaborating with CCL and TIDAL Labs

Science Teacher & Department Leader | 2002 – 2015 *International School of Panama (2013-2015), Uruguayan American School (2011-2013), The Codrington School, Barbados (2008-2011), Chicago Public Schools (2002-2008)*

- **Head of Science Department**, Hyde Park Academy (2004-2007): Led science department for school of 2,000 students
- **IB MYP Curriculum Coordinator**, The Codrington School (2010-2011): Trained and mentored teachers in IB Middle Years Program implementation
- **Area Science Instructional Specialist**, Chicago Public Schools (2007-2008): Coached 30+ teachers across 20+ high schools; designed and delivered professional development for 100+ educators

- Taught diverse student populations across grades 6-12 in Biology, Physics, Chemistry, Environmental Science, and IB programs

Technical Skills

Programming & Data Science: Python, spaCy, BERT, Gensim, NLTK, Natural Language Processing, LLMs, Machine Learning

Web & Development: HTML5, CSS3, JavaScript, Bootstrap 4, jQuery, Git, Visual Studio

Educational Technology: Processing, Arduino, NetLogo, Scratch, Unity, e-Learning Tools, Streamlit, LangGraph, Hugging Face

Hardware & Emerging Technologies: Computer assembly and repair, Virtual Reality, Raspberry Pi, Robotics, Arduino

Research & Analysis: WhisperX, Office Suite, qualitative and quantitative data analysis

Certifications

Illinois Secondary Teaching Certification | 2002

Endorsements:

- High School (9-12): Biology, Botany, Chemistry, General Science, Physics, Zoology
- Middle Grades (6-8): Biological Science, General Science, Language Arts, Physical Science