DAVID WEINTROP

CURRICULUM VITAE

I. Personal Information

I.A. Contact Information

Name: David Weintrop
UID: 115693920
Office: 2226H Benjamin Building
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College Park, MD 20742
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I.B. Academic Appointments at the University of Maryland

Dean's Impact Professor 2023 - present
Associate Professor 2023 - present
Assistant Professor 2017 - 2023
Department of Teaching & Learning, Policy & Leadership
College of Education
College of Information

Affiliate Associate Professor 2023 - present
Affiliate Assistant Professor 2022 - 2023
Department of Computer Science
College of Computer, Mathematical, & Natural Sciences

I.D. Other Employment

Software Developer. Backstop Solutions 2008 - 2010
Software Developer. Incisent Technologies 2006 - 2008

I.E. Educational Background

Ph.D., *Learning Sciences* 2016
School of Education and Social Policy, Northwestern University

B.S. *Computer Science* 2005
College of Literature, Science, and the Arts, University of Michigan

I.F. Continuing Education

Postdoctoral Researcher, University of Chicago *2017*

I.G. Professional Certifications, Licenses, and Memberships

1. *American Education Researcher Association*
2. *Association of Computing Machinery*
3. *International Society of the Learning Sciences*

II. Research, Scholarly, Creative and/or Professional Activities

II.A. Books

II.A.2. Books Edited

1. **Weintrop, D.**, Rutstein, D., Bienkowski, M. & McGee, S. (2024). Assessing Computational Thinking: An Overview of the Field. Routledge.

II.B. Chapters

II.B.1. Books

1. **Weintrop, D.** (2021). The role of block-based programming in computer science education. Understanding Computing Education, Volume 1. Raspberry Pi Foundation.

2. **Weintrop, D.**, Rutstein, D., Bienkowski, M., & McGee, S. (2021). Assessment of Computational Thinking. In Yadav, A. & Berthelsen, U (Eds), Computational Thinking in Compulsory Education: A Pedagogical Perspective. Routledge.

3. **Weintrop, D.**, & Grover, S. (2020). JavaScript, Python, Scratch, or Something Else? Navigating the Bustling World of Introductory Programming Languages. In S. Grover (Ed.), Computer Science in K-12: An A-To-Z Handbook on Teaching Programming (pp. 99–112). Edfinity.

4. **Weintrop, D**. & Wilensky, U. (2014). Designing for Computational Expression: Four Principles for the Design of Learning Environments Towards Computational Literacy. In D. J. Loveless, B. Griffith, M. Berci, E. Ortlieb, P. Sullivan (Eds.), Academic Knowledge Construction and Multimodal Curriculum Development. Hershey, PA: IGI Global.

II.C. Refereed Journals

II.C.1. Refereed Journal Articles

1. **Weintrop, D.**, Israel-Fishelson, R. °, & Gardner-McCune. (2025). Emerging Computational and Digital Literacies in K-12 Education. International Journal of Child-Computer Interaction.

2. Asbell-Clarke, J., Dahlstrom-Hakki, I., Voiklis, J., Attaway, B., Barchas-Lichtenstein, J., Edwards, T., Bardar, E., Robillard, T., Paulson, D., Grover, S. , Israel, M., Ke, F. & **Weintrop, D**. (2024) Including Neurodiversity in Computational Thinking. Frontiers in Education.

3. Israel-Fishelson, R. °, Moon, P.*, Tabak, R.*, & **Weintrop, D.** (2024). Understanding the Data in K-12 Data Science. Harvard Data Science Review, 6(2).

4. **Weintrop, D**. & Israel-Fishelson, R.° (2024). Bringing Students' Lives Into Data Science Classrooms. Harvard Data Science Review, 6(3).

5. Shokeen, E.*, Pellicone, A. J. °, **Weintrop, D.**, Ketelhut, D. J., Cukier, M., Plane, J. D., & Williams-Pierce, C. (2024). Children's approaches to solving puzzles in videogames. International Journal of Child-Computer Interaction, 100635.

6. Israel-Fishelson, R. °, Moon, P. F.*, Tabak, R.*, & **Weintrop, D.** (2023). Preparing students to meet their data: An evaluation of K-12 data science tools. Behaviour & Information Technology.

7. Moon, P.*, Himmelsbach, J.*, **Weintrop, D**. & Walkoe, J. (2023) Developing Preservice Teachers' Intuitions about Computational Thinking in a Mathematics and Science Methods course. *Journal of Pedagogical Research*, 7(2), 5–10.

8. Koren, N.*, **Weintrop, D.**, & Subramaniam, M. (2023). Using design-based implementation research approach to create computational thinking assessment

tools for youth programs in public libraries. *Library & Information Science Research*, 45(2), 101240.
ALISE/ProQuest Methodology Paper Award

9. Shokeen, E.*, **Weintrop, D.**, Pellicone, A.°, Moon, P. F.*, Ketelhut, D. J., Plane, J. D., & Cukier, M. (2023). Defining Perplexity and Reflective Thinking in a Game-based Learning Environment. *Information and Learning Sciences*, 124(3/4), 110–127.

10. Ritschel, N., Sawant, A. A., **Weintrop, D.**, Holmes, R., Bacchelli, A., Garcia, R., K R, C., Mandal, A., Francis, P., & Shepherd, D. C. (2023). Training industrial end-user programmers with interactive tutorials. *Software: Practice and Experience*, 53(3), 729–747.

11. **Weintrop, D.**, Subramaniam, M., Morehouse, S.*, & Koren, N*. (2022). The State of Computational Thinking in Libraries. *Technology, Knowledge, and Learning.*

12. Pellicone, A.°, **Weintrop, D.**, Ketelhut, D.J., Shokeen, E.*, Cukier, M., Plane, J., & Rahimian, F. (2022). Playing Aloud: Leveraging Game Commentary Culture for Playtesting. *International Journal of Gaming and Computer-Mediated Simulations*, 14(1), 1–16.

13. Subramaniam, M., Koren, N.*, Morehouse, S.*, & **Weintrop, D**. (2022). Capturing computational thinking in public libraries: An examination of assessment strategies, audience, and mindset. *Journal of Librarianship and Information Science*.

14. Kao, Y., Matlen, B., & **Weintrop, D**. (2022). From One Language to the Next: Applications of Analogical Transfer for Programming Education. *ACM Transactions on Computing Education*, 22(4), 1–21.

15. Michaelis, J. E. & **Weintrop, D**. (2022). Interest Development Theory in Computing Education: A Framework and Toolkit for Researchers and Designers. *ACM Transactions on Computing Education*. 22(4), 1–27.

16. Coenraad, M.*, Palmer, J., Eatinger, D., **Weintrop, D.**, & Franklin, D. (2022). Using participatory design to integrate stakeholder voices in the creation of a culturally relevant computing curriculum. *International Journal of Child-Computer Interaction*, 31, 100353.

17. Lin, Y.*, & **Weintrop, D**. (2021). The Landscape of Block-based Programming: Characteristics of block-based environments and how they support the transition to text-based programming. *Journal of Computer Languages*, 67, 101075.

18. Coenraad, M.*, **Weintrop, D.**, Eatinger, D., Palmer, J., & Franklin, D. (2021). Identifying Youths' Spheres of Influence through Participatory Design. *Designs for Learning*, 13(1), 20–34.

19. **Weintrop, D.**, Walkoe, J., Walton, M.*, Bih, J.*, Moon, P. F.*, Elby, A., Bennett, B.#, Kantzer, B.# (2021). Sphero.Math: A Computational Thinking-Enhanced Fourth

* Denotes student author
° Denotes postdoctoral researcher author
# Denotes K-12 teacher or school district author

Grade Mathematics Curriculum. *Computational Thinking in PreK-5: Empirical Evidence for Integration and Future Directions.* 39-46.

20. Tissenbaum, M., **Weintrop, D.**, Holbert, N., & Clegg, T. (2021). The Case for Alternative Endpoints in Computing Education. *British Journal of Educational Technology*, 52(3), 1164–1177.

21. **Weintrop, D.**, Rutstein, D., Bienkowski, M., & McGee, S. (2021). Assessing Computational Thinking: An Overview of the Field. *Computer Science Education*. 31(2), 113-116.

22. **Weintrop, D.**, Morehouse, S.* & Subramaniam, M. (2021). Assessing Computational Thinking in Libraries. *Computer Science Education*. 31(2), 290-311.

23. Coenraad, M.*, Hopcraft, C.*, Jozefowicz, J.*, Franklin, D., Palmer, J. & **Weintrop, D.** (2020). Helping Teachers Make Equitable Decisions: Effects of the TEC Rubric on Teachers' Computing Curriculum Evaluation. *Computer Science Education*, 31(3), 400-429.

24. Coenraad, M.*, Pellicone, A.°, Ketelhut, D. J., Plane, J., Cukier, M. & **Weintrop, D.** (2020). Experiencing Cybersecurity One Game at a Time: A Systematic Review of Cybersecurity Digital Games. *Simulation & Gaming*, 51(5), 586–611.

25. **Weintrop, D.**, Coenraad, M.*, Palmer, J., & Franklin, D. (2019). The Teacher Accessibility, Equity, and Content (TEC) Rubric for Evaluating Computing Curricula. *ACM Transactions on Computing Education*, 20(1), 1–30.

26. **Weintrop, D.**, & Wilensky, U. (2019). Transitioning from introductory block-based and text-based environments to professional programming languages in high school computer science classrooms. *Computers & Education*, 142.

27. **Weintrop, D.** (2019). Block-based Programming in Computer Science Education. *Communications of the ACM*, 62(8), 22–25.

28. **Weintrop, D.**, Bau, D., & Wilensky, U. (2019). The cloud is the limit: A case study of programming on the web, with the web. *International Journal of Child-Computer Interaction*, 20, 1–8.

29. **Weintrop, D.** & Wilensky, U. (2018). How Block-based, Text-based, and Hybrid Block/Text Modalities Shape Novice Programming Practices. *International Journal of Child-Computer Interaction*, 17, 83–92.

30. Pei, C.*, **Weintrop, D.** & Wilensky, U. (2018). Cultivating Computational Thinking Practices and Mathematical Habits of Mind in Lattice Land. *Mathematical Thinking and Learning*, 20(1), 75–89.

31. **Weintrop, D.** & Wilensky, U. (2017). Comparing Blocks-based and Text-based Programming in High School Computer Science Classrooms. *Transactions on Computing Education*, 18(1), 1-25.

32. **Weintrop, D.** & Wilensky, U. (2017). How Block-based Languages Support Novices: A Framework for Categorizing Block-based Affordances. *Journal of Visual Languages and Sentient Systems*, 3, 92–100.

33. Brady, C., Orton, K., **Weintrop, D.**, Anton, G., Rodriguez, S. & Wilensky, U. (2016). All Roads Lead to Computing: Making, Participatory Simulations, and Social

Computing as pathways to Computer Science. *IEEE Transactions on Education*, 60(99), 1-8.

34. **Weintrop, D.** & Wilensky, U. (2016). Playing by programming: Making gameplay a programming activity. *Educational Technology*, 56(3), 36–41.

35. **Weintrop, D.**, Holbert, N., Wilensky, U. & Horn, M. S. (2016). Computational thinking in constructionist video games. *International Journal of Game-based Learning*, 6(1), 1–17.

36. **Weintrop, D.**, Beheshti, E., Horn, M., Orton, K., Jona, K., Trouille, L., & Wilensky, U. (2016). Defining Computational Thinking for Mathematics and Science Classrooms. *Journal of Science Education and Technology*, 25(1), 127–147.

37. **Weintrop, D.** & Wilensky, U. (2014). Situating programming abstractions in a program-to-play game. *Informatics in Education*, 13(2), 307-321.

II.D. Published Conference Proceedings

II.D.1. Refereed Conference Proceedings

In the field of Computer Science and Computer Science Education, archival conference proceedings such as the Association for Computing Machinery's CHI, IDC, ICER, and SIGCSE are top publication venues. These are peer-reviewed publications with low acceptance rates (usually around 30%). In these fields, proceedings publications are considered on par with publications in a journal and rival top journals in their selectivity, citations, and influence. In my listing of refereed conference proceedings below, acceptance rates for the conference are shown in [ ]'s where available.

1. Israel-Fishelson, R. °, Moon, P. F. *, Pauw, D., & **Weintrop, D**. (2024). Using Participatory Design to Gain Insight into How Students Make Sense of Data in Their Lives. Proceedings of the Symposium on Learning, Design and Technology, 85–94.

2. Israel-Fishelson, R.°, Moon, P. F.*, & **Weintrop, D**. (2024) Exploring Interest-Driven Data Science Through Participatory Design. Paper to be presented at the 2024 International Society of the Learning Sciences Annual Meeting. Buffalo, NY.

3. Israel-Fishelson, R. °, Moon, P. F.*, & **Weintrop, D**. (2024). Interest-Driven Data Science Curriculum for High School Students: Empirical Evidence from a Pilot Study. Proceedings of the 23rd Annual ACM Interaction Design and Children Conference, 908–912.

4. Lin, Y.*, **Weintrop, D.** & McKenna, J. (2024). Shift mode: How Prior Experiences Shapes How Learners Program in a Hybrid Programming Environments. Paper to be presented at the 2024 International Society of the Learning Sciences Annual Meeting. Buffalo, NY.

5. Lin, Y.*, **Weintrop, D.** & McKenna, J. (2024). Designing a Progression of Programming Environments to Support K-12 Learners as they Advance. In J. Cohen & G. Solano (Eds.), Proceedings of Society for Information Technology & Teacher Education International Conference (pp. 116-123). Las Vegas, Nevada, United States: Association for the Advancement of Computing in Education (AACE).

6. Kramarczuk, K.*, Avery, C., Cardenas Guzman, M.* , Shijo, N.*, Atchison, K., **Weintrop, D.**, Plane, J., & Khan, A*. (2024). A Longitudinal Study of the Post-Secondary Experiences of Women of Color in Computing. Paper to be presented

at at *Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT) 2024*.

7. Coenraad, M., & **Weintrop, D.** (2024) Talking Techquity: Teaching the Equity and Social Justice Impacts of Computing in Middle School Classrooms. Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1, 227–233. [33%]

8. Kramarczuk, K.*, Atchison, K., Hilliard, M.*, Plane, J.*, Bond, S. Rudy, C. & **Weintrop, D**. (2024) Micro-internships and Career Focused Programs as Mechanisms for Diversifying Computing. Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1, 694–700. [33%]

9. Tran, M.*, Killen, H.*, Palmer, J., **Weintrop, D**. & Franklin, D. (2024). Harmonizing Scratch Encore: Scaffolding K-8 Teachers in Customizing Culturally Responsive Computing Materials. Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1, 1335–1341. [33%]

10. Drozda, Z., Walker, J. T., Fisler, K., & **Weintrop, D.** (2024). Computing in Data Science or Data in Computer Science? Exploring the Relationship between Data Science and Computer Science in K-12 Education. Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 2, 1527–1528. [33%]

11. Kazemitabaar, M.*, Hou, X.*, Henley, A.*, Ericson, B., **Weintrop, D.** & Grossman, T. (2023). How Novices Use LLM-based Code Generators to Solve CS1 Coding Tasks in a Self-Paced Learning Environment. Proceedings of the 23rd Koli Calling International Conference on Computing Education Research, 1–12.

12. Lin, Y.*, **Weintrop, D.**, & McKenna, J. (2023). Coder and Coder Cards: A Novel Tangible Programming Approach to Support Young Programmers. 2023 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), 25–30.
Best Short Paper Award

13. Moon, P. F.*, Israel-Fishelson, R.°, Tabak, R. E.* & **Weintrop, D**. (2023) The Tools Being Used to Introduce Youth to Data Science. Proceedings of the 22nd Annual ACM Interaction Design and Children Conference, 150–159. [29%]

14. Israel-Fishelson, R.°, Moon, P. F.*, Tabak, R. E.* & **Weintrop, D**. (2023) Preparing K-12 Students to Meet their Data: Analyzing the Tools and Environments used in Introductory Data Science Contexts. *Proceedings of the 2023 Symposium on Learning, Design and Technology, 29–42*.

15. Lin, Y.*, **Weintrop, D.**, & McKenna, J. (2023) Switch Mode: Building a middle ground between Block-based and Text-based programming. *Proceedings of the 2023 Symposium on Learning, Design and Technology*, 114–118.

16. Israel-Fishelson, R.°, Moon, P.*, Tabak, R.*, & **Weintrop, D**. (2023) What Data is in K-12 Data Science? An Analytic Approach to Understanding the Data Used in K-12 Data Science Courses. Poster presented at the International Society of the Learning Sciences Annual Conference 2023. Montreal, Canada.

17. Kramarczuk, K.*, Khan, A.8, Shijo, N.*, Plane, J., Atchison, K., **Weintrop, D**. & Avery, C. (2023) A Longitudinal Study of the Post-Secondary Experiences of Women of Color in Computing. Paper presented at *Research in Equity and*

Sustained Participation in Engineering, Computing, and Technology (RESPECT) 2023.

18. Kazemitabaar, M.*, Chow, J.*, Ka To Ma, C.*, Ericson, B., **Weintrop, D**. & Grossman, T. (2023) Studying the Effect of AI Code Generators on Supporting Learners in Introductory Programming. Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems. Hamburg, Germany, 1–23. [27.6%]

19. Kazemitabaar, M. *, Chyhir, V.*, Weintrop, D. & Grossman, T. (2023). How Structured Editors Shape Novice Errors When Transitioning from Blocks to Text. *Proceedings of the 54th ACM Technical Symposium on Computer Science Education* V. 1, 556–562.

20. Kramarczuk, K. *, Weintrop, D., Plane, J., Atchison, K. & Avery, C. (2023). CompSciConnect: A Multi-Year Summer Program to Broaden Participation in Computing. *Proceedings of the 54th ACM Technical Symposium on Computer Science Education* V. 1, 319–325.

21. Tsan, J. °, Weintrop, D., Eatinger, D., & Franklin, D. (2023). Learner Ideas and Interests Expressed in Open-ended Projects in a Middle School Computer Science Curriculum. *Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 1*, 820–826.

22. Lin, Y.*, **Weintrop, D**. & McKenna, J. (2023). Switch Mode: A Visual Programming Approach for Transitioning from Block-based to Text-based Programming. In Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2, 1262.

23. Brown, N., **Weintrop, D**., Ojha, V* & Isenegger, K.* (2023). Registered Reports and Preregistration: A new way to conduct research. Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2, 1252.

24. Pellicone, A.°, Shokeen, E.*, Moon, P. F.*, **Weintrop, D.**, Ketelhut D. J., Plane, J., and Cukier, M. (2022) "It Just Felt More Like a Pyramid" - Narrative and Concept in Game-based Learning Puzzles. Proceedings of Meaningful Play 2022. Meaningful Play, East Lansing, Michigan.

25. Pellicone, A.°, Ketelhut, D. J., Shokeen, E.*, **Weintrop, D.**, Cukier, M., & Plane, J. (2022) Designing a Game to Promote Equity in Cybersecurity. Proceedings of the 2022 European Conference on Game-Based Learning. ECGBL 2022, Lisbon, Portugal.

26. Gonzalez-Maldonado, D.*, Pugnali, A.*, Tsan, J.°, Eatinger, D. Franklin, D., & **Weintrop, D**. Investigating the Use of Planning Sheets in Young Learners' Open-Ended Scratch Projects. (2022). *Proceedings of the 2022 ACM Conference on International Computing Education Research*, 247-263. [14%]

27. Gonzalez-Maldonado, D.*, Tsan, J.°, Eatinger, D., **Weintrop, D.**, & Franklin, D. Comparison of CS Middle-School Instruction during Pre-Pandemic, Early-Pandemic and Mid-Pandemic School Years. (2022). *Proceedings of the 2022 ACM Conference on International Computing Education Research,* 282-293. [14%]

28. Kazemitabaar, M.*, Chyhir, V.*, **Weintrop, D.**, & Grossman, T. (2022). CodeStruct: Design and Evaluation of an Intermediary Programming Environment for Novices to Transition from Scratch to Python. *Proceedings of*

the 21st ACM International Conference on Interaction Design and Children, 261-273. Braga, Portugal.

29. Shokeen E.*, Pellicone, A.°, **Weintrop, D**., Moon P. F.*, Cukier M., Ketelhut D. J., Plane J. (2022). "The Game was Designed to Learn to Think" – Player Perceptions of Learning in an Educational Game. Proceedings of the 2nd Annual Conference of the International Society of the Learning Sciences (ISLS), 1081-1084.

30. Tsan, J.°, **Weintrop, D.**, & Franklin, D. (2022). An Analysis of Middle Grade Teachers' Debugging Pedagogical Content Knowledge. *In Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, 533–539. [29%]

31. Tsan, J.°, Eatinger, D., Pugnali, A.*, Gonzalez Maldonado, D.*, Franklin, D., & **Weintrop, D**. (2022). Scaffolding Young Learners' Open-Ended Programming Projects with Planning Documents. *In Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, 372–378. [29%]

32. Tsan, J.°, Coenraad, M. *, Crenshaw, Z.*, Palmer, J., Eatinger, D., Beck, K.#, **Weintrop, D.** & Franklin, D. (2022). Reimagining Professional Development for K-8 CS Teachers: Evaluating a Virtual, Diffuse Model. *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education*, 530–536. [31%]

33. **Weintrop, D.** (2022). iSchools as Venues for Expanding the K-12 Computer Science Teacher Pipeline. *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education*, 397–403. [31%]

34. Kao, Y., & **Weintrop, D**. (2022). Multilingual CS Education Pathways: Implications for Vertically-Scaled Assessment. *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education*, 64–70. [31%]

35. Bih, J.*, **Weintrop, D.,** Moon, P. F.*, & Williams-Pierce, C. (2021) Computational Bodies: Grounding Computational Thinking Practices in Embodied Gesture. Paper presented at *the Annual Meeting of the International Society for the Learning Sciences*, Bochum, Germany. [33%]

36. Bih, J.*, **Weintrop, D.,** Moon, P. F.*, & Elby, A. (2021) Thinking through Representation: Interpreting Representational Fluency Across Contexts in Computational Thinking Enhanced Activities. *Proceedings of the Annual Meeting of the International Society for the Learning Sciences*, Bochum, Germany.

37. Shokeen, E.*, Pellicone, A.°, **Weintrop, D.**, Ketelhut, D.J., Williams-Pierce, C., Plane, J., Cukier, M. & Rahimian, F. (2021) An Iterative Design Cycle: Using Productive and Unproductive Frustration to Guide Re-Design. *Proceedings of the Annual Meeting of the International Society for the Learning Sciences*, Bochum, Germany.

38. Coenraad, M.*, Palmer, J., **Weintrop, D.**, Eatinger, D., Crenshaw, Z.*, Pham, H.*, & Franklin, D. (2021). The Effects of Providing Starter Projects in Open-Ended Scratch Activities. *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education*, 38–44. [34%]

39. Coenraad, M.*, Bih, J.* & **Weintrop, D.** (2021). Gusanos y Espheros: Computing with Youth in Rural El Salvador. *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education*, 404–410. [34%]

40. Shokeen, E.*, Pellicone, A.°, **Weintrop, D.**, Jass Ketelhut, D., Williams-Pierce, C., Plane, J. D., & Cukier, M. (2020). Designing Failure and Feedback within Puzzles. Extended Abstracts of *the 2020 Annual Symposium on Computer-Human Interaction in Play*, 370–374. [29%]

41. Franklin, D., Coenraad, M.*, Palmer, J., Eatinger, D., Zipp, A.*, Anaya, M.*, White, M.*, Pham, H.*, Gökdemir, O.*, & **Weintrop, D.** (2020). An Analysis of Use-Modify-Create Pedagogical Approach's Success in Balancing Structure and Student Agency. *Proceedings of the 2020 ACM Conference on International Computing Education Research*, 14–24. [23%]

42. Bih, J.*, **Weintrop, D.,** Walton, M.*, Elby, A., & Walkoe, J. (2020) Mutually Supportive Mathematics and Computational Thinking in a Fourth Grade Classroom. In Gresalfi, M. and Horn, I. S. (Eds.), The Interdisciplinarity of the Learning Sciences, *Proceedings of the 14th International Conference of the Learning Sciences* (ICLS) 2020. Nashville, TN: International Society of the Learning Sciences. pp. 1389 – 1396. [38%]

43. Walton, M.*, Walkoe, J., Elby, A., Bih, J.* & **Weintrop, D**. (2020) Teachers' Conceptualizations of Computational and Mathematical Thinking. In Gresalfi, M. and Horn, I. S. (Eds.), The Interdisciplinarity of the Learning Sciences, *Proceedings of the 14th International Conference of the Learning Sciences (ICLS) 2020*. Nashville, TN: International Society of the Learning Sciences. pp. 2053 – 2060. [38%]

44. Kafai, Y. B., Biswas, G., Hutchins, N., Snyder, C., Brennan, K., Haduoan, P., DesPortes, K., Fong, M., Flood, V.J., Walker-van Aalst, O., DeLiema, D., Fields, D. A., Gresalfi, M., Brady, C., Steinberg, S., Knowe, M., Franklin, D., Coenraad, M.*, **Weintrop, D.**, Eatinger, D., Palmer, J., Wilkerson, M., Roberto, C., Bulalacao, N. M., Danish, J. (2020). Turning bugs into learning opportunities: Understanding debugging processes, perspectives, and pedagogies. In M. Gresalfi, M. & I. S. Horn (Eds.), The Interdisciplinarity of the Learning Sciences, *Proceedings of the 14th International Conference of the Learning Sciences (ICLS) 2020*, Nashville, TN: International Society of the Learning Sciences, pp. 374-381. [38%]

45. **Weintrop, D.**, Woong Choi, G, Maltese, A., Tissenbaum, M., Bih, J.*, Walton, M.*, Walkoe, J., Scott, J., Ju Jung, Y., Zimmerman, H., DeLiema, D., Dahn, M., Hyeon Kim, S., Copeland, A., Yang, J., Simpson, A., Know, P., Kim, J., Chan, M., Holbert, N., Flynn, L., Kwon, K., Ottenbreit-Leftwich, A., Brush, T., & Blikstein, P. (2020) What Does Computer Science and Maker Education Look Like in 2030? In Gresalfi, M. and Horn, I. S. (Eds.), The Interdisciplinarity of the Learning Sciences, *Proceedings of the 14th International Conference of the Learning Sciences (ICLS) 2020*. pp. Nashville, TN: International Society of the Learning Sciences. pp. 1519 – 1524. [38%]

46. Bih, J.*, Pauw, D.*, Clegg, T. & **Weintrop, D**. (2020). Building For Robots: An Alternative Approach of Combining Construction and Robotics. Paper to be published in the *Proceedings of the Constructionism 2020 Conference*. Dublin, Ireland.

47. **Weintrop, D.,** Holbert, N. & Tissenbaum, M. (2020). Considering Alternative Endpoints: An Exploration in the Space of Computing Educations. *Proceedings of the Constructionism 2020 Conference*. Dublin, Ireland.

48. Franklin, D., **Weintrop, D.**, Palmer, J., Coenraad, M.*, Cobian, M.#, Beck, K.#, Rasmussen, A.#, Krause, S., White, M.*, Anaya, M.*, & Crenshaw, Z.* (2020). Scratch Encore: The Design and Pilot of a Culturally-Relevant Intermediate Scratch Curriculum. *Proceedings of the 51st ACM Technical Symposium on Computer Science Education*, 794–800. [31%]

49. Coenraad, M.*, Palmer, J., Franklin, D. & **Weintrop, D**. (2019). Enacting Identities: Participatory Design as a Context for Youth to Reflect, Project, and Apply their Emerging Identities. *Proceedings of the 18th ACM International Conference on Interaction Design and Children* (pp. 185–196). New York, NY, USA: ACM. [33%]

50. Cabrera, L.*, Maloney, J. & **Weintrop, D**. (2019). Programs in the Palm of your Hand: How Live Programming Shapes Children's Interactions with Physical Computing Devices. *Proceedings of the 18th ACM International Conference on Interaction Design and Children* (pp. 227-236). New York, NY, USA: ACM. [33%]

51. **Weintrop, D**., Killen, H.*, Munzar, T.*, & Franke, B. (2019). Block-based Comprehension: Exploring and Explaining Student Outcomes from a Read-only Block-based Exam*. Proceedings of the 50th ACM Technical Symposium on Computer Science Education* (pp. 1218–1224). ACM. [32%]

52. Killen, H.*, **Weintrop, D**., & Garvin, M. (2019). AP Computer Science Principles' Impact on the Landscape of High School Computer Science using Maryland as a Model. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education* (pp. 1060–1066). ACM. [32%]

53. Garvin, M., Killen, H*., Plane, J., & **Weintrop, D**. (2019). Primary School Teachers' Conceptions of Computational Thinking. *In Proceedings of the 50th ACM Technical Symposium on Computer Science Education* (pp. 899–905). ACM. [32%]

54. Marciano, R., Lemieux, V., Hedges, M., Tomiura, Y., Greenberg, J., Underwood, W., Fenlon, K., Kriesberg, A., Kendig, M., Jansen, G., Piety, P., **Weintrop, D**. & Kurtz, M. (2019) Establishing an International Computational Network for Librarians and Archivists. *In iConference 2019 Proceedings*. College Park, MD, USA.

55. **Weintrop, D**., Killen, H.* & Franke, B. (2018). Blocks or Text? How programming language modality makes a difference in assessing underrepresented populations. In Kay, J. and Luckin, R. (Eds.). Rethinking Learning in the Digital Age: Making the Learning Sciences Count, *13th International Conference of the Learning Sciences (ICLS)* 2018. London, UK. [32%]

56. **Weintrop, D**., Afzal, A.*, Salac, J.*, Francis, P., Li, B., Shepherd, D. & Franklin, D. (2018). Evaluating CoBlox: A Comparative Study of Robotics Programming Environments for Adult Novices. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. pp. 366:1-12. Montreal QC, Canada: ACM Press. [26%]
Honorable Mention Award (top 5% of all submissions)

57. **Weintrop, D**., Hansen, A. K.*, Harlow, D. B., & Franklin, D. (2018). Starting from Scratch: Outcomes of early computer science learning experiences and

implications for what comes next. In *Proceedings of the 2018 ACM Conference on International Computing Education Research* (pp. 142-150). ACM. [22%]

58. Coenraad, M.* & **Weintrop, D**. (2018). Introducing Computational Thinking Across the Curriculum with Virtual Reality. In Kong, S.C., Andone, D., Biswas, G., Crick, T., Hoppe, H.U., Hsu, T.C., Huang, R.H., Li, K.Y., Looi, C.K., Milrad, M., Sheldon, J., Shih, J.L., Sin, K.F., Tissenbaum, M., & Vahrenhold, J. (Eds.). *Proceedings of the International Conference on Computational Thinking Education 2018*. Hong Kong: The Education University of Hong Kong.

59. **Weintrop, D.** (2018). Defining, Designing, and Documenting Computational Thinking Across K-12 Education. In Kay, J. and Luckin, R. (Eds.). Rethinking Learning in the Digital Age: Making the Learning Sciences Count, *13th International Conference of the Learning Sciences (ICLS) 2018*. London, UK. [32%]

60. Tissenbaum, M., Sheldon, J., Sherman, M. A., Abelson, H., **Weintrop, D.,** Jona, K., Horn, M., Wilensky, U., Basu, S., Rutstein, D., Snow, E., Shear, L., Grover, S., Lee, I., Klopfer, E., Jayathirtha, G., Shaw, M., Kafai, Y., Mustafaraj, E., Temple, W., Shapiro, R. B., Lui, D, & Sorensen, C. (2018). The State of the Field in Computational Thinking Assessment. In Kay, J. and Luckin, R. (Eds.). Rethinking Learning in the Digital Age: Making the Learning Sciences Count, *13th International Conference of the Learning Sciences (ICLS) 2018*. London, UK. [32%]

61. **Weintrop, D.,** & Wilensky, U. (2017). Between a Block and a Typeface: Designing and Evaluating Hybrid Programming Environments. In *Proceedings of the 2017 Conference on Interaction Design and Children* (pp. 183–192). New York, NY, USA: ACM. [21%]

62. **Weintrop, D**., & Holbert, N. (2017). From Blocks to Text and Back: Programming Patterns in a Dual-Modality Environment. In *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education* (pp. 633–638). New York, NY, USA: ACM. [30%]

63. **Weintrop, D.,** Shepherd, D., Francis, P. & Franklin, D. (2017). Blockly Goes to Work: Block-based Programming for Industrial Robots. *Proceedings of the 2017 IEEE Blocks and Beyond Workshop (Blocks and Beyond)*.

64. Franklin, D., Skifstad, G. *, Rolock, R.*, Mehrotra, I. *, Ding, V. *, Hansen, A.*, **Weintrop, D.** & Harlow, D. (2017). Using Upper-Elementary student performance to understand conceptual sequencing in a blocks-based Curriculum. In *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education* (pp. 231–236). New York, NY, USA: ACM. [30%]

65. Orton, K., **Weintrop, D**., Beheshti, E., Horn, M., Jona, K. & Wilensky, U. (2016). Bringing Computational Thinking into High School Mathematics and Science Classrooms. *Proceedings of the International Conference of the Learning Sciences (ICLS) 2016*. Singapore. [31%]

66. Brady, C., **Weintrop, D.,** Anton, G., & Wilensky, U. (2016). Constructionist Learning at the Group Level with Programmable Badges. *Proceedings of the Constructionism 2016 Conference*. Bangkok, Thailand.

67. Brown, N. C. C., Mönig, J., Bau, A., & **Weintrop, D**. (2016). Future Directions of Blocks-based Programming. Panel presented at *the 47th ACM Technical Symposium on Computer Science Education (SIGCSE)*. [35%]

68. **Weintrop, D**. & Wilensky, U. (2015). Using Commutative Assessments to Compare Conceptual Understanding in Blocks-based and Text-based Programs. In *Proceedings of the 11th annual International Computing Education Research (ICER) conference*. New York, NY, USA: ACM. [26%]

69. **Weintrop, D**. (2015). Comparing Text-based, Blocks-based, and Hybrid Blocks/Text Programming Tools. *In Proceedings of the 11th annual International Computing Education Research (ICER) conference*. New York, NY, USA: ACM. [26%]

70. Brady, C., **Weintrop, D**., Gracey, K., Anton, G., & Wilensky, U. (2015). The CCL-Parallax Programmable Badge: Learning with Low-Cost, Communicative Wearable Computers. *In Proceedings of the 16th Annual Conference on Information Technology Education* (pp. 139–144). New York, NY, USA: ACM. [41%]

71. **Weintrop, D**. & Wilensky, U. (2015). To Block or not to Block, That is the Question: Students' Perceptions of Blocks-based Programming. In *Proceedings of the 14th International Conference on Interaction Design and Children*. New York, NY, USA: ACM. [23%]

72. **Weintrop, D.** & Wilensky, U. (2015). The Challenges of Studying Blocks-based Programming Environments. *2015 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*. [38%]

73. **Weintrop, D**. (2015). Blocks, Text, and the Space Between the Role of Representations in Novice Programming Environments. (2015). *IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*. [38%]

74. **Weintrop, D.,** Wilensky, U., Roscoe, J.#, & Law, D.# (2015). Teaching Text-based Programming in a Blocks-based World. In *Proceedings of the 46th ACM Technical Symposium on Computer Science Education (p. 678).* New York, NY, USA: ACM. [36%]

75. **Weintrop, D.** (2015). Minding the Gap Between Blocks-Based and Text-Based Programming. In *Proceedings of the 46th ACM Technical Symposium on Computer Science Education* (p. 720). New York, NY, USA: ACM. [36%]

76. **Weintrop, D**., Head, B., & Wilensky, U. (2015). Plotting Programming Trajectories with the NetLogo Data Explorer. In *Proceedings of Information Visualization, 2015. Chicago, IL. IEEE*. [21%]

77. **Weintrop, D**. & Wilensky, U. (2015) Keeping it Old School: Classic Video Games as Inspiration for Modern Student Programs*. Proceedings of Games, Learning, & Society 11*. Madison, WI.

78. Holbert, N., **Weintrop, D.**, Wilensky, U., Sengupta, P., Killingsworth, S., Krinks, K., Brady, C., Clark, D., Klopfer, E., Shapiro, R. B., & Russ, R. (2014) Constructionist video games: Combining Video Games and Constructionist Design to Support Deep Learning in Play. *Symposium at the 2014 International Conference of the Learning Sciences*. Boulder, CO. [55%]

79. Horn, M. S., **Weintrop, D.**, & Routman, E. (2014). Programming in the pond: A tabletop computer programming exhibit. In *Proceedings of the Extended Abstracts of the 32nd Annual ACM Conference on Human Factors in Computing Systems* (pp. 1417–1422). New York, NY, USA: ACM. [23%]

80. **Weintrop, D.,** Beheshti, E., Horn, M. S., Orton, K., Jona, K., Trouille, L., & Wilensky, U. (2014) Interactive Assessment Tools for Computational Thinking in High School STEM Classrooms. *INTETAIN 2014*, Chicago, IL.

81. **Weintrop, D.** & Wilensky, U. (2014). Program-to-play videogames: Developing computational literacy through gameplay. *Proceedings of Games, Learning, & Society 10* (pp. 264-271). Madison, WI.

82. **Weintrop, D.** & Wilensky, U. (2014). Situating programming abstractions in a program-to-play game*. Proceedings of the Constructionism 2014 Conference*. Vienna, Austria.

83. **Weintrop, D.,** & Wilensky, U. (2013). Know your enemy: Learning from in-game opponents. In *Proceedings of the 12th International Conference on Interaction Design and Children* (pp. 408–411). New York, NY, USA: ACM. [33%]

84. **Weintrop, D**., & Wilensky, U. (2013). RoboBuilder: A computational thinking game. In *Proceeding of the 44th ACM technical symposium on Computer science education* (pp. 736–736). Denver, CO: ACM. [38%]

85. **Weintrop, D**., Holbert, N., Wilensky, U., & Horn, M. S. (2012). Redefining constructionist video games: Marrying constructionism and video game design. In C. Kynigos, J. Clayson, & N. Yiannoutsou (Eds.), *Proceedings of the Constructionism 2012 Conference*. Athens, Greece.

86. **Weintrop, D.,** & Wilensky, U. (2012). RoboBuilder: A Program-to-Play Constructionist Video Game. In C. Kynigos, J. Clayson, & N. Yiannoutsou (Eds.), *Proceedings of the Constructionism 2012 Conference*. Athens, Greece.

II.E. Conferences, Workshops, and Talks

II.E.1. Keynotes

1. Learning Computer Science with Robots. Keynote presentation at *the 40th Annual Human-Computer Interaction Lab (HCIL) Symposium*. College Park, MD, USA. 2023.

2. The Computational Thinking in Math and Science Taxonomy: An Update. Keynote presentation at *the Advancing the Integration of Interdisciplinary Computational Thinking in the Physical and Life Sciences Conference*. College Park, MD, USA. 2019.

3. Why Bring Computational Thinking into Archival Science? Keynote presentation at *the Developing a Computational Framework for Library and Archival Education workshop*. College Park, MD, USA. 2019.

4. Block-based Comprehension: The Impact of Program Representation on Student Performance. Keynote presentation at *the 36th Annual Human-Computer Interaction Lab (HCIL) Symposium*. College Park, MD, USA. 2019.

5. Modality Matters: Understanding the Design of Introductory Programming Environments. Keynote presentation at *the 2016 Consortium for Computing Sciences in Colleges*, Midwest Conference.

II.E.2. Invited Talks

1. Authentic K12 Data Science Assessment: An example from an interest-driven high school data science curriculum. Invited Panelist. The National Academies

Workshop on the Developing Competencies for the Future of Data and Computing: The Role of K-12. Washington, DC. 2024.

2. Design, Implementation, and Evaluation of Effective, Engaging, and Equitable Computational Learning Experiences. Department of Education, Education and Innovation (EIR) STEM-CS Expert Speaker Series. Virtual. 2024.
3. The Case for Block-based Programming. Vex World 2024 Educators Conference. Dallas, Texas. 2023.
4. Computing in the Classroom: Exploring Strategies for Brining the Powerful Ideas of Computing into K-12 Classrooms. University of Illinois. Virtual. 2023.
5. Computer Science Education Research in K-12 Classrooms. Vex World 2023 Educators Conference. Dallas, Texas. 2023.
6. Computational Thinking in Science Education. Invited Panelist. The National Academies Conversations on Sciences Standards Series: Insights about Research on Science Learning and Teaching. Virtual. 2023.
7. Intro to VEXcode VR Advanced & Advanced Panel. Vex World 2022. Dallas, Texas. 2022.
8. Computational Thinking in K-12 Classrooms: Why, How, and What Comes Next? Invited Talk. Michigan State University. Virtual. 2021.
9. Computer Science Education Research in K-12 Classrooms. Illinois K-12 Computer Science Education Summit. Virtual. 2021.
10. Understanding the role of block-based programming in computer science education. Brown University. Virtual. 2021.
11. The Role of Block-based Programming in Computer Science Education. Invited Talk. Raspberry Pi Computing Education Research Seminar. Virtual. 2020.
12. Defining, Designing & Documenting Computational Thinking in K-12 Education. Invited Talk. Worcester Polytechnic Institute. Virtual. 2020.
13. To Block or not to Block: Understanding the effects of programming language representation in high school computer science classrooms. Invited Talk. University of Utah Learning Sciences Speaker Series. Virtual. 2020.
14. Authentic STEM Outcomes for Computing and Technology. Invited Panelist. The National Academies Workshop on the Role of Authentic STEM Learning Experiences in Developing Interest and Competencies for Technology and Computing. Washington, DC. 2019.
15. Block-based Comprehension: The Impact of Program Representation on Student Performance. Invited talk at the First Annual Northwestern Computer Science/Learning Sciences Symposium. Evanston, IL, USA. 2019.
16. Defining, Designing and Documenting Computational Thinking for K-12 Education. Center for the Advanced Study of Communities and Information Speaker Series. College Park, MD. 2017.
17. To Block or Not to Block: Understanding the Effects of Programming Language Representation in High School Computer Science Classrooms. Human-Computer Interaction Lab Speaker Series. College Park, MD. 2017.

18. Computer Science at a Crossroads: Understanding Introductory Programming Environments. Google Chicago. Chicago, IL. 2016.

19. Computer Science at a Crossroads: Understanding Introductory Programming Environments. Northwestern University Computer Science Education Day. Evanston, IL. 2016.

20. Modality Matters: Understanding the Design of Introductory Programming Environments. Code.org. Seattle, WA. 2016.

21. Bringing Computational Thinking into Math and Science Classrooms. University of Chicago Department of Computer Science. Chicago, IL. 2016.

22. Defining Computational Thinking in High School Math and Science. K-12 Computer Science Framework Thought Leaders workshop. Chicago, IL. 2015.

23. Blocks, Text, and the Space Between: The Role of Representation in Novice Programming Environments. Massachusetts Institute of Technology. Cambridge, MA. 2015.

24. Modality Matters: Teaching the Next Generation of Computer Scientists. DePaul University. Chicago, IL. 2015.

25. Teaching Computer Science: Where We Are, What We Know, and Where We Might be Heading. Google Chicago. Chicago, IL. 2014.

II.E.3. Refereed Presentations

1. Zhou, X*, **Weintrop, D.**, Israel-Fishelson, R , Moon, P* & Xin, Y*. (2025). Exploring the Evolution of High School Students' Questions in an Interest-Driven Data Science Curriculum. Paper presented at the Annual Meeting of the American Educational Research Association (AERA) 2025. Denver, CO, USA.

2. Zhou, X.*, Israel-Fishelson, R°, **Weintrop, D.**, Moon, P.* & Xin, Y.* (2025) Investigating the Evolution of Interest-Driven Data Science Questions Posed by High-School Students. Paper presented at the Data Science Education in K12 Conference. San Antonio, TX, USA.

3. Moon, P., Israel-Fishelson, R. °, Proctor, M.[#] & **Weintrop, D**. (2025) Iterating Toward a Student-Centric High School Data Science Curriculum. Paper presented at the Data Science Education in K12 Conference. San Antonio, TX, USA.

4. Killen, H.*, Tran, M.*, Palmer, J., Franklin, D., & **Weintrop, D.** (2024). Supporting Computer Science Teachers to Customize Culturally Relevant Instructional Materials: Challenges and Iteratively Designed Solutions. Paper presented at the Annual Meeting of the American Educational Research Association (AERA) 2024. Philadelphia, PA, USA.

5. **Weintrop, D.**, Subramaniam, M., & Koren, N.* (2024). Assessing Computational Thinking in Libraries: A Suite of Assessment Tools for Librarians and Library Staff. Paper to be presented at the Annual Meeting of the American Educational Research Association (AERA) 2024. Philadelphia, PA, USA.

6. Lin, Y.*, **Weintrop, D**., & McKenna, J. (2024). Switch Mode: Embedding Text-based Programming in Block-based Environments. Paper to be presented at the

[#] Denotes K-12 teacher or school district author

Annual Meeting of the American Educational Research Association (AERA) 2024. Philadelphia, PA, USA.

7. Lin, Y.*, **Weintrop, D.**, McKenna, J. & Luo, M (2023). 使用VEX123機器人幫助低年級學習者銜接實體與虛擬程式設計 (Connecting Physical and Virtual Programming for K-3 Students with VEX 123). Paper presented at 數位學習與教育科技國際研討會 2023 ICEET (International Conference on E-learning and Educational Technology). National Chengchi University, Taipei, Taiwan.
8. Lin, Y.*, **Weintrop, D.**, McKenna, J. & Luo, M (2023). Switch Mode 建立視覺化程式語言和文字式程式語言的中間過渡地帶 (Switch Mode: Building a Middle Ground between Block-based and Text-based Programming). Poster presented at 數位學習與教育科技國際研討會 2023 (International Conference on E-learning and Educational Technology). National Chengchi University, Taipei, Taiwan.
9. Fletcher, C., **Weintrop, D.** & McGill, M. (2023). Evidence-Based Trends That Will Influence Your K-12 CS Education Initiatives. Paper presented at Computer Science Teachers Association Annual Conference. Virtual.
10. Lin, Y.*, **Weintrop, D.** ,& McKenna, J. (2023). Lowering the Floor with VEX123: Bridging Physical and Virtual Programming for Young Learners. Paper presented at the Annual Meeting of the American Educational Research Association (AERA) 2023. Chicago, IL, USA.
11. Kramarczuk, K.*, Avery, C., **Weintrop, D.**, Atchison, K., & Sampson, G.* (2023). Computing Education for Social Good: Preparing Undergraduate Computer Science Majors to Become Anti-biased K-12 Educators. Paper presented at the Annual Meeting of the American Educational Research Association (AERA) 2023. Chicago, IL, USA.
12. Bih, J.*, Weintrop, D. (2023) Computational Thinking in Robotics Environments: Supporting Computation and Creativity in Computational Thinking-Enhanced Contexts. Paper presented at the Annual Meeting of the American Educational Research Association (AERA) 2023. Chicago, IL, USA.
13. Subramaniam, M., **Weintrop, D.**, & Koren, N.*. (2023). Assessing Computational Thinking in Libraries: Tools, Best Practices, and Impact Stories. Paper to be presented at the Maryland Library Association/Delaware Library Association 2023 Conference.
14. Jin, Y.*, **Weintrop, D.**, & McKenna, J. (2023). Switch-Mode: Authoring Text-based Programming in Block-based Programming Environment. National Future of Education Technology Conference (FETC). New Orleans, LA.
15. Koren, N.*, **Weintrop, D**. & Subramaniam, M. (2022). Using Design Based Implementation Research Method to Create Computational Thinking Assessment Tools for Youth Programs in Public Libraries. Association for Library and Information Science Education (ALISE 2022) Conference, Pittsburgh, PA.
16. Decker, A., Weiss, M. A., Becker, B. A., Dougherty, J. P., Edwards, S. H., Goode, J., Ko, A. J., McGill, M. M., Morrison, B. B., Pérez-Quiñones, M., Rankin, Y. A., Ross, M., Vahrenhold, J., **Weintrop, D.**, & Yadav, A. (2022). Piecing Together the Next 15

Years of Computing Education Research Workshop Report. *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education*, 1051–1052.

17. Asbell-Clarke, J., Robillard, T., Edwards, T., Bardar, E., **Weintrop, D.**, Grover, S., & Israel, M. (2022). Including Neurodiversity in Foundational and Applied Computational Thinking (INFACT). *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education*, 1076.

18. Lin, Y.*, McKenna, J., & **Weintrop, D.**, (2022). Mixed-mode: a new Approach to Bridging Block-based and Text-based Programming. Session to be presented at *the Computer Science Teachers Association 2022 Annual Meeting*. Chicago, IL.

19. Subramaniam, M., Koren, N.* & **Weintrop, D**. (2022). Capturing Outcomes of Youth Computational Thinking Programs in Public Libraries: A Repository of Assessment Tools and Case Studies of Impact. *American Library Association (ALA) Annual Conference*, Washington D.C., United States.

20. **Weintrop. D**. (2021). (Attempting to) Bring Computational Thinking into Under-Resourced Elementary Classrooms during a Pandemic. Poster presented at *the Annual Meeting of the American Educational Research Association (AERA) 2021*. Virtual Conference.

21. Subramaniam, M., **Weintrop, D.**, & Koren, N.* (2021) IMProve Assessment of Computational Thinking: IMPACT your Library. Paper to be presented at *the Annual Conference of the American Library Association*. Virtual Conference.

22. Coenraad, M.*, Beck, K#, Palmer, J., & **Weintrop, D**. (2021) The TEC Rubric to Evaluate and Improve Computing Curricula. Session to be presented at the C*omputer Science Teachers Association 2021 Annual Meeting*. Virtual Conference.

23. Coenraad, M.*, Beck, K# & **Weintrop, D**. (2021) Supporting Equitable Online and In-Person Scratch Teaching. Session presented at *the Computer Science Teachers Association 2021 Annual Meeting*. Virtual Conference.

24. Bih, J.*, **Weintrop, D.,** Williams-Pierce, C., Moon, P. F.*, Elby, A., Walton, M.*, & Walkoe, J. (2021). Computational Bodies: Grounding Computational Thinking Practices in Embodied Gestures. Paper to be presented at *the Annual Meeting of the American Educational Research Association (AERA) 2021*. Virtual Conference.

25. Lin, Y.*, & **Weintrop, D**. (2021). The Current Landscape of Block-based Programming Environments. Paper to be presented at *the Annual Meeting of the American Educational Research Association (AERA) 2021*. Virtual Conference.

26. Coenraad, M.*, Palmer, J., **Weintrop, D.**, Eatinger, D. & Franklin, D. (2021). The Effects of Themed Starter Scratch Projects on Creativity in Introductory Programming Lessons. Paper to be presented at *the Annual Meeting of the American Educational Research Association (AERA) 2021*. Virtual Conference.

27. Coenraad, M.*, Eatinger, D., Palmer, J., Weintrop, D. & Franklin, D. (2021). Transitioning a Culturally Relevant Curriculum Online: Adapting Scratch Encore for Emergency Remote Teaching. Paper to be presented at *the Annual Meeting of the American Educational Research Association (AERA) 2021*. Virtual Conference.

28. Coenraad, M.*, Beck, K.#, & **Weintrop, D**. (2020) Scratch Encore: An Intermediate Scratch Curriculum Balancing Equity and Advanced Computing

Content. Session presented at *the Computer Science Teachers Association 2020 Annual Meeting*. Arlington, VA.

29. Langbeheim, E., Levy, S. T., Saba, J., Orban, C., Vieyra, R.*, Teeling-Smith, R., Yerushalmi, E., & **Weintrop, D.** (2019). Disentangling Coding in Secondary School Science: Contexts, Interfaces and Assessments. Paper presented at *the annual meeting of the National Association for Research in Science Teaching (NARST)*. Baltimore, MD.

30. Coenraad, M.*, Palmer, J., Franklin, D., & **Weintrop, D**. (2019). Utilizing Participatory Design to Develop a Culturally Relevant Computer Science Curriculum. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education (SIGCSE '19)*. ACM, New York, NY, USA, 1261-1261.

31. **Weintrop, D**., Killen, H*, Munzar, T*. & Franke, B. (2019). Investigating Student Performance on Programming Questions of the Advanced Placement Computer Science Principles Exam. Paper presented at *the Annual Meeting of the American Educational Research Association (AERA) 2019*. Toronto, ON, CA.

32. Basu, S., McKlin, T., Rutstein, D., **Weintrop, D.,** Yadav, A. & Burke, Q. (2019). Assessing Computational Thinking: A "Landscape" symposium about where we are at & where to go. Symposium held at *the Annual Meeting of the American Educational Research Association (AERA) 2019*. Toronto, ON, CA.

33. Killen, H*., **Weintrop, D**. & Garvin, M. (2019). AP Computer Science Principles' Impact on High School Computer Science using Maryland as a Model. Paper presented at *the Annual Meeting of the American Educational Research Association (AERA) 2019*. Toronto, ON, CA.

34. Wheeler, E.#, **Weintrop, D**., Rasmussen, A.#, Coenraad, M*, Cobian, M.#, Hellige, J. & Franklin, D (2019). The State of K-8 Computer Science in an Urban, Decentralized District According to its Teachers. Paper presented *at the Annual Meeting of the American Educational Research Association (AERA) 2019*. Toronto, ON, CA.

35. **Weintrop, D**., Hansen, A.*, Harlow, D. & Franklin, D. (2018). Bringing Computer Science into Elementary School Classrooms. Paper presented at *the Annual Meeting of the American Educational Research Association (AERA) 2018*. New York, NY, USA

36. **Weintrop, D**., & Wilensky, U. (2018). How the Block-based, Text-based, and Hybrid Block/Text Modalities Shape Conceptual Understandings of Programming Concepts. Paper presented at *the Annual Meeting of the American Educational Research Association (AERA) 2018*. New York, NY, USA

37. **Weintrop, D**., Bain, C.* & Wilensky, U. (2017). Blocking Progress? Transitioning from Blocks-based to Text-based Programming. Paper presented at *the Annual Meeting of the American Educational Research Association (AERA) 2017*. San Antonio, TX, USA.

38. Wilensky, U. & **Weintrop, D**. (2017). Constructionist Approaches for Computational Thinking in Math and Science Classrooms. Paper presented at *the Annual Meeting of the American Educational Research Association (AERA)* 2017. San Antonio, TX, USA.

39. Holbert, N. & **Weintrop, D**. (2017). Exploring why novice programmers switch between text and blocks in a dual-modality coding environment. Paper presented at *the Annual Meeting of the American Educational Research Association (AERA)* 2017. San Antonio, TX, USA.

40. **Weintrop, D.** & Wilensky, U. (2016) Cognitive affordances of blocks-based programming in a two-dimensional construction space. Presented at *the 46th Meeting of the Jean Piaget Society Annual Meeting*, Chicago, IL, USA.

41. **Weintrop, D**., Orton, K., Horn, M.S., Beheshti, E., Trouille, L., Jona, K., & Wilensky, U. (2016). Computational Thinking in the Science Classroom. Invited session presented *at the annual meeting of the National Science Teachers Association (NSTA)*. Nashville, TN.

42. **Weintrop, D**. & Wilensky, U. Bringing Blocks-based Programming into High School Computer Science Classrooms. (2016) Paper presented *at the Annual Meeting of the American Educational Research Association (AERA 2016)*, Washington DC, USA.

43. **Weintrop, D**., Orton, K., Horn, M.S., Beheshti, E., Trouille, L., Jona, K., & Wilensky, U. (2015). Computational Thinking in the Science Classroom: Preliminary Findings from a Blended Curriculum. Paper presented at *the annual meeting of the National Association for Research in Science Teaching (NARST).* Chicago, IL.

44. **Weintrop, D**., Orton, K., Horn, M.S., Beheshti, E., Trouille, L., Jona, K., & Wilensky, U. (2015). Outcomes of Bringing Computational Thinking into STEM Classrooms. Paper presented at *the Annual Meeting of the American Educational Research Association (AERA 2015),* Chicago, USA.

45. Trouille, L., Beheshti, E., Horn, M., Jona, K., Kalogera, V., **Weintrop, D.,** & Wilensky, U. (2013). Bringing Computational Thinking into the High School Science and Math Classroom. In American *Astronomical Society, AAS Meeting* #221, #201.09.

46. **Weintrop, D**., & Wilensky, U. (2013). Supporting Computational Expression: How Novices Use Programming Primitives in Achieving a Computational Goal. Presented at *the American Education Researchers Association (AERA),* San Francisco, CA, USA.

47. **Weintrop, D**., & Wilensky, U. (2013). Learning by Leveling: An Incremental Introduction to Programming. Presented at *the 43rd Annual Meeting of the Jean Piaget Society Annual Meeting*, Chicago, IL, USA.

48. **Weintrop, D**., Hjorth, A, & Wilensky, U. (2013). Know Your Network: Learning Social Networks Analysis Through Meaningful Manipulation. *InfoSocial 2013*. Evanston, IL, USA.

49. Horn, M., **Weintrop, D**., Beheshti, E. & Olson, I. Spinners, Dice, and Pawns: Using board games to prepare learners for agent-based modeling activities. (2012) In M. Berland (chair) and Kafai, Y. (discussant), Fiddling on the fly: thinking, learning, and designing using board games. Symposium presented at *the annual meeting of the American Education Research Association*, Vancouver, British Columbia.

II.E.6. Refereed Posters

1. Bih, J.*, & **Weintrop, D.** (2025). Bringing Computational Thinking into Elementary Classrooms through a Robotics-enhanced Mathematics Curriculum. Paper presented at the Annual Meeting of the American Educational Research Association (AERA) 2025. Denver, CO, USA.
2. Lin, Y.*, Weintrop, D. & McKenna, J. (2024). Is Block-Based Programming "Real Programming"?. Poster to be presented at the 2024 International Society of the Learning Sciences Annual Meeting. Buffalo, NY.
3. Coenraad, M. & **Weintrop, D.** (2024). Utilizing Co-Design to Introduce Technological and Algorithmic Bias in Middle School Computer Science Lessons. Poster to be presented at the Annual Meeting of the American Educational Research Association (AERA) 2024. Philadelphia, PA, USA.
4. Lin, Y.*, **Weintrop, D.**, & McKenna, J. (2023). It's as Easy as 123: Multiple Programming Approaches on a Single Device to Support Novices. 2023 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), 263–265.
5. Tsan, J.°, **Weintrop, D.**, Eatinger, D., Pugnali, A.*, & Franklin, D. (2023) The Influences Expressed in Open-ended Student Projects in a Middle School Computer Science Curriculum. Poster to be presented at the Annual Meeting of the American Educational Research Association (AERA) 2023. Chicago, IL, USA.
6. Pellicone, A.°, **Weintrop, D.,** Shokeen, E.*, Moon, P. F.*, Ketelhut, D. J., Cukier, M. & Plane, J. D. (2023). Teaching Cybersecurity Through Game-based Learning Challenges. Poster to be presented at the Annual Meeting of the American Educational Research Association (AERA) 2023. Chicago, IL, USA.
7. Lin, Y.*, **Weintrop, D**., & McKenna, J. (2023). Switch Mode: Scaffolding Learners from Block-based to Text-based Programming. Poster to be presented at the Annual Meeting of the American Educational Research Association (AERA) 2023. Chicago, IL, USA.
8. Koren, N. *, **Weintrop, D.**, & Subramaniam, M. (2023). Measuring Computational Thinking Outcomes with and for Librarians. Poster to be presented at the Annual Meeting of the American Educational Research Association (AERA) 2023. Chicago, IL, USA.
9. Lin, Y.*, **Weintrop, D.**, McKenna, J. (2022). Supporting Multiple Programming Approaches in Early Elementary School Computer Science Education. Poster presented at *2022 Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)*. Philadelphia, Pennsylvania.
10. Coenraad, M.* & **Weintrop, D.** (2021). Designing Computing Lessons about the Equity and Social Justice Impacts of Computing. Poster presented at *2021 Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)*. Virtual Conference.
11. **Weintrop, D.**, Subramaniam, M. & Morehouse, S*. (2021). Computational Thinking in Public Libraries. Poster to be presented at *the Annual Meeting of the American Educational Research Association (AERA) 2021*. Virtual Conference.
12. Coenraad, M.*, **Weintrop, D.**, Eatinger, D., Palmer, J. & Franklin, D. (2020) Identifying Spheres of Influence for a Culturally Relevant Computing Curriculum through Participatory Design. In M. Gresalfi, M. & I. S. Horn (Eds.), The

Interdisciplinarity of the Learning Sciences, Proceedings of *the 14th International Conference of the Learning Sciences (ICLS) 2020*, Nashville, TN: International Society of the Learning Sciences, pp. 815-816.

13. Wheeler, E.#, Wachen, J.°, Rasmussen, A. M.#, Franklin, D., & **Weintrop, D.** (2020). Introducing Computer Science into K-8 Classrooms: Teachers' Perspectives from a Large, Urban School District. Proceedings of *the 51st ACM Technical Symposium on Computer Science Education*, 1330.

14. Ketelhut, D.J., Coenraad, M.*, **Weintrop, D.,** Cukier, M., Plane, J., Rahimian, R. & Wolf, T. (2019). Game Design for Engagement and Learning about Cybersecurity. Poster presented at *the 13th European Conference on Game-based Learning*. Odense, Denmark.

15. Coenraad, M.*, Ketelhut, D.J., Cukier, M., Plane, J. & **Weintrop, D**. (2019). Trends in Cybersecurity Focused Games. Poster presented at *the 13th European Conference on Game-based Learning*. Odense, Denmark.

16. **Weintrop, D**. & Wilensky. U. (2017). Blocks-based Programming and Preparation for Future Computer Science Learning. Poster presented at *the Annual Meeting of the American Educational Research Association (AERA)* 2017. San Antonio, TX, USA.

17. Beheshti, E.*, **Weintrop, D**., Swanson, H.°, Orton, K., Horn, M.S., Jona, K., Trouille, L., & Wilensky, U. (2017). Computational Thinking in Practice: How STEM Professionals Use CT in Their Work. Poster presented at *the Annual Meeting of the American Educational Research Association (AERA)* 2017. San Antonio, TX, USA.

18. Beheshti, E., **Weintrop, D**., Orton, K., Horn, M.S., Jona, K., Trouille, L., & Wilensky, U. (2015). Bringing Expert Computational Practices into High School Science Classrooms. Poster presented at *the annual meeting of the National Association for Research in Science Teaching (NARST)*. Chicago, IL.

19. **Weintrop, D**., Beheshti, E., Horn, M. S., Orton, K., Jona, K., Trouille, L., & Wilensky, U. (2014). Defining Computational Thinking for Science, Technology, Engineering, and Math. Poster presented at *the Annual Meeting of the American Educational Research Association (AERA 2014)*, Philadelphia, USA.

II.E.8. Non-Refereed Presentations

1. Koren, N.*, **Weintrop, D.**, & Subramaniam, M. (2022). IMPACT Libraries: Using the DBIR Method to Create Computational Thinking Assessment Tools for Youth Programs in Public Libraries. Paper presented at the 39th *Annual Human-Computer Interaction Lab (HCIL) Symposium*. College Park, MD, USA.

2. Cabrera, L.* & **Weintrop, D**. (2019) How Live Programming Shapes Children's Interactions with Physical Computing Devices. Paper presented at *the 36th Annual Human-Computer Interaction Lab (HCIL) Symposium*. College Park, MD, USA.

3. Coenraad, M*., Kuriakos, N*., Ketelhut, D.J., Plane, J., Cukier, M. & **Weintrop, D**. (2019). Designing Binary Learning Games for Middle Schoolers. Paper presented at *the 36th Annual Human-Computer Interaction Lab (HCIL) Symposium*. College Park, MD, USA.

4. **Weintrop, D**., Bih, J.*, Walton, M.* & Walkoe, J. (2019). Teaching Fourth Grade Mathematics and Computational Thinking with Sphero. Paper presented at *the 36th Annual Human-Computer Interaction Lab (HCIL) Symposium*. College Park, MD, USA.

5. **Weintrop, D**. (2018) CoBlox: Making Industrial Robotics Programming Accessible to All. Paper presented *at the 35th Annual Human-Computer Interaction Lab (HCIL) Symposium*. College Park, MD, USA.

6. Jona, K., Wilensky, U., Trouille, L., Horn, M. S., Orton, K., **Weintrop, D.**, & Beheshti, E. (2014). Embedding Computational Thinking in Science, Technology, Engineering, and Math (CT-STEM). Presented *at the 2014 CE21 PI and Community Meeting*, Orlando, FL.

II.E.12. Non-Refereed Panels

1. **Weintrop, D**., Beheshti, E., Horn, M., Jona, K., Kalogera, V., & Wilensky, U. (2013) Casting a Wide Net: Embedded Computational Thinking in STEM. (2013) *NSF Showcase at the 44th ACM technical symposium on Computer science education* (pp. 736–736). Denver, CO.

II.E.14. Workshops

1. Subramaniam, M., Weintrop, D. & Koren, N.* (2023). Going Beyond Attendance Data: Using Assessment Tools to Capture Computational Thinking Outcomes in Youth Library Programs. Annual Conference of the International Association of School Librarianship (IASL). Rome, Italy.

2. Underwood, W., **Weintrop, D.**, Kurtz, M. & Marciano, R. (2019). Introducing Computational Thinking into Archival Science Education. Workshop held at the *IEEE Big Data Workshop*. Seattle, WA, USA.

3. Brady, C, **Weintrop, D**., & Bain, C.* (2018) "Hacking the Conference Badge". Workshop at *the 2nd Annual International Conference on Computational Social Science*. Evanston, Illinois.

4. **Weintrop, D**., Hjorth, A., & Wilensky, U. "NetLogo Web: Bringing Turtles to the Cloud". Workshop at *Constructionism 2016*. Bangkok, Thailand. February 2016

5. Hjorth, A., **Weintrop, D**., & Wilensky, U. "LevelSpace: Constructing Models and Explanations across Levels". Workshop at *Constructionism 2016*. Bangkok, Thailand.

6. **Weintrop, D**., Hjorth, A., & Wilensky, U. (2014) "Know Your Network: Learning Social Networks Analysis Through Meaningful Manipulation with NetLogo". Workshop at *Constructionism 2014*. Vienna, Austria.

7. Johnson, E., Hadzikadic, M., **Weintrop, D**., & Holbert, N. (2013) "Understanding Complexity II: A Simple Guide to Using and Developing Agent-Based Models for Research". Workshop at *the 2013 American Political Science Association Annual Meeting*. Chicago, IL.

8. Stonedahl, F., **Weintrop, D**., Bumbacher, E., Deustch, A, & Shannon, C. (2013) "NetLogo: Teaching with Turtles and Crossing Curricular Boundaries". Workshop at *2013 ACM technical symposium on Computer science education*. Denver, CO.

9. Hjorth, A., & **Weintrop, D.** (2012) "NetLogo Workshop". Workshop at *Constructionism 2012*. Athens, Greece.

II.F. Professional and Extension Publications

II.F.1. Reports and Non-Refereed Monographs

1. Decker, A. (Ed.), Weiss M. (Ed.), McGill, M., Morrison, B., Pérez-Quiñones, M., Ross, M., **Weintrop, D.** & Yadav, A. (2024). Piecing Together the Next 15 Years of Computing Education. Report sponsored by the National Science Foundation.

II.H. Completed Creative Works and Scholarship

II.H.5. Software and Applications

2. **Weintrop, D.** (2015). Pencil.cc. Evanston, IL: Center for Connected Learning and Computer-Based Modeling, Northwestern University. https://github.com/dweintrop/pencilcode and http://pencil.cc
3. **Weintrop, D**. (2014). Snappier! Evanston, IL: Center for Connected Learning and Computer-Based Modeling, Northwestern University. https://github.com/dweintrop/BoB-site and http://snappier.herokuapp.com
4. **Weintrop, D.** (2014). Javaseer. Evanston, IL: Center for Connected Learning and Computer-Based Modeling, Northwestern University. https://github.com/dweintrop/javaseer
5. **Weintrop, D**. (2014). BlueJ Chirper. Evanston, IL: Center for Connected Learning and Computer-Based Modeling, Northwestern University. https://github.com/dweintrop/BlueJChirper
6. **Weintrop, D**. & Horn, M. S. Computational Thinking in STEM Online Assessment Framework. (2013) Evanston, IL. Northwestern University. http://ct-stem-assess.herokuapp.com and https://github.com/TIDAL-Lab/ct-stem
7. **Weintrop, D**. RoboBuilder. (2011) Evanston, IL: Center for Connected Learning and Computer-Based Modeling, Northwestern University. http://ccl.northwestern.edu/roboBuilder.

II.K. Sponsored Research and Programs – Administered by the Office of Research Administration (ORA)

II.K.1. Grants

1. *Collaborative Research: Empowering Educators to Create Customized, Culturally-Responsive Instructional Materials from Scratch Encore Harmonized with the Interest of Students*. National Science Foundation, DRK-12: #2201312. **$1,518,154**. (UMD Portion: $846,400). 2022-2026. **Principal Investigator**. (co-Principal Investigator: Diana Franklin).
2. *CAREER: Situating Computational Learning Opportunities in the Digital Lives of High School Students*. National Science Foundation, CSforAll: #2141655. **$1,040,084**. 2022-2026. **Principal Investigator**.
3. Research-Practice Partnership - Dean's Apprenticeship Program. College of Education, University of Maryland. **$25,000**. 2022-2023. **Principal Investigator**.
4. *INFACT: Include Neurodiversity in Foundational and Applied Computational Thinking*. Department of Education, EIR #U411C190179. **$3,175,344**. (UMD Portion: $206,017). 2019-2023. **UMD Principal Investigator**. (Project Principal

Investigator: Jodi Asbell-Clark, Co-Principal Investigators: Quinn Burke, Fengfeng Ke, Shuchi Grover, Maya Israel).

5. *Capturing Computational Thinking Literacy Development in Public Libraries.* Institute of Museum and Library Services, LG-14-19-0079-19. **$414,740**. 2019-2022. **Co-Principal Investigator**. (Principal Investigator: Mega Subramaniam).

6. *Integrating Computational Thinking into Mathematics and Science Pre-Service Teacher Methods Courses.* Maryland Center for Computing Education. **$39,926**. 2021-23. **Co-Principal Investigator**. (Principal Investigator: Janet Walkoe).

7. *Designing a Computer Science Pre-Service Teacher Methods Course for Maryland.* Maryland Center for Computing Education. **$39,799**. 2019-2020. **Principal Investigator**. (Co-Principal Investigator: Jan Plane).

8. *Early Computational Thinking for All: Exploring the Mutually Supportive Nature of Mathematics and Computational Thinking in Fourth-Grade Classrooms.* Spencer Foundation Small Grant, 201900099. **$44,629**. 2019. **Principal Investigator**. (Co-Principal Investigator: Janet Walkoe).

9. *Developing a Computational Framework for Library and Archival Education.* Institute of Museum and Library Services, RE-73-18-0105. **$99,176.** 2018-2019. **Co-Principal Investigator**. (Principal Investigator: Richard Marciano; Other Co-Principal Investigators: William Underwood, Michael Kurtz, Katrina Fenlon, Adam Kriesberg, Philip Piety).

10. *Increasing the Interest of Students from Underrepresented Populations for Cybersecurity*. Laboratory for Telecommunication Science DO55, Academic Gaming Research. **$744,461**. 2018-2023. **Co-Principal Investigator**. (Principal Investigator: Michel Cukier; Other Co-Principal Investigators: Jan Plane, Diane Jass Ketelhut).

11. Scratch Encore - Equity via a Flexible, Advanced Scratch Curriculum for Diverse Students and Teachers in Upper Elementary. National Science Foundation, CS4All: #1738758. **$1,262,256** (UMD Portion: $70,200). 2017-2022. **UMD Principal Investigator**. (Project Principal Investigator: Diana Franklin; Co-Principal Investigators: Andy Isaacs).

II.L. Gifts, and Funded Research not administered by ORA

II.L.1. Gifts *(solicited and in-kind funds)*

1. "Computer, Help Me With My Code!: Understanding the Impact of Conversational Large Language Models in Introductory Programming Courses for Students from Historically Excluded Populations in Computing. Gift from Google. **$60,000**. 2024. **Principal Investigator**. (co-Principal Investigator: Joel Chan).

2. *Talking to Robots – Block-by-Block* . Gift from the ABB Group. **$100,000**. 2017. **Co-Principal Investigator**. (Principal Investigator: Diana Franklin).

II.L.4. *Other – Internal University Grants*

1. *Reimagining Introductory Programming Courses to Broaden Participation in Computing in a Post-Generative AI World*. TLTC Teaching and Learning Innovation Grant **$50,000**. 2024. **Co-Principal Investigator**. (Principal Investigator: Joel Chan).

2. Research-Practice Partnership - Dean's Apprenticeship Program. College of Education, University of Maryland. **$25,000**. 2022-2023. **Principal Investigator**.

3. *Computational Thinking for All: Identifying Existing Knowledge Resources and Teaching Practices for Bringing Computational Thinking into K-12 Classrooms.* University of Maryland, College of Education SPARC grant. **$15,000**. 2018. **Principal Investigator**.

II.M. Centers for Research, Scholarship, and Creative Activities

II.M.2. *Centers Directed*

1. *Iribe Initiative for Inclusion & Diversity in Computer.* Interim Director. 2022-2024

II.Q. Research Fellowships, Prizes and Awards

1. College of Education, Dean's Impact Professor 2023-2026
2. IEEE Symposium on Visual Languages and Human-Centric Computing, Best Short Paper Award 2023
3. National Science Foundation CAREER Award 2022
4. ALISE/ProQuest Methodology Paper Award (with Nitzan Koren and Mega Subramaniam) 2022
5. National Academy of Education/Spencer Postdoctoral Fellowship 2020
6. National Academy of Education/Spencer Research Development Award 2019
7. National Academy of Education/Spencer Postdoctoral Fellowship Semifinalist 2018
8. Schloss Dagstuhl – NSF Support Grant for Junior Researchers Award 2019
9. Maryland Research Excellence Honoree 2019, 2020, 2022
10. SIGCHI Best Paper Honorable Mention 2018
11. First Place in the Graduate Student Research Competition at SIGCSE 2015
12. National Science Foundation Graduate Research Fellowship Program – Honorable Mention 2012
13. Northwestern Cognitive Science University Fellowship 2011

III. Teaching, Extension, Mentoring, and Advising

III.A. Courses Taught

1. TLPL 600: Learning with Technology
2. TLPL 703: Research on Technology in Education
3. TLPL 708A: Research Seminar in Technology, Learning & Leadership
4. TLPL 708C: Research Seminar on Computational Thinking
5. TLPL 708D: Research Seminar on Research-Practice Partnerships
6. INST 362: User-Centered Design
7. INST 371: Teaching & Learning in Information Studies

III.B. Teaching Innovations

III.B.1. Major Programs Established

1. *Integrated Technology in Education Post-Baccalaureate Certificate Program*. I was the lead designer of the curriculum for this program and shepherded the program through all levels of the approval process including Department, College, University, and State (Maryland Higher Education Commission) levels.

III.B.6. *Course or Curriculum Development*

1. *INST 371 Teaching & Learning in Information Studies (new).* This is a new course I designed that is intended to serve as an introduction to foundational ideas of teaching and learning for undergraduate students in the iSchool.

2. *TLPL 600 Teaching and Learning with Technology (revision)*. I redesigned this course as part of the Integrated Technology in Education Post-Baccalaureate Certificate program. This course provides a concrete, hands-on introduction to teaching and learning with technology.

3. *TLPL 602 Foundations of Technology in Education (new).* I created this course for the Integrated Technology in Education Post-Baccalaureate Certificate program. This survey course tackles both theoretical and practical dimensions of technology in education. It serves as an introduction to technology and the impact the 'digital revolution' is having and will have on education.

4. *TLPL 603 Data-driven Decision Making in Schools and Classrooms (new).* I created this course for the Integrated Technology in Education Post-Baccalaureate Certificate program and it is intended to equip educators to productively use the data that surrounds them to improve their teaching.

5. *TLPL 605 Social, Cultural, and Ethical Dimensions of Teaching and Learning with Technology (new)*. This course was created for the Integrated Technology in Education Post-Baccalaureate Certificate program and situates technology in the classroom within a larger social and cultural context. Students explore important social and cultural dimensions of technology, including equity, inclusion, ethical dimensions of technology, and questions of privacy and digital citizenship.

6. *TLPL 703 Research and Technology (revision).* This course prepares graduate students to conduct rigorous research at the intersection of technology and education.

7. *TLPL 708A Research Seminar in Technology, Learning & Leadership (new).* This course serves as a venue for sharing ideas, getting feedback on in-progress research, giving practice talks, pitching ideas for potential research directions, and, in general, serving as a space for Technology, Learning, and Leadership Ph.D. students to develop.

8. *TLPL 708D Research Seminar on Research-Practice Partnerships (new).* This course provides students with a comprehensive understanding of the theory, practice, and challenges associated with collaborative research between researchers and practitioners. As part of the course, students explore both theoretical and practical aspects of research-practice partnerships, including participating in a semester-long practicum that provides firsthand experience in conducting research within research-practice partnership.

9. *Scratch Encore (new K-12 curriculum).* This curriculum is designed to introduce upper-elementary learners (grades 5-8, ages 11-14) to foundational ideas of computer science in a culturally responsive way. It was co-designed with teachers and district leaders in the Chicago Public School district and has been downloaded over 1,900 times by educators from 15 countries since its completion. We have also trained 140 teachers on the Scratch Encore materials and another 400 teachers have gone through our virtual Scratch Encore professional development.

10. *Sphero.Math (new K-12 curriculum).* This curriculum integrates foundational computational thinking concepts into a 4th grade mathematics curriculum using the Sphero robot. The curriculum was co-designed with teachers and district leaders in the District of Columbia Public Schools. It is currently being taught in over 30 elementary schools.

III.C. Advising: Research or Clinical

III.C.1. Undergraduate

1. **Matthew Weinburg**, Computer Science Honors Thesis, College of Computer, Mathematical, and Natural Sciences. Defended: 2021.

III.C.2. Master's

Advisor and/or Committee Chair

1. **Carrie Lindeman**, Human-Computer Interaction, College of Information Studies. Defended: 2020.
2. **Alex Pugnali**, Technology, Learning & Leadership, College of Education. Defended: 2023.

Committee Member

3. **Melissa Bowman**, Library and Information Science, College of Information Studies. Anticipated Completion: 2023.
4. **Caroline Berger**, Human-Computer Interaction, College of Information Studies. Defended: 2023.
5. **Danyi Zang,** Human-Computer Interaction, College of Information Studies. Defended: 2024.
6. **Yi Hsieh Lin**, Human-Computer Interaction, College of Information Studies. Defended: 2024.

III.C.3. *Doctoral*

Advisor and/or Committee Chair

1. **Merijke Coenraad**, Technology, Learning & Leadership, College of Education. Defended: 2022. *Current Position: Learning Experience Designer, Digital Promise.*
2. **Janet Bih**, Technology, Learning & Leadership, College of Education. Defended: 2024.
3. **Yuhan (Jimmy) Lin**, Technology, Learning & Leadership, College of Education. Defended: 2024. *Current Position: Director of Computer Science Education, VEX Robotics*
4. **Emily Mae Kaplitz**, Computer Science, College of Computer, Mathematical, and Natural Sciences. Defended: 2024. *Current Position: Assistant Professor of Computer Science, Stockton University*.
5. **Xiaoxue Zhou**, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2025
6. **Jennifer Patterson**, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2028
7. **Annie Montgomery**, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2028

Committee Member

1. **Virginia Byrne**, Technology, Learning & Leadership, College of Education. Defended: 2020.
2. **Jeremiah Blanchard**, Computer Science, University of Florida. Defended: 2020.

3. **Seokbin Kang**, Computer Science, College of Computer, Mathematical, and Natural Sciences. Defended: 2021.
4. **Lautaro Cabrera**, Technology, Learning & Leadership, College of Education. Defended: 2021.
5. **Ethel Tshukudu**, Computer Science, University of Glasgow. Defended: 2022.
6. **Semi Yeom**, Language, Literacy, and Social Inquiry, College of Education. Defended: 2023.
7. **Daniel Pauw**, Information Studies, College of Information Studies. Defended: 2023.
8. **Kellyn Farlow Morris**, Mathematics & Science Education, College of Education. Anticipated Completion: 2025.
9. **Majeed Kazemi**, Computer Science, University of Toronto. Anticipated Completion: 2024.
10. **Eric Newburger**, Information Studies, College of Information Studies. Defended: 2023.
11. **Phillip Scott Moses,** Technology, Learning & Leadership, College of Education. Defended: 2024.
12. **Kelsey Fulton, Computer Science,** Computer Science, College of Computer, Mathematical, and Natural Sciences. Anticipated Completion: 2025. *Dean's Representative*.
13. **Laila El Hamamsy**, School of Robotics, École Polytechnique Fédérale de Lausanne. Defended: 2023.
14. **Utkarsh Dwivedi**, Information Studies, College of Information Studies. Defended: 2024.
15. **Peter Moon**, Mathematics & Science Education, College of Education. Defended: 2024.
16. **Yuexi (Tracy) Chen**, Computer Science, College of Computer, Mathematical, and Natural Sciences. Anticipated Completion: 2025.
17. **Karmen Hice**, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2026.
18. **Adelmo Antonio da Silva Eloy**. Electrical Engineering, Polytechnic School, Universidade de São Paulo, Brazil. Anticipated Completion: 2026.

III.C.4. *Post-doctoral*

1. **Anthony Pellicone**, Teaching & Learning, Policy & Leadership. College of Education. 2019 – 2022
2. **Rotem Israel-Fishelson**, Teaching & Learning, Policy & Leadership, College of Education. 2022 – present

III.D. Mentorship

III.D.1. *Faculty*

1. Sarah McGrew, Teaching & Learning, Policy & Leadership. College of Education. 2023 – present

III.D.2. *Other*

1. Anni Reinking, Vice President, CSEdResearch.org. William T. Grant Foundation Scholars Program Applicant, Mentor. 2022
2. Virginia Byrne, Assistant Professor, Morgan State University. Institute for Education Studies, Early Career Development and Mentoring Program for Faculty at Minority Serving Institutions. Mentor. 2023 - Present

III.I Teaching Awards

1. University of Maryland Graduate Faculty Mentor of the Year Award 2022

IV. Service and Outreach

IV.A. Editorships, Editorial Boards, and Reviewing Activities

IV.A.2. Editorial Boards

1. *Computer Science Education*. Taylor & Francis. Associate Editor. 2018-Present
2. *International Journal of Child-Computer Interaction*. Elsevier. Associate Editor. 2022-Present
3. *EngageCSEdu*. NCWIT. Associate Editor. 2019-2022

IV.A.3. Reviewing Activities for Journals and Presses (Selection)

1. *ACM Inroads* 2019, 2023
2. *ACM Transactions on Human-Computer Interaction* 2018, 2020
3. *ACM Transactions on Computing Education* 2017 - 2023
4. *British Journal of Educational Technology* 2020
5. *Canadian Journal of Learning Technologies* 2019
6. *Computers and Education* 2017, 2019-21
7. *Computer Science Education* 2018-19, 2021, 2025
8. *Computing Surveys* 2021
9. *Humanities and Social Sciences Communications* 2023
10. *IEEE Access* 2019
11. *Information and Learning Science* 2022
12. *Interactive Learning Environments* 2018
13. *International Journal of Child-Computer Interaction* 2017, 2020
14. *International Journal of Science and Mathematics Education* 2024
15. *Journal of Engineering Education* 2020
16. *Journal of Pre-College Engineering Education Research* 2018
17. *Journal of Research in Mathematics Education* 2022
18. *Journal of Science Education and Technology* 2018-21
19. *Journal of Systems and Software* 2020
20. *Journal of the Learning Sciences* 2023
21. *Mathematical Thinking and Learning* 2020
22. *MIT Press* 2019
23. *Review of Educational Research* 2020, 2024
24. *Teachers College Record* 2019

IV.A.4. Reviewing Activities for Agencies and Foundations

1. Israel Science Foundation 2021
2. National Science Foundation EHR/EDU 2018, 2020, 2023-24
3. National Science Foundation EHR/EDU/CISE 2018
4. National Science Foundation CISE 2022
5. Singapore National Institute of Education, Education Research Funding Program 2019
6. Spencer Foundation 2024
7. Social Sciences and Humanities Research Council of Canada 2022, 2024
8. Swiss National Science Foundation 2019

IV.A.5. Reviewing Activities for Conferences (Selection)

1. *ACM CHI Conference on Human Factors in Computing Systems* 2019-21,24
2. *ACM CHI Play* 2019
3. *ACM Interaction Design and Children* 2018-21,24
4. *ACM International Computing Education Research Conference* 2020-25
5. *ACM Technical Symposium on Computer Science Education* 2017-23
6. *ACM Tangible and Embodied Interaction* 2019
7. ACM Symposium on User Interface Software and Technology 2020
8. *American Education Researchers Association Annual Conference* 2014-22
9. Computational Thinking Education 2018-22
10. FabLearn 2015, 2020
11. Games+Learning+Society 2015
12. *International Society for the Learning Sciences* 2018, 2020-22

IV.B. Committees, Professional & Campus Service

IV.B.1. Campus Service – Department of Teaching & Learning, Policy & Leadership

1. *Merit Review Committee* 2019-20
2. *Technology, Learning & Leadership Faculty Search Committee* 2018-19
3. *Technology, Learning & Leadership Ph.D. program Coordinator* 2020 - present
4. *Division 1 coordinator* 2022 - present
5. *Department Chair Search Committee* 2021-22
6. *Technology, Learning & Leadership Faculty Search Committee* Chair 2023-24
7. *Technology, Learning & Leadership Opportunity Hire Committee* Chair 2024

IV.B.2. Campus Service – College

1. *Diversity Committee*. College of Information Studies 2018-2020
2. *Human-Computer Interaction Master's Committee*. College of Information Studies 2017-18
3. *Senator*. College of Education 2018-2020
4. *Senate Steering Committee*. College of Education 2019-2020
5. *Computing Education Committee*. Chair. College of Information Studies 2021-present
6. *Support Program for Advancing Research and Collaboration (SPARC) Application Review Committee*. College of Education 2021-22

IV.B.8. Leadership Roles in Meetings and Conferences

1. Program Committee. *International Conference for the Learning Sciences* 2018, 2023-24
2. Program Committee. *Blocks and Beyond* 2017
3. Program Committee. *SIGCSE Technical Symposium on Computer Science Education* 2017-present
4. Doctoral Consortium Mentor. *ACM International Computing Education Researchers Conference* 2018, 2022
5. Organizing Committee. *Blocks and Beyond* 2019
6. Program Committee. *International Conference on Computational Thinking in Education* 2017-2020, 2022
7. Full Paper Co-Chair. *FabLearn* 2020
8. Program Committee. *ACM International Computing Education Researchers Conference* 2021-23
9. Associate Program Chair. *ACM Interaction Design and Children* (IDC) 2022
10. Works-in-Progress Co-Chair. *ACM Interaction Design and Children* (IDC) 2023

11. Program Committee. Learning, Design, & Technology Symposium 2023
12. Program Committee. Conference for Research on Equity and Sustained Participation in Engineering (RESPECT) 2022-23
13. Full Paper Co-Chair. *Constructionism* 2023

IV.C. External Service and Consulting

IV.C.1. Community Engagements, Local, State, National, International

1. *OECD Platform for Innovative Assessment (PILA)*. Consultant. 2020-Present
   For this project, I provide expert input on the design of a new computational thinking assessment platform. This platform will be used around the world to evaluate students' computational thinking abilities and serve as a mechanism to evaluate national levels of computational thinking proficiency.
2. *Maryland Center for Computing Education*. Advisory Board. 2018-Present
   The Maryland Center for Computing Education is the organization most responsible for advancing computer science in K-12 education in the state of Maryland. This includes working closely with the state department of education on computer science-related matters, administering state-funded grant programs, and addressing the state-wide shortage of computer science teachers.
3. OECD *PISA 2021 Mathematics Framework*. Extended Expert Group Member. 2018-19.
   As part of the 2021 Mathematics assessment re-write, the creators of this assessment decided to include questions on the topic of computational thinking. I was invited to serve as part of the Extended Expert Group to provide feedback and guidance on how computational thinking was being assessed. The PISA Mathematics exam is administered every three years and taken by tens of thousands of students around the world.
4. *K-12 Computer Science Framework*. Contributing Author. 2015-16.
   The K-12 Computer Science Framework was a collaborative writing effort designed to define the scope and sequence of computer science across K-12 grades. The resulting document has played a foundational role in shaping computer science standards across the United States and around the world. I was one of four primary authors of the *Impacts of Computing* section.

IV.E. Media Contributions

IV.E.5. Print Media

1. Project highlighted in Moore, H. (April 13, 2022). $1M NSF Grant Supports Project to Create Data-Literate Citizens. Maryland Today.
2. Research Featured in Natanson, H., Stein, P., & George, D. S. (January 2, 2021). Treehouse teaching and laundry art: Educators find creative ways to reach kids. The Washington Post.
3. Quoted in Goldstein, D. (August 10, 2019). How a State Plans to Turn Coal Country Into Coding Country. The New York Times.
4. Interviewed by Harold, B. (May 2, 2017). Emerging Research on K-12 Computer Science Education: 6 Trends to Watch. Education Week.