Curriculum Vitae

I. Personal Information

I.A. David Weintrop
2226H Benjamin Building
3942 Campus Drive
College Park, MD 20742
weintrop@umd.edu
http://go.umd.edu/weintrop

I.B. Academic Appointments at UMD
Assistant Professor
Department of Teaching and Learning, Policy and Leadership
College of Education
College of Information Sciences
2017-Present

I.C. Other Employment
Software Developer. Backstop Solutions, 2008-2010
Software Developer. Incisent Technologies, 2006-2008

I.D. Educational Background
PhD, Learning Sciences, School of Education and Social Policy, Northwestern University, 2016

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

I.E. Professional Certifications, Licenses, and Memberships
1. *American Education Researcher Association*. 2013-Present.
2. *Association of Computing Machinery.* 2013 – Present.
3. *International Society of the Learning Sciences.* 2014 – Present.

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

II.A. Chapters

II.A.1. Books

1. **Weintrop, D.**, Rutstein, D., Bienkowski, M., & McGee, S. (Under Review). Assessment of Computational Thinking. In Yadav, A. & Berthelsen, U (Eds), Computational Thinking in Compulsory Education: A Pedagogical Perspective. Routledge.
2. **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.
3. **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.B. Refereed Journals

II.B.1. Refereed Journal Articles

1. Tissenbaum, M., **Weintrop, D.**, Holbert, N., & Clegg, T. (Accepted). The Case for Alternative Endpoints in Computing Education. *British Journal of Educational Technology.*
2. **Weintrop, D.**, Morehouse, S.* & Subramaniam, M. (2021). Assessing Computational Thinking in Libraries. *Computer Science Education*.
3. 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*.
4. 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.
5. **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.
6. **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.
7. **Weintrop, D.** (2019). Block-based Programming in Computer Science Education. Communications of the ACM, 62(8), 22–25.
8. **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.
9. **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.
10. 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.
11. **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.
12. **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.
13. 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.
14. **Weintrop, D.** & Wilensky, U. (2016). Playing by programming: Making gameplay a programming activity. Educational Technology, 56(3), 36–41.
15. **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.
16. **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.
17. **Weintrop, D.** & Wilensky, U. (2014). Situating programming abstractions in a program-to-play game. Informatics in Education, 13(2), 307-321.

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* Denotes student author

II.B.2. Refereed Journal Articles Under Review

1. Coenraad, M.*, **Weintrop, D**., Eatinger, D., Palmer, J., & Franklin, D. (Under Review). Participatory Design as a Means to Identify Students' Spheres of Influence for a Culturally Relevant Computing Curriculum.
2. Coenraad, M.*, Palmer, J., Eatinger, D., Weintrop, D. & Franklin, D. (Under Review) Using Participatory Design to Integrate Stakeholder Voices in the Creation of a Culturally Relevant Computing Curriculum
3. Weintrop, D., Subramaniam, M., Morehouse, S.* & Koren, N*. (Under Review). The State of Computational Thinking in Libraries.

II.C. Published Conference Proceedings

II.C.1. Refereed Conference Proceedings[♦]

1. Coenraad, M.*, Palmer, J., **Weintrop, D.**, Eatinger, D., Crenshaw, Z.*, Pham, H.*, & Franklin, D. (Accepted). *"Complete nonsense on a beach": The Effects of Providing Starter Projects in Open-Ended Scratch Activities.* Paper to be presented ACM Technical Symposium on Computer Science Education.
2. Coenraad, M. *, Bih, J. * & **Weintrop. D.** (Accepted). *Gusanos y Espheros: Computing with Youth in Rural El Salvador*. Paper to be presented ACM Technical Symposium on Computer Science Education.
3. 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.
4. 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%]
5. 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%]
6. 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%]

♦ In the field of Computer Science, 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%). Conference proceeding publications rival top journals in their selectivity, citations, and influence. Within the fields of human-computer interaction and computing education proceedings publications are considered on par with publications in a journal. Acceptance rates are shown in [ ]'s where available.

7. 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%]
8. **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%]
9. 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.
10. **Weintrop, D.,** Holbert, N. & Tissenbaum, M. (2020). Considering Alternative Endpoints: An Exploration in the Space of Computing Educations. Paper to be published in the Proceedings of the Constructionism 2020 Conference. Dublin, Ireland.
11. 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%]
12. 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%]
13. 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%]
14. **Weintrop, D**., Killen, H.*, Munzar, T.*, & Franke, B. (2019). Block-based Comprehension: Exploring and Explaining Student Outcomes from a Read-only Block-based Exam. In Proceedings of the 50th ACM Technical Symposium on Computer Science Education (pp. 1218–1224). ACM. [32%]
15. 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%]

[#] Denotes teacher or school district author

16. 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%]
17. 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.
18. **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%]
19. **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)
20. **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%]
21. 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.
22. **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%]
23. 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%]
24. **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%]
25. **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. [35%]

26. **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).
27. 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%]
28. 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%]
29. 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.
30. 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%]
31. **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%]
32. **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%]
33. 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%]
34. **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%]
35. **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%]
36. **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%]
37. **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%]
38. **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%]

39. **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%]
40. **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.
41. 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%]
42. 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%]
43. **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.
44. **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.
45. **Weintrop, D.** & Wilensky, U. (2014). Situating programming abstractions in a program-to-play game. Proceedings of the Constructionism 2014 Conference. Vienna, Austria.
46. **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%]
47. **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%]
48. **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.
49. **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.D. Conferences, Workshops, and Talks

II.D.1. Keynotes

1. 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.
2. 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.
3. 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.

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

II.D.2. Invited Talks

1. The Role of Block-based Programming in Computer Science Education. Invited Talk. Raspberry Pi Computing Education Research Seminar. Virtual. 2020.
2. Defining, Designing & Documenting Computational Thinking in K-12 Education. Invited Talk. Worcester Polytechnic Institute. Virtual. 2020.
3. 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.
4. 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
5. 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.
6. 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.
7. 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.
8. Computer Science at a Crossroads: Understanding Introductory Programming Environments. Google Chicago. Chicago, IL. 2016.
9. Computer Science at a Crossroads: Understanding Introductory Programming Environments. Northwestern University Computer Science Education Day. Evanston, IL. 2016.
10. Modality Matters: Understanding the Design of Introductory Programming Environments. Code.org. Seattle, WA. 2016.
11. Bringing Computational Thinking into Math and Science Classrooms. University of Chicago Department of Computer Science. Chicago, IL. 2016.
12. Defining Computational Thinking in High School Math and Science. K-12 Computer Science Framework Thought Leaders workshop. Chicago, IL. 2015.
13. Blocks, Text, and the Space Between: The Role of Representation in Novice Programming Environments. Massachusetts Institute of Technology. Cambridge, MA. 2015.
14. Modality Matters: Teaching the Next Generation of Computer Scientists. DePaul University. Chicago, IL. 2015.
15. Teaching Computer Science: Where We Are, What We Know, and Where We Might be Heading. Google Chicago. Chicago, IL. 2014.

II.D.3. Refereed Presentations

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

2. Coenraad, M.*, Beck, K# & **Weintrop, D**. (2021) Supporting Equitable Online and In-Person Scratch Teaching. Session to be presented at the Computer Science Teachers Association 2021 Annual Meeting. Virtual Conference.
3. Bih, J.*, **Weintrop, D.,** Williams-Pierce, C., Moon, P.*, 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. Conference to be held virtually.
4. 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. Conference to be held virtually.
5. 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. Conference to be held virtually.
6. 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. Conference to be held virtually.
7. 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.
8. 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.
9. Coenraad, M.*, Palmer, J., Franklin, D., and **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.
10. **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.
11. 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.
12. 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.
13. 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.

14. **Weintrop, D**., Hansen, A, Harlow, D. & Franklin, D. (2018). Bringing Computer Science into Elementary School Classrooms. Paper presented at AERA 2018. New York, NY, USA
15. **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 AERA 2018. New York, NY, USA
16. **Weintrop, D**., Bain, C. & Wilensky, U. (2017). Blocking Progress? Transitioning from Blocks-based to Text-based Programming. Paper presented at AERA 2017. San Antonio, TX, USA.
17. Wilensky, U. & **Weintrop, D**. (2017). Constructionist Approaches for Computational Thinking in Math and Science Classrooms. Paper presented at AERA 2017. San Antonio, TX, USA.
18. Holbert, N. & **Weintrop, D**. (2017). Exploring why novice programmers switch between text and blocks in a dual-modality coding environment. Paper presented at AERA 2017. San Antonio, TX, USA.
19. **Weintrop, D.** & Wilensky, U. (2016) Cognitive affordances of blocks-based programming in a two-dimensional construction space. Presented at the 46th Annual Meeting of the Jean Piaget Society Annual Meeting, Chicago, IL, USA.
20. **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.
21. **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.
22. **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.
23. **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.
24. 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.
25. **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.
26. **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.
27. **Weintrop, D**., Hjorth, A, & Wilensky, U. (2013). Know Your Network: Learning Social Networks Analysis Through Meaningful Manipulation. InfoSocial 2013. Evanston, IL, USA.

28. 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.D.4. Refereed Posters

1. **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. Conference to be held virtually.
2. 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.
3. 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.
4. Ketelhut, D.J., Coenraad, M.*, **Weintrop, D.,** Cukier, M., Plane, P., 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.
5. Coenraad, M.*, Ketelhut, D.J., Cukier, M., Plane, P. & **Weintrop, D**. (2019). Trends in Cybersecurity Focused Games. Poster presented at the 13th European Conference on Game-based Learning. Odense, Denmark.
6. **Weintrop, D**. & Wilensky. U. (2017). Blocks-based Programming and Preparation for Future Computer Science Learning. Poster presented at AERA 2017. San Antonio, TX, USA.
7. 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 AERA 2017. San Antonio, TX, USA.
8. 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.
9. **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.D.5. Non-Refereed Presentations

1. 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.

2. Coenraad, M*., Kuriakos, N*., Ketelhutt, 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.
3. **Weintrop, D**., Bih, J.*, Walton, M.* & Walkoe, J. 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.
4. **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.
5. 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.D.6. 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.D.7. Workshops

1. 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.
2. Brady, C, **Weintrop, D**., & Bain, C. "Hacking the Conference Badge". Workshop at the 2nd Annual International Conference on Computational Social Science. Evanston, Illinois.
3. **Weintrop, D**., Hjorth, A., & Wilensky, U. "NetLogo Web: Bringing Turtles to the Cloud". Workshop at Constructionism 2016. Bangkok, Thailand. February 2016
4. Hjorth, A., **Weintrop, D**., & Wilensky, U. "LevelSpace: Constructing Models and Explanations across Levels". Workshop at Constructionism 2016. Bangkok, Thailand.
5. **Weintrop, D**., Hjorth, A., & Wilensky, U. "Know Your Network: Learning Social Networks Analysis Through Meaningful Manipulation with NetLogo". Workshop at Constructionism 2014. Vienna, Austria.
6. Johnson, E., Hadzikadic, M., **Weintrop, D**., & Holbert, N. "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.
7. Stonedahl, F., **Weintrop, D**., Bumbacher, E., Deustch, A, & Shannon, C. "NetLogo: Teaching with Turtles and Crossing Curricular Boundaries". Workshop at 2013 ACM technical symposium on Computer science education. Denver, CO.
8. Hjorth, A., & **Weintrop, D.** "NetLogo Workshop". Workshop at Constructionism 2012. Athens, Greece.

II.E. Completed Creative Works and Scholarship

II.E.1. Software and Applications

1. **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
2. **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
3. **Weintrop, D.** (2014). Javaseer. Evanston, IL: Center for Connected Learning and Computer-Based Modeling, Northwestern University. https://github.com/dweintrop/javaseer
4. **Weintrop, D**. (2014). BlueJ Chirper. Evanston, IL: Center for Connected Learning and Computer-Based Modeling, Northwestern University. https://github.com/dweintrop/BlueJChirper
5. **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
6. **Weintrop, D**. RoboBuilder. (2011) Evanston, IL: Center for Connected Learning and Computer-Based Modeling, Northwestern University. http://ccl.northwestern.edu/roboBuilder.

II.F. Sponsored Research and Programs

II.F.1. Grants

1. *INFACT: Include Neurodiversity in Foundational and Applied Computational Thinking*. Department of Education: EIR #U411C190179. **$3,175,344**. 2019-2023. **Co-Principal Investigator**. (Principal Investigator: Jodi Asbell-Clark, Other Co-Principal Investigators: Quinn Burke, Fengfeng Ke, Shuchi Grover, Maya Israel.)
2. *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).
3. *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.)
4. *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.)
5. *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.)
6. *Increasing the Interest of Students from Underrepresented Populations for Cybersecurity*. LTS DO55: Academic Gaming Research. **$340,960**. 2018-2023. **Co-Principal Investigator**. (Principal Investigator: Michel Cukier; Other Co-Principal Investigators: Jan Plane, Diane Jass Ketelhut.)
7. Scratch Encore - Equity via a Flexible, Advanced Scratch Curriculum for Diverse Students and Teachers in Upper Elementary. National Science Foundation CS4All – CNS #1738758. **$1,148,511**. 2018-2020. **Co-Principal Investigator**.

(Principal Investigator: Diana Franklin; Other Co-Principal Investigators: Andy Isaacs, Brenda Wilkerson).

8. *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.G. Gifts, and Funded Research not administered by ORA

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

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

II.H. Research Fellowships, Prizes and Awards

1. National Academy of Education/Spencer Postdoctoral Fellowship (2020)
2. National Academy of Education/Spencer Research Development Award (2019)
3. Schloss Dagstuhl – NSF Support Grant for Junior Researchers Award (2019)
4. Maryland Research Excellence Honoree (2019 & 2020)
5. SIGCHI Best Paper Honorable Mention (2018)
6. National Academy of Education/Spencer Postdoctoral Fellowship Semifinalist (2018)
7. 1st Place in the Graduate Student Research Competition at SIGCSE 2015 (2015)
8. NSF Graduate Research Fellowship Program – Honorable Mention (2012)
9. Northwestern Cognitive Science University Fellowship (2010 – 2011)

II.I. Advising

II.I.1. Master's

1. Carrie Lindeman, HCI Masters, iSchool. Defended 2020.

II.I.2. *Current Doctoral Advisees*

1. Merijke Coenraad, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2022
2. Noel Kuriakos, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2023
3. Janet Bih, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2023
4. Jimmy Lin, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2023

II.I.3. *Doctoral Committee Member*

1. Semi Yeom, Language, Literacy, and Social Inquiry, College of Education. Anticipated Completion: 2022
2. Kellyn Farlow Morris, Mathematics & Science Education, College of Education. Anticipated Completion: 2022
3. Seokbin Kang, Computer Science, College of Computer, Mathematical, and Natural Sciences. Anticipated Completion: 2021
4. Lautaro Cabrera, Technology, Learning & Leadership, College of Education. Anticipated Completion: 2021
5. Jeremiah Blanchard, Computer Science, University of Florida. Defended: 2020
6. Virginia Byrne, Technology, Learning & Leadership, College of Education. Defended: 2020

II.I.4. Post-doctoral

1. Anthony Pellicone, Teaching & Learning, Policy & Leadership. 5/2019 – present

III. Service and Outreach

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

III.A.1. Editorial Boards

1. *Computer Science Education*. Taylor & Francis. Associate Editor. 2018-Present.
2. *EngageCSEdu*. NCWIT. Associate Editor. 2019-Present.

III.A.2. Reviewing Activities for Journals and Presses (Selection)

1. *ACM Inroads*. 2019.
2. *ACM Transactions on Human-Computer Interaction*. 2018, 2020.
3. *ACM Transactions on Computing Education*. 2017 - 2021.
4. *British Journal of Educational Technology*. 2020.
5. *Canadian Journal of Learning Technologies.* 2019.
6. *Computers and Education*. 2017, 2019-20.
7. *Computer Science Education.* 2018, 2019.
8. *IEEE Access*. 2019
9. *Interactive Learning Environments*. 2018.
10. *International Journal of Child-Computer Interaction*. 2017, 2020.
11. *Journal of Engineering Education.* 2020.
12. *Journal of Science Education and Technology.* 2018-20.
13. *Journal of Systems and Software*. 2020.
14. *Journal of Pre-College Engineering Education Research*. 2018.
15. *Mathematical Thinking and Learning*. 2020.
16. *MIT Press*. 2019.
17. *Review of Educational Research. 2020.*
18. *Teachers College Record*. 2019.

III.A.3. Reviewing Activities for Agencies and Foundations

1. National Science Foundation EHR, 2020.
2. National Science Foundation EHR/CISE, 2018.
3. National Science Foundation EHR, 2018.
4. Singapore National Institute of Education (NIE) Education Research Funding Program (ERFP), 2019.
5. Swiss National Science Foundation, 2019.

III.A.4. Reviewing Activities for Conferences

1. *ACM CHI Conference on Human Factors in Computing Systems*. 2019-21.
2. *ACM CHI Play*. 2019.
3. *ACM Interaction Design and Children*. 2018-20.
4. *ACM International Computing Education Research Conference. 2020.*
5. *ACM Tangible and Embodied Interaction.* 2019.
6. ACM Symposium on User Interface Software and Technology. 2020.
7. *American Education Researchers Association Annual Conference*. 2014-21.
8. Computational Thinking Education. 2018-21.
9. FabLearn. 2015, 2020.
10. Games+Learning+Society

11. *International Conference for the Learning Sciences*. 2018, 2020.

III.B. Committees, Professional & Campus Service

III.B.1. Leadership Roles in Meetings and Conferences

1. Program Committee. *International Conference for the Learning Sciences*. 2018.
2. Program Committee. *Blocks and Beyond*. 2017.
3. Program Committee. *SIGCSE Technical Symposium on Computer Science Education*. 2017-20.
4. Doctoral Consortium Mentor. *ACM International Computing Education Researchers Conference*. 2018.
5. Organizing Committee. *Blocks and Beyond*. 2019.
6. Program Committee. *International Conference on Computational Thinking in Education.* 2017-2020.
7. Full Paper co-Chair. *FabLearn*. 2020.

III.C. External Service and Consulting

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

1. OECD Platform for Innovative Assessment (PILA) Consultant. 2020-Present
2. *Maryland Center for Computing Education*. Advisory Board. 2018-Present
3. *PISA 2021 Mathematics Framework*. Extended Expert Group Member. 2018-19.
4. *K-12 Computer Science Framework*. Contributing Author. 2015-16.