

Alexandria K. Hansen

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CURRENT APPOINTMENTS

2018- current **Assistant Professor**, Science Education
Coordinator, Natural Science BA Degree Program
Coordinator, Single Subject Science Teaching Credential Program
Assistant Director, STEM Education Center
California State University, Fresno

EDUCATION

2018 **University of California, Santa Barbara**
Ph.D. STEM Education
Committee: Dr. Danielle Harlow, Dr. Julie Bianchini & Dr. Jason Duque
Dissertation: How Preservice Elementary Teachers' Design and Facilitation of a Maker Faire Activity Contributes to Differences in Children's Learning

2015 **University of California, Santa Barbara**
M.A. STEM Education

2011 **Loyola Marymount University, Los Angeles**
Secondary Science Teaching Credential (Cleared 2013)

2010 **University of California, Irvine**
B.S. Biological Sciences; Education Minor

PROFESSIONAL EXPERIENCE

2016-18 **Graduate Student Researcher**, Department of Education, UC Santa Barbara
Science and Mathematics Teacher Research Initiative (NSF, DUE, Award 1557283)

2016-18 **Graduate Student Researcher**, Department of Education, UC Santa Barbara
CalTeach: Science & Mathematics Initiative (NSF, DUE, Award 0934735)

2013-18 **Program Coordinator**, California NanoSystems Institute, UC Santa Barbara
School for Scientific Thought

2016-17 **Curriculum Designer & Consultant**
The Wolf Museum of Exploration and Innovation (MOXI), Santa Barbara, CA

2013-16 **Graduate Student Researcher**, Department of Computer Science, UC Santa Barbara
Developing Learning Progressions to Integrate Computational Thinking (NSF, CNS, Award #1240985)

TEACHING EXPERIENCE

UNIVERSITY

2018- current

Secondary Science Teaching Methods
Department of Curriculum & Instruction, Fresno State

Bioinspired Design
Department of Biology, Fresno State

Biology Teaching and Outreach
Department of Biology, Fresno State

Nature of Science
Natural Science Program, Fresno State

How People Learn
Natural Science Program, Fresno State

Environmental, Earth & Life Science
Natural Science Program, Fresno State

Graduate & Undergraduate Research Supervisor
Department of Biology, Fresno State

2016-18 **Undergraduate Research Supervisor**
Department of Education, UC Santa Barbara

2013-18 **Elementary Science Teaching Methods**, Teaching Assistant
Teacher Education Program, UC Santa Barbara

2013-15 **Masters of Education (M.Ed.) Facilitator**
Teacher Education Program, UC Santa Barbara

K-12
2013-16 **Elementary Computer Science Instructor**, Santa Barbara & Oxnard, CA
Kids Engaged in Learning Programming and Computer Science (KELP-CS)

2013-14 **Lego Engineering Instructor**, Ventura, CA
Play-Well TEKnologies

2010-13 **Middle School Science Teacher**, Los Angeles, CA
California Academy for Liberal Studies Charter Middle School

2011-12 **Middle School Math Teacher**, Los Angeles, CA
California Academy for Liberal Studies Charter Middle School

2010-12 **Corps Member**, Los Angeles
Teach for America

SCHOLARSHIP

REFEREED JOURNAL ARTICLES

‡ = student co-author

- Duong, T. ‡, Telemeco, M., Dean, C. ‡, **Hansen, A.K.** (2022). Piloting virtual field trips during a pandemic: Developing curriculum, lessons learned, and recommendations. *Connected Science Learning*, 4(2). <https://www.nsta.org/connected-science-learning/connected-science-learning-march-april-2022/piloting-virtual-field-trips>
- Moon, S., Carpenter, S.L., **Hansen, A.K.**, Bushong, L., Bianchini, J.A. (2021). Examining the effects of undergraduate STEM teacher recruitment and teacher education programs on preservice secondary science and mathematics teacher readiness and teacher performance assessment (edTPA) scores. *School Science and Mathematics*, 121(8), 452-465. <https://doi.org/10.1111/ssm.12498>
- Lent, D.D., Estes, K.M. ‡, **Hansen, A.K.** (2021). Increasing faculty involvement in the undergraduate interdisciplinary learning experience. *Integrative & Comparative Biology*, 61(3), 1002-1012. <https://doi.org/10.1093/icb/icab109>
- Hansen, A.K.**, Connors, P., Donnelly-Hermosillo, D., Full, R., Hove, A., Lanier, J., Lent, D., Nation, J., Tucker, K.P., Ward, J., Whitenack, L., Zavaleta, E. (2021). Biology beyond the classroom: Experiential learning through authentic research, design, and community engagement. *Integrative & Comparative Biology*, 61(3), 926-933. <https://doi.org/10.1093/icb/icab192>
- Hernandez, T. ‡, Donnelly-Hermosillo, D., Person, E., **Hansen, A.K.** (2021). “At least we could give our input”: Underrepresented student narratives on conventional and guided inquiry-based laboratory approaches. *Integrative & Comparative Biology*, 61(3), 992-1001. <https://doi.org/10.1093/icb/icab014>
- McBeath, J.N., **Hansen, A.K.** (2021). Perspectives on Community STEM: Learning through partnerships between scientists, researchers, and youth. *Integrative & Comparative Biology*, 61(3), 1055-1065. <https://doi.org/10.1093/icb/icab092>
- Hansen, A.K.**, Gribble, J. ‡, Moran, A., Hansen, E.R. ‡, Harlow, D.B. (2021). Making computer science accessible. *Science & Children*, 58(5), 80-85. <https://www.nsta.org/science-and-children/science-and-children-mayjune-2021/making-computer-science-accessible>
- Hansen, A.K.**, Langdon, T. ‡, Mendrin, L.W. ‡, Peters, K. ‡, Ramos, J. ‡, Lent, D.D. (2020). Exploring the Potential of 3D-printing in Biological Education: A Review of the Literature. *Integrative & Comparative Biology*. <https://doi.org/10.1093/icb/icaa100>
- Carpenter, S.L., Iveland, A., Moon, S., **Hansen, A.K.**, Harlow, D.B., & Bianchini, J. A. (2019). Models are a “metaphor in your brain”: How potential and preservice teachers understand the science and engineering practice of modeling. *School Science and Mathematics*, 119(5), 275-286. <https://doi.org/10.1111/ssm.12340>
- Hansen, A.K.**, McBeath, J.K., and Harlow, D.B. (2019) No bones about it: How digital fabrication changes student perceptions of their role in the classroom," *Journal of Pre-College Engineering Education Research (J-PEER)*: Vol. 9: Iss. 1, Article 6. <https://doi.org/10.7771/2157-9288.1155>

Harlow, D., Dwyer, H., **Hansen, A.K.**, Iveland, A., & Franklin, D. (2018). Ecological design based research in computer science education: Affordances and effectivities for elementary school students. *Cognition and Instruction*, 36(3). <https://doi.org/10.1080/07370008.2018.1475390>

Hansen, A.K., Hansen, E.R., Harlow, D.B. (2018). Fabricating fidgets to support inclusive maker education. *Connected Science*. Available at <http://csl.nsta.org/2018/08/fabricating-fidgets/>

Harlow, D.B. & **Hansen, A.K.** (2018). School Maker Faires as Preservice Teacher Education. *Science & Children*, 55(7), 30-37.

Arya, D., Harlow, D.B., **Hansen, A.K.**, Harmon, L., McBeath, J.K., Pulgar, J. (2017). Innovative youth: An engineering and literacy integrated approach. *Science Scope*, 40(9), 82-88.

Hansen, A.K., Iveland, A., Dwyer, H.A., Franklin, D., Harlow, D.B. (2015). Programming science digital stories: Computer science and engineering design in the science classroom. *Science and Children*, 53(3), 60-64.

BOOK CHAPTERS

Harlow, D.B., Skinner, R., **Hansen, A.K.**, McBeath, J., Barriault, C., Pulgar, J., McLean, M., Spina, A. (In Press). Creating STEM learning opportunities through partnerships. *Handbook of Research on STEM Education*. Routledge.

Harlow D.B., **Hansen A.K.**, McBeath J.K., Leak A.E. (2018) Teacher education for maker education: Helping teachers develop appropriate PCK for engaging children in educative making. In: Uzzo S., Graves S., Shay E., Harford M., Thompson R. (Eds.) *Pedagogical Content Knowledge in STEM*, Springer, Cham.

Harlow, D.B., Dwyer, H.A., **Hansen, A.K.**, Hill, C., Iveland, A., Leak, A., Franklin, D. (2015). Computer programming in elementary and middle school: Connections across content. In M. Urban and D. Falvo (Eds.) *Improving K-12 STEM educational outcomes through technological integration*, 337-361. Hershey, PA: IGI Global.

PEER-REVIEWED CONFERENCE PROCEEDINGS

‡ = student co-author

Gribble, J., ‡ **Hansen, A.K.**, Harlow, D.B., Lai, K. ‡ (2020). Talk and Tech: The impact of technology type and setting on the communication patterns of a child with Autism. In *Proceedings of the International Conference of the Learning Sciences (ICLS)*, Volume 2, 771.

Weinstein, D., **Hansen, A.K.**, Harlow, D., Franklin, D. (2018). Starting from Scratch: Outcomes of early computer science learning experiences and implications for what comes next. In *Proceedings of the 14th International Conference on Computing Education Research (ICER '18)*. Espoo, Finland: ACM.

Hansen, A.K., Hansen, E.R., Hall, T. ‡, Fixler, M., Harlow, D. (2017). Fidgeting with fabrication: Students with ADHD making tools to focus. In *Proceedings of FabLearn: Conference on Creativity and Fabrication in Education (FabLearn '17)*. Palo Alto, CA: ACM.

- Gribble, J.[‡], **Hansen, A.K.**, Harlow, D.B., Franklin, D. (2017). Cracking the code: The impact of computer coding on the interactions of a child with autism. In *Proceedings of the 16th International Conference on Interaction Design and Children (IDC '17)*. Palo Alto, CA: ACM.
- Hansen, A.K.**, Dwyer, H.A., Iveland, A., Talesfore, M.[‡], Wright, L.[‡], Harlow, D.B., Franklin, D. (2017). Assessing children's understanding of the work of computer scientists: The draw-a-computer scientist test. In *Proceedings of the 48th Technical Symposium on Computer Science Education (SIGCSE '17)*. Seattle, WA: ACM.
- Franklin, D., Skifstad, G.[‡], Rollock, R.[‡], Mehrota, I.[‡], Ding, V.[‡], **Hansen, A.K.**, Weintrop, D., Harlow, D.B. (2017). Using upper-elementary student performance to understand conceptual sequencing in a blocks-based curriculum. In *Proceedings of the 48th Technical Symposium on Computer Science Education (SIGCSE '17)*. Seattle, WA: ACM.
- O'Brien, S., **Hansen, A.K.**, Harlow, D.B. (2016). Educating teachers for the maker movement: Pre-service teachers' experiences facilitating maker activities. In *Proceedings of FabLearn: Conference on Creativity and Fabrication in Education (FabLearn '16)*. Palo Alto, CA: ACM.
- Hansen, A.K.**, Harlow, D.B. (2016). Making and breaking bones: Learning physics through engineering design. In *Proceedings of the Physics Education Research Conference (PERC '16)*. Sacramento, CA.
- Hansen, A.K.**, Iveland, A., Carlin, C.[‡], Franklin, D., Harlow, D.B. (2016). User-centered design in block based programming: Developmental and pedagogical considerations for children. In *Proceedings of the 15th International Conference on Interaction Design and Children (IDC '16)*. Manchester, UK: ACM.
- Hansen, A.K.**, Hansen, E.R., Dwyer, H.A., Harlow, D.B., Franklin, D. (2016). Differentiating for diversity: Using universal design for learning in computer science education. In *Proceedings of the 47th Technical Symposium on Computer Science Education (SIGCSE '16)*. Memphis, TE: ACM.
- Franklin, D., Dwyer, H.A., Hill, C., **Hansen, A.K.**, Harlow, D.B. (2016). Initialization in scratch: Seeking knowledge transfer. In *Proceedings of the 47th Technical Symposium on Computer Science Education (SIGCSE '16)*. Memphis, TE: ACM.
- Harlow, D.B., **Hansen, A.K.** (2015). Balancing collaborative and individual work: An example of maker education through mechatronics. In *Proceedings of FabLearn: Conference on Creativity and Fabrication in Education (FabLearn '15)*. Palo Alto, CA: ACM.
- Dwyer, H.A., Hill, C., **Hansen, A.K.**, Iveland, A., Franklin, D., Harlow, D.B. (2015). How students read block-based programs: Predictions, visual cues, and affordances. In *Proceedings of the 11th International Conference on Computer Education Research (ICER '15)*. Omaha, NE: ACM.
- Hansen, A.K.**, Dwyer, H.A., Hill, C., Iveland, A., Martinez, T.[‡], Harlow, D.B., Franklin, D. (2015). Interactive design by children: A construct map for programming. In *Proceedings of the 14th International Conference on Interaction Design and Children (IDC '15)*. Boston, MA: ACM.
- Franklin, D., Hill, C., Dwyer, H., Martinez, T.[‡], Iveland, A., **Killian, A.**, Harlow, D.B. (2015). Getting started in teaching and researching computer science in the elementary classroom. In *Proceedings of the 46th Technical Symposium on Computer Science Education (SIGCSE '15)*. Kansas City, MO: ACM.

CURRICULA

Duong, T., Telemeco, M., Dean, C., **Hansen, A.K.** (2021). Virtual Field Trips for 2nd Grade.

Franklin, D., Harlow, D.B., Dwyer, H., Hill, C., Iveland, A., **Hansen, A.K.** (2016). *Kids Engaged in Learning Programming and Computer Science (KELP-CS), Module 2: Game Design*. Retrieved online from <http://people.cs.uchicago.edu/~dmfranklin/kelpcs/educators/KELPCSMModule1and2.pdf>

Franklin, D., Harlow, D.B., Dwyer, H., Henken, J., Hill, C., Iveland, A., **Killian, A.** (2014). *Kids Engaged in Learning Programming and Computer Science (KELP-CS), Module 1: Digital Storytelling*. Retrieved online from <https://discover.cs.ucsb.edu/kelpcs/educators/KELPCSIntro.pdf>.

TECHNICAL REPORTS

Hansen, A.K. & Lenaburg, L.A. (2015). Enhanced support, training and experiences for engineering majors (ESTEEM): Annual evaluation report.

Hansen, A.K. & Lenaburg, L.A. (2015). Engineering Ethics Evaluation, Mechanical & Chemical Engineering Departments. Submitted to the National Science Foundation.

INVITED TALKS

Lambert, R. & **Hansen, A.K.** (2020, April). Exploring Universal Design for Learning in a Distance Learning Environment. Invited online consultancy session at the Science Community of Practice hosted by the California Partnership for Math + Science Education.

Hansen, A.K. (2019, November). Reimagining science teacher education: Creating expanded learning ecologies through community engagement and research-practice partnerships. Invited speaker for the AIMS Colloquium Series. Fresno, CA.

Hansen, A.K. (2019, July). Designing for *all* students to experience success in STEM education. Invited speaker at the summer meeting of the American Association of Physics Teachers (AAPT) Provo, UT.

Lambert, R. & **Hansen, A.K.** (2019, April). Rethinking disability in the context of science education. Invited keynote at the Science Community of Practices hosted by the California Partnership for Math + Science Education. Sacramento, CA.

Hansen, A.K. (2018, October). Looking closely: Using video analysis to investigate student learning in context. Workshop for undergraduate and graduate students enrolled in a mixed-methods research methodology course at Fresno State University.

Hansen, A.K. (2018, September). Tinkering with STEAM Education. Presented at the TEACH conference. Kremen School of Education and Human Development, Fresno State University.

Hansen, A.K. (2018, March). School Maker Faires. Talk for preservice elementary school teachers in the Teacher Education Program in the Gevirtz Graduate School of Education, UC Santa Barbara, CA.

Harlow, D.B., **Hansen, A.K.** (2016, July). From rich points to research questions: Building research questions

from observational data. Invited panel discussion at the *Physics Education Research Conference* (PERC '16). Sacramento, CA.

Hansen, A.K. (2015, March). Interviewing children. Workshop for student in the Gevirtz Graduate School of Education, UC Santa Barbara, CA.

Killian, A., Templeton, J. (2012). Fostering a growth mindset. Professional development workshop for middle school teachers of Partnerships to Uplift Communities (PUC) charter schools. Los Angeles, CA.

Killian, A. (2012). Increasing student engagement in the classroom. Professional development workshop for middle school teachers of Partnerships to Uplift Communities (PUC) charter schools. Los Angeles, CA.

Killian, A. (2011). Planning 101: Creating unit plans and year-long plans. Professional development workshop for science teachers of Teach for America, Los Angeles, CA.

CONFERENCE PRESENTATIONS

‡ = student co-author

Duong, T. ‡, **Hansen, A.K.** (2022, April). Virtual field trips during the COVID-19 pandemic: A pilot study evaluating second-grade STEM experiences. Paper presented at the annual meeting of the *American Educational Research Association* (AERA '22). San Diego, CA.

Duong, T. ‡, Dean, C. ‡, Romans, F. ‡, **Hansen, A.K.** (2022, April). Virtual field trips during the COVID-19 pandemic: Findings on second-grade student STEM attitudes. Oral talk given at the *Central California Research Symposium*. Virtual.

Sheetz, J. ‡, **Hansen, A.K.**, Lent, D.D. (2022, January). Investigating undergraduate student conceptions of biologists and the nature of their work. Poster presented at the annual meeting for the *Society of Integrative & Comparative Biology* (SICB '22). Phoenix, AZ.

Macias, M. ‡, Carpenter, S., **Hansen, A.K.**, Shackley, M. ‡, Stone, E.M., Arevalo, E. ‡, Maul, A., Bianchini, J.A. (2021, April). Preservice science teachers understanding of instruction for diverse learners: A focus on funds of knowledge. Paper presented at the annual meeting of the *American Educational Research Association* (AERA '21). Virtual.

Hansen, A.K., Whitenack, L., Connors, P., Lanier, H., Full, R. (2021, January). Biology beyond the classroom: Experiential learning through authentic research, design, and community engagement. Organized symposium at the annual meeting for the *Society of Integrative & Comparative Biology* (SICB '21). Virtual.

Lent, D. & **Hansen, A.K.** (2021, January). Making interdisciplinary learning continuous across education. Symposium presentation at the annual meeting for the *Society of Integrative & Comparative Biology* (SICB '21). Virtual.

Hernandez, T., Donnelly-Hermosillo, D., Person, E. & **Hansen, A.K.** (2021, January). Using zoos as a context to teach authentic research: reflections from first and second experience students taking introductory chemistry. Symposium presentation at the annual meeting for the *Society of Integrative & Comparative Biology* (SICB '21). Virtual.

Nation, J.K. & **Hansen, A.K.** (2021, January). Students' experiences in community STEM programs. Symposium presentation at the annual meeting for the *Society of Integrative & Comparative Biology* (SICB '21). Virtual.

- Ilyas, Z. ‡, Brar, N. ‡, Shin, J. ‡, **Hansen, A.K.**, Telemeco, R.S., Muller, U. (2021, January). How is COVID19 affecting scientific publishing – a study of a conference-proceedings journal. Poster presentation at the annual meeting for the *Society of Integrative & Comparative Biology* (SICB '21). Virtual.
- Hansen, A.K.**, Hall, T. ‡, Supancic, M. ‡ (2020, October). Expansive rooms for inquiry: Preservice teachers' experiences facilitating Maker Faire activities. *FabLearn: Conference on Creativity and Fabrication in Education* (FabLearn '20). Virtual.
- Hansen, A.K.**, Muller, A., Camara, Q. ‡, Kaur, P. ‡, Martinez, A. ‡ (2020, April). Connecting STEM learning across boundaries: Secondary teachers' experiences facilitating field trips in Central California. Paper accepted for presentation annual meeting of the *American Educational Research Association* (AERA). Event cancelled due to Covid-19 pandemic.
- Carpenter, S., Macias, M. ‡, Arevalo, E. ‡, **Hansen, A.K.**, Stone, E.M., Bianchini, J.A. (2020, April). Preservice science teachers understanding of instruction for diverse learners: A focus on cognitively demanding work. Paper accepted for presentation annual meeting of the *American Educational Research Association* (AERA). Event cancelled due to Covid-19 pandemic.
- Hansen, A.K.**, Camara, Q. ‡, Kaur, P. ‡, Martinez, A. ‡ (2020, March). A Needs Assessment of Central California Science Teachers: Professional Development Challenges & Opportunities. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST). Virtual.
- Carpenter, S., Macias, M. ‡, Arevalo, E. ‡, **Hansen, A.K.**, Stone, E.M., Bianchini, J.A. (2020, March). Preservice Science Teachers' Understanding of Instruction for Diverse Learners: A Focus on Funds of Knowledge. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST '20). Virtual.
- Peters, K. ‡, Langdon, T. ‡, Lent, D., **Hansen, A.K.** (2020, January). Fabricating biology outreach materials. Poster presented at the 2020 annual meeting for the *Society of Integrative & Comparative Biology* (SICB '20). Austin, TX.
- Hansen, A.K.**, Lent, D., Muller, U. (2020, January). How bio-inspiration teaches us: Digital fabrication and modeling in STEM education. Paper presented at the 2020 annual meeting for the *Society of Integrative & Comparative Biology* (SICB '20). Austin, TX.
- Hansen, A.K.**, Flores, D. ‡, Kaur, P. ‡ (2019, October). Remixing Slime with NGSS. Professional Development workshop for teachers at the annual meeting of the *California Association of Science Education* (CASE '19). San Jose, CA.
- Hansen, A.K.**, Guan, J. ‡, Hall, T. ‡, & Supancic, M. ‡ (2019, April). How design and facilitation of a Maker Faire activity contributes to differences in children's learning. Paper presented at the annual meeting of the *American Educational Research Association* (AERA '19). Toronto, Canada.
- Hansen, A.K.**, Hall, T. ‡, & Supancic, M. ‡ (2019, April). Characterizing questioning at an informal science event: A case study of preservice teachers. Paper presented at the annual meeting of the *American Educational Research Association* (AERA '19). Toronto, Canada.
- Carpenter, S., **Hansen, A.K.**, Macias, M., Arevalo, E., Stone, E.M., Bianchini, J. (2019, March). Changes in preservice secondary science teachers' understanding of principles of equitable reform-based science instruction. Presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST

'19). Baltimore, MD.

Weintrop, D., **Hansen, A.K.**, Harlow, D.B., Franklin, D. (2018, April). Bringing computer science into elementary classrooms. Presented at the annual meeting of the *American Educational Research Association* (AERA '18). New York, NY.

Hansen, A.K., Carpenter, S., Bianchini, J., Stone, E., Forbes, C. (2018, March). Preparing reform-minded science and mathematics teachers: An empirical investigation across six teacher education programs. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST '18). Atlanta, GA.

Moon, S., **Hansen, A.K.**, Bushong, L., Carpenter, S., Bianchini, J. (2018, March). Examining the effects of teacher education on preservice science and mathematics teacher readiness. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST '18). Atlanta, GA.

Gribble, J., **Hansen, A.K.**, Harlow, D.B., Franklin, D. (2017, June). Cracking the code: The impact of computer coding on the interactions of a child with autism. Paper presented at the *International Conference on Interaction Design and Children* (IDC '17). Palo Alto, CA.

Hansen, A.K., Harlow, D.B. (2017, April). Understanding engineering design in the context of making: Teacher and student perceptions of design thinking in a classroom maker activity. Paper presented at the annual meeting of the *American Educational Research Association* (AERA '17). San Antonio, TX.

Hansen, A.K., Hansen, E., Iveland, A., Gribble, J. ‡, Moran, A., Harlow, D.B., Franklin, D. (2017, April). Understanding the challenges and potential of computer science education for elementary school students with disabilities. Paper presented at the annual meeting of the *American Educational Research Association* (AERA '17). San Antonio, TX.

Hansen, A.K., Moon, S., Iveland, A., Carpenter, S., Harlow, D.B., Bianchini, J. (2017, April). Understanding the practices of science and engineering: Perceptions of teachers across the learning-to-teach continuum. Paper presented at the annual meeting of the *National Association for Research in Science Teaching* (NARST '17). San Antonio, TX.

O'Brien, S., **Hansen, A.K.**, Harlow, D.B. (2016, October). Educating teachers for the maker movement: Pre-service teachers' experiences facilitating maker activities. Paper presented at *FabLearn: Conference on Creativity and Fabrication in Education* (FabLearn '16). Palo Alto, CA.

Hansen, A.K., Harlow, D.B. (2016, July). Making and breaking bones: Learning physics through engineering design. Paper presented at the annual meeting of the *Physics Education Research Conference* (PERC '16). Sacramento, CA.

Hansen, A.K., Iveland, A., Carlin, C. ‡, Franklin, D., Harlow, D.B. (2016, June). User-centered design in block based programming: Developmental and pedagogical considerations for children. Paper presented at the *International Conference on Interaction Design and Children* (IDC '16). Manchester, UK.

Hansen, A.K., Dwyer, H.A., Harlow, D.B., Franklin, D. (2016, April). What is a computer scientist? Developing the draw-a-computer-scientist test for elementary school students. Paper presented at the annual meeting of the *American Educational Research Association* (AERA'16). Washington, DC.

Hansen, A.K., McBeath, J.K., Harlow, D.B. (2016, April). Making meaning of making: Using CHAT to

understand digital fabrication in the classroom. Paper presented at the annual meeting of the *American Educational Research Association* (AERA'16). Washington, DC.

Hansen, A.K., Hansen, E.R., Dwyer, H.A., Harlow, D.B., Franklin, D. (2016, March). Differentiating for diversity: Using universal design for learning in computer science education. Paper presented at the *Technical Symposium on Computer Science Education* (SIGCSE '16). Memphis, TE.

Franklin, D., Dwyer, H.A., Hill, C., **Hansen, A.K.**, Harlow, D.B. (2016, March). Initialization in scratch: Seeking knowledge transfer. Paper presented at the *Technical Symposium on Computer Science Education* (SIGCSE '16). Memphis, TE.

Hansen, A.K., Harlow, D.B. (2016, January). Creating equitable and accessible computer science experiences for children. Paper presented at the *American Educational Research Association-UC Santa Barbara STEM Education Conference*. Santa Barbara, CA.

Harlow, D.B., **Hansen, A.K.** (2015, September). Balancing collaborative and individual work: An example of maker education through mechatronics. Paper presented at *FabLearn: Conference on Creativity and Fabrication in Education* (FabLearn '15). Palo Alto, CA.

Hansen, A.K., Dwyer, H.A., Hill, C., Iveland, A., Martinez, T. ‡, Harlow, D.B., Franklin, D. (2015, June). Interactive design by children: A construct map for programming. Paper presented at the *International Conference on Interaction Design and Children* (IDC '16). Boston, MA.

Dwyer, H.A., **Hansen, A.K.**, Iveland, A., Hill, C., Franklin, D., Harlow, D.B. (2015, April). Programming languages and discourse: Investigating the linguistic context in learning computer science during elementary school. Paper presented at the annual meeting of the *American Educational Research Association* (AERA'15). Chicago, IL.

SERVICE

COMMUNITY

California's Central Valley STEM Network Steering Committee, Member, 2019-present

Fresno Discovery Center, Executive Board Member, 2019-2022

Science events at local schools, Volunteer, 2013-present

Goleta Boys and Girls Club, Volunteer, 2015-2016

Teach for America, Corps Member, 2010-2012

Reading is Fundamental, Volunteer, 2008-2010

THINK Together, Volunteer, 2009-2010

UNIVERSITY

College Curriculum Committee, College of Science & Mathematics, Fresno State, 2022-present

Department Curriculum Committee, Department of Biology, Fresno State, 2022-present

Advisor, Bulldogs4Kids Club, Fresno State, 2022-present

IRB Committee, Department of Biology, Fresno State, 2020-present

Assessment Committee, Chair, Department of Biology, Fresno State, 2020-present

Natural Science Committee, Chair, College of Science & Mathematics, Fresno State, 2020-present

PR & Outreach Committee, Member, Department of Biology, Fresno State, 2019-present

Master's Thesis Committees, Departments of Biology and Chemistry, Fresno State, 2018-present
Library Subcommittee, Fresno State, 2021- 2022
Advisor, Natural Science Club, Fresno State, 2019-2022
Retreat Planning Committee, Member, Department of Biology, Fresno State, 2018-2022
Assessment Committee, Member, Department of Biology, Fresno State, 2018-2022
Leadership team, School Maker Faire, UC Santa Barbara, 2015-18
Mentor for incoming graduate students, UC Santa Barbara, 2015-18
Vice President, Graduate Student Association of Education, UC Santa Barbara, 2015-16
Graduate Student Representative, Job Search Committee, UC Santa Barbara, 2016
Panelist, Roundtable for incoming graduate students, UC Santa Barbara, 2014-16

PROFESSIONAL ORGANIZATIONS

Society of Integrative and Comparative Biology (SICB), Member, 2019-present
Education Council Member, 2022-present
National Association for Research in Science Teaching (NARST), Member, 2016-present
Strand 13 Co-Coordinator, 2018-2020
National Science Teaching Association (NSTA), Member, 2015-present
Science and Children, Reviewer, 2016-present
Connected Science Learning, Reviewer, 2019- present
California Association for Science Education (CASE), Member, 2017- present
American Educational Research Association (AERA), Member, Reviewer & Discussant, 2014-present
Division C: Curriculum & Instruction
Division K: Teacher Education

HONORS, AWARDS & FUNDING

Total Funding: \$673,329

Advancing Informal Science Learning (\$502,509), National Science Foundation, 2022-2026
Research, Scholarly & Creative Activities Award (\$5000), Fresno State, 2021-22
Conference Symposium Grant (\$21,5000), National Science Foundation, 2020-22
Faculty Professional Development Award (\$1200), Fresno State, 2019-20
Biology Departmental Travel Grant (\$1000), Fresno State, 2018-19
Faculty Professional Development Award (\$1200), Fresno State, 2018-19
Faculty Support Grant (\$1,500), Fresno State, 2018-19
Excellence in Research Award (\$1,500), UC Santa Barbara, 2017-18
Dennis R. Washington Fellowship (\$60,000), Horatio Alger Association, 2016-18
Dissertation Fellowship (\$12,500), UC Santa Barbara, 2017-18
Conference Travel Grant Awards (\$3,600), UC Santa Barbara, 2014-17
Block Grant Award (\$12,000), UC Santa Barbara, 2014-16
Americorps Grant (\$10,000), Teach for America, 2010-12

Order of Omega Honor Society, UC Irvine, 2010

Dean's Honor List, UC Irvine, 2007-09

Chancellor's Excellence Scholarship (\$40,000), UC Irvine, 2006-08