MICHAEL S. HORN

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APPOINTMENTS

2016 –	**Associate Professor, Northwestern University** Learning Sciences, School of Education and Social Policy Computer Science, McCormick School of Engineering and Applied Science Coordinator, Learning Sciences Ph.D. Program Co-Coordinator, Joint PhD Program in Computer Science and Learning Sciences	Evanston, IL
2010 – 2016	**Assistant Professor, Northwestern University**	Evanston, IL

EDUCATION

2003 – 2009	**Tufts University** Ph.D. Computer Science Advisor: Robert J.K. Jacob	Medford, MA
1993 – 1997	**Brown University** Bachelor of Science in Computer Science	Providence

RESEARCH & PROFESSIONAL EXPERIENCE

2011 – 2013	**Field Museum** *Research Associate* Department of Zoology, division of Fishes	Chicago
2003 – 2009	**Tufts University, Department of Computer Science** *Research Assistant* Created the Tern tangible programming language.	Medford
2008 – 2009	**Harvard University, Initiative in Innovative Computing** *Fellow* Created multi-touch tabletop applications for science learning including an exhibit for the Harvard Museum of Natural History.	Cambridge
2007 – 2009	**Museum of Science, Boston** *Exhibit Development Intern* Created *Robot Park,* a tangible programming and robotics exhibit.	Boston
2006 & 2007	**iRobot Corporation** *Software Engineer* Developed control systems for prototype commercial robots.	Bedford
1998 – 2003	**Classroom Connect** *Senior Software Engineer & Project Lead* Developed web-based K-12 curriculum products.	San Francisco
1997 – 1998	**Actioneer, Inc.** *Software Engineer* Developed productivity applications for handheld devices.	San Francisco

ACADEMIC AWARDS

- Best Paper Honorable Mention Award—ACM CHI Conference (2018)
- First Place Showcase Award—Games Learning, and Society Conference (2016)
- Best Learning Game Nominee—Games for Change Conference (2016)
- Honorable Mention Best Late Breaking Work Paper—ACM CHI Conference (2016)
- National Science Foundation CAREER Award (2015)
- Best Paper Award—ACM CHI Conference (2015)
- Best Paper Award—Interaction Design and Children Conference (2014)
- Best Short Paper Award—Interaction Design and Children Conference (2014)
- Second Place Showcase Award—Games, Learning, and Society Conference (2014)
- Best Design Paper Award—Computer Supported Collaborative Learning Conference (2013)
- Best Paper Nomination—Computer Supported Collaborative Learning Conference (2013)
- Best Workshop Paper—Interaction Design and Children Conference (2013)
- Award for Outstanding Graduate Student Researcher, Tufts University (2009)
- GK-12 Fellow—National Science Foundation (2005-2007)
- Award for Outstanding Contribution to Engineering Education, Tufts University (Spring 2005)
- Gaston Scholarship for Academic Excellence in Computer Science, Brown University (Spring 1997)

GRANTS

$2,637,054. Wilensky, U. & Horn, M. *"CT-ifying" the High-School Science Curriculum to Broaden Participation in Computational Science.* National Science Foundation, 2018-2021.

$999,865. Horn, M., Freeman, J., Magerko, B., Pinkard, N., Pratt, A. *CSforAll: Broadening Participation in Computer Science Through Music, Dance, and Coding Across Learning Spaces*. National Science Foundation, 2018-2021

$474,800. Magerko, B., Freeman, J., Horn, M. *Collaborative Research: Mixing Learning Experiences for Computer Programming Across Museums, Classrooms, and the Home Using Computational Music.* National Science Foundation, 2016-2020.

$608,426. Horn, M. *CAREER: Blocks, Stickers, and Puzzles: Rethinking Computational Literacy Experiences in Informal Environments*. National Science Foundation, 2015-2020.

$2,502,818. Wilensky, U., Jona, K., & Horn, M. *DD: Integrating Computational Thinking in High School Science and Mathematics*. National Science Foundation. 2016-2019.

$218,268. McGee, S., Horn, M., Hoogstraten, J., Matcuk, M. *Collaborative Research: Designing Digital Rails to Foster Scientific Curiosity around Museum Collections*. 2015-2016.

$996,985. Horn, M., Wilensky, U., Orton, K., & Jona, K. *Broadening Participation in a Computational Future: Casting a Wide Net*. Spencer Foundation, Lyle Spencer Award, 2015-2018.

$599,849. Orton, K., Horn, M., Jona, K., & Wilensky, U. *Computational Thinking in STEM: A Whole-School Model for Broadening Participation and Education in Computing*. National Science Foundation, 2014-2016.

$687,043. Wilensky, U.J. & Horn, M.S. *Learning evolution through model-based inquiry: Supporting agent-based modeling in STEM classrooms*. National Science Foundation, 2012-2015.

$998,711. Jona, K., Horn, M.S., Kalogera, V., Trouille, L., & Wilensky, U. *Casting a Wide Net: Applied Computational Thinking*. National Science Foundation, 2011-2014.

$539,799. Horn, M.S. & Stevens, R. *Augmenting Household Technologies for Learning and Whole-family participation.* National Science Foundation, 2011-2015.

$2,312,149. Shen, C., Diamond, J., Evans, E., & Horn, M. *Life on Earth*. National Science Foundation, 2010-2013.

$42,732. Horn, M.S. & Stevens, R. *Household resource consumption and learning: Design and research*. Initiative for Sustainability and Energy at Northwestern, Faculty Booster Grant. 2010-2011.

$10,000. Horn, M.S. *Interactive Sustainable Fishing Exhibit*. Dr. Scholl Foundation, 2015.

MUSEUM EXHIBITS, GAMES, AND BROADER IMPACTS

2007 – 2012	**Robot Park Exhibit** Tangible computer programming and robotics	Museum of Science, Boston
2012 –	**Build-a-Tree Exhibit** Evolution puzzle game	California Academy of Sciences, San Francisco Musée national d'histoire naturelle, Luxembourg
2017 –	**Frog Pond Exhibit** Tabletop computer programming	Computer History Museum, Silicon Valley
2012 –	**Deep Tree Exhibit** A deep zoom into the tree of life	Field Museum Montreal Science Center California Academy of Sciences Oxford Museum of Natural History Harvard Museum of Natural History University of Nebraska State Museum Museum of Natural History, Mexico City Natural History Museum of Utah
2015 –	**PBS NOVA Lab** Build the tree of life Nominated Best Learning Game, Games for Change, 2016 http://www.pbs.org/wgbh/nova/labs	WGBH, Boston
2016 –	**OSMO Coding** Tangible programming game Created in collaboration with Tangible Play Best Tech Toys, 2016—Wall Street Journal, Amazon.com https://www.playosmo.com/en/coding/	
2014 –	**Turn Up the Heat** The world's first and only thermostat board game! 2nd Place Showcase Award, GLS Conference (2014)	
2016 –	**Invasion of the Energy Monsters** A spooky game about saving energy. 1st Place Showcase Award, GLS Conference (2016)	
2018 –	**TunePad** Learn Python programming through music composition https://tunepad.live	

JOURNAL ARTICLES

Horn, M.S. (2018). Tangible Interaction and Cultural Forms: Supporting computer-based learning in informal environments. *Journal of the Learning* Sciences, 27(4), 1-34.

Horn, M., Phillips, B., Evans, E.M., Block, F., Diamond, J., Shen, C. (2016). Visualizing biological data in museums: Visitor learning at an interactive tree of life exhibit. *Journal of Research in Science Teaching, 53*(6), 895-918.

Weintrop, D., Beheshti, E., Horn, M., Orton, K., Jona, K., Trouille, L., & Wilensky, U. (2016). Defining Computational Thinking for Math and Science Classrooms. *Journal of Science Education and Technology*, 1-21.

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

Horn, M., Stevens, R., Leong, Z.A., & Greenberg, M. (2015). Kids and thermostats: Understanding children's involvement with household energy systems. *Journal of Child-Computer Interaction* 3-4, 14-22.

Davis, P., Horn, M.S., Block, F., Phillips, B., Evans, E.M., Diamond, J., & Shen, C. (2015). "Whoa! We're going deep in the trees!": Patterns of collaboration around an interactive information visualization exhibit. *International Journal of Computer-Supported Collaborative Learning, 10*, 53-76.

Wilensky, U., Brady, C., and Horn, M.S. (2014). Fostering computational literacy in science classrooms. *Communications of the ACM, 57*(8), 17-21.

Davis, P., Horn, M.S., & Sherin, B.L. (2013). The right kind of wrong: A knowledge-in-pieces approach to science learning in museums. *Curator, 56*(1), 31-46.

Block, F., Horn, M.S., Phillips, B.C., Diamond, J., Evans, E.M., & Shen, C. (2012). DeepTree Exhibit: Visualizing the tree of life to facilitate informal learning. *IEEE Transaction on Visualization & Computer Graphics, 18*(12), 2789-2798.

Horn, M.S., Crouser, R.J., Bers, M.U. (2012). Tangible interaction and learning: The case for a hybrid approach, *Personal and Ubiquitous Computing, 16*(4), 379-389.

Shaer, O., Horn, M.S., & Jacob, R.J.K. (2009). Tangible user interface laboratory: Teaching tangible interaction design in practice, *AI for Engineering Design, Analysis, and Manufacturing, 23*, 251-261.

ARCHIVAL CONFERENCE PAPERS*

Leong, Z.A., Horn, M., Thaniel, L., & Meier, E. (2018). Inspiring AWE: Transforming Clinic Waiting Rooms into Informal Learning Environments with Active Waiting Education. *SIGCHI Conference on Human Factors in Computing Systems (CHI'18)*, 1668-1679. ACM.

Roberts, J., Banerjee, A., Hong, A., McGee, S., Horn, M., & Matcuk, M. (2018). Digital Exhibit Labels in Museums: Promoting Visitor Engagement with Cultural Artifacts. *SIGCHI Conference on Human Factors in Computing Systems (CHI'18)*, 4758-4770. ACM.
Best Paper Honorable Mention

Villanosa, K. & Horn, M. (2018). Words mean things: How museum workers' discursive practices position the diverse communities they seek to engage. *International Conference of the Learning Sciences.*

* In the field of Computer Science, archival conference proceedings such as the Association for Computing Machinery's (ACM) CHI, IDC, TEI, ITS, and UIST are among the top publication venues. These are peer-reviewed publications, with a multi-stage revision process, and low acceptance rates (CHI's acceptance rate has ranged from 15-25%). Conference proceeding publications rival top journals in the field in their selectivity, citations, and influence. Thus, within the field of human-computer interaction, proceedings publications are considered on par with publications in a journal. For rankings see: https://scholar.google.com/citations?view_op=top_venues&vq=eng_humancomputerinteraction

Swanson, H., Arastoopour Irgens, G., Bain, C., Hall, K., Wood, P., Rogge, C., Horn, M., & Wilensky, U. (2018). Characterizing Computational Thinking in High School Science. *International Conference of the Learning Sciences.*

Swanson, H., Anton, G., Bain, C., Horn, M., Wilensky, U. (2017). Computational thinking in science classroom. *Proceedings of the International Conference on Computational Thinking in Education, 1*, 17-22.

Beheshti, E., Kim, D., Ecanow, G., & Horn, M. (2017). Looking inside the wires. Understanding museum visitor learning with an augmented circuit exhibit. *ACM Conference on Human Factors in Computing Systems (CHI'17).*

Wagh, A., Levy, S., Horn, M., Guo, Y., Brady, C., Wilensky, U. (2017). Anchor Code: Modularity as evidence for conceptual learning and computational practices of students using a code-first environment. *Conference on Computer Supported Collaborative Learning (CSCL'17).*

Horn, M., Banerjee, A., Davis, P., & Stevens, R. (2016). Invasion of the Energy Monsters: A spooky game about saving energy. *Games, Learning, and Society* (GLS'16).
First Place Showcase Award

Orton, K., Weintrop, D., Beheshti, E., Horn, M., Jona, K., Wilensky, U. (2016). Bringing computational thinking into high school mathematics and science classrooms. *International Conference of the Learning Sciences.*

Guo, Y., Wagh, A., Brady, C., Levy, S., Horn, M., Wilensky, U. (2016). Frogs to think with—Improving students' computational thinking and understanding of evolution in a code-first learning environment. *Interaction Design and Children* (IDC'16).

Block, F., Hammerman, J., Horn, M.S., Phillips, B.C., Evans, E.M., Diamond, J., Shen, C. (2015). Fluid grouping: Quantifying group engagement around interactive tabletop exhibits in the wild. *ACM Conference on Human Factors in Computing Systems* (CHI'15), ACM Press, 867-876.
Best Paper Award (top 1% of all submissions)

AlSulaiman, S. & Horn, M.S. (2015). Peter the Fashionista? Computer programming games and gender-oriented cultural forms. *ACM CHI PLAY 2015,* ACM Press.

Hu, F., Zekelman, A., Horn, M., & Judd, F. (2015). Strawbies: Explorations in tangible programming (demo presentation). *Interaction Design and Children (IDC'15).*

DiAngelo, S., Pollock, D.H., & Horn, M.S. (2015). Fishing with Friends: Tabletop games to raise environmental awareness in aquariums. *Interaction Design and Children (IDC'15)*, 29-38, ACM Press.

Leong, Z.A. & Horn, M.S. (2014). Waiting for learning: Designing interactive education materials for patient waiting areas. *Interaction Design and Children (IDC'14),* ACM Press, 359-362.
Best Full Paper Award

Horn, M., Brady, C., Hjorth, A., Wagh, A., Wilensky, U. (2014). Frog Pond: A code-first learning environment on evolution and natural selection. *Interaction Design and Children (IDC'14)*, ACM, 357-360.
Best Short Paper Award

Horn, M.S., Banerjee, A., D'Angelo, S., Kuo, P-Y., Pollock, D.H., Stevens, R. (2014). Turn Up the Heat! Board games, environmental sustainability, and cultural forms. *Games, Learning, and Society (GLS'14).*
GLS Showcase Award (2nd Place)

Kuo, P-Y. & Horn, M.S. (2014). Energy Diet: Energy feedback on a bathroom scale. *International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp'14),* ACM Press, 435-446.

Banerjee, A. & Horn, M.S. (2014). Ghost Hunter: Parents and children playing together to learn about energy consumption. *Tangible, Embedded, and Embodied Interaction (TEI'14)*, ACM Press, 267-274.

Solomon, C., Banerjee, A., & Horn, M.S. (2014). Ultimate trainer: Instructional feedback for ultimate frisbee players. *Tangible, Embedded, and Embodied Interactoin (TEI'14),* ACM Press, 137-140.

Horn, M.S. (2013). The role of cultural forms in tangible interaction design. *Tangible, Embedded, and Embodied Interaction (TEI'13)*. ACM Press.

Davis, P., Horn, M.S., Schrementi, L., Block, F., Phillips, B., Evans, E.M., Diamond, J., & Shen, C. (2013). Going Deep: Supporting collaborative exploration of evolution in natural history museums. *Conference on Computer Supported Collaborative Learning (CSCL'13)*, Madison, Wisconsin.
Best Design Paper Award

Horn, M.S., AlSulaiman, S., Koh, J. (2013). Translating Roberto to Omar: Computational literacy, stickerbooks, and cultural forms. *Interaction Design and Children (IDC'13)*, ACM Press, 120-127.

Block, F., Wigdor, D., Phillips, B. C., Horn, M. S., & Shen, C. (2012). FlowBlocks: A multi-touch UI for crowd interaction. *User Interface Software and Technology (UIST'12)*, ACM Press, 497-508.

Beheshti, E., Van Devender, A., & Horn, M.S. (2012). Touch, click, navigate: Comparing tabletop and desktop interaction for map navigation tasks. *Interactive Tabletops and Surfaces (ITS'12)*, ACM Press, 205-214.

Horn, M.S., Leong, Z.A., Block, F., Diamond, J., Evans, E.M., Phillips, B., & Shen, C. (2012). Of BATs and APEs: An interactive tabletop game for natural history museums. *ACM Conference on Human Factors in Computing Systems (CHI'12)*, ACM Press, 2059-2068.

Bao, P., Hecht, B., Carton, S., Quaderi, M., Horn, M.S., & Gergle, D. (2012). Omnipedia: Bridging the Wikipedia language gap. ACM *Human Factors in Computing Systems (CHI'12)*, ACM Press, 1075-1084.

Olson, I., Leong, Z.A., Horn, M. (2011). "It's just a toolbar!" Using tangibles to help children manage conflict around a multi-touch tabletop. *Tangible, Embedded, and Embodied Interaction (TEI'11)*, ACM, 29-36.

Horn, M. S., Davis, P., Hubbard, A., Keifert, D., Leong, Z.A., & Olson, I.C. (2011). Learning Sustainability: Children, learning, and the next generation eco-feedback technology. *Interaction Design and Children (IDC'11)*, ACM, 161-164.

Olson, I.C. & Horn, M. (2011). Modeling on the Table: Agent-Based Modeling in Elementary School with NetTango. *Interaction Design and Children (IDC'11)*, ACM Press, 189-192.

Leong, Z.A. & Horn, M.S. (2011). Representing Equality: A Tangible Balance Beam for Early Algebra Education. *Interaction Design and Children (IDC'11)*, ACM Press, 173-176.

Horn, M.S., Solovey, E.T., Crouser, J.R., and Jacob, R.J.K. (2009). Comparing tangible and graphical programming interfaces for use in informal science education. *ACM Conference on Human Factors in Computing Systems (CHI'09)*, ACM Press, 975-984.

Horn, M.S., Tobiasz, M., and Shen, C. (2009). Visualizing Biodiversity with Voronoi Treemaps. *International Symposium on Voronoi Diagrams in Science and Engineering (ISVD'09)*, Copenhagen, Denmark.

Horn, M.S., Solovey, E.T., and Jacob, R.J.K. (2008). Tangible programming and informal science learning: making TUIs work for museums. *Interaction Design and Children (IDC'08)*, ACM Press, 194-201.

Jacob, R.J.K., Girouard, A., Hirshfield, L.M., Horn, M.S., Shaer, O., Treacy, E.S., and Zigelbaum, J. (2008). Reality-Based Interaction: A Framework for post-WIMP interfaces. *Conference on Human Factors in Computing Systems (CHI'08)*, ACM Press, 201-210.

Horn, M.S. and Jacob, R.J.K. (2007). Designing Tangible Programming Languages for Classroom Use. *Tangible and Embedded Interaction (TEI'07)*, ACM Press, 159-162.

Zigelbaum, J., Horn, M.S., Shaer, O., and Jacob, R.J.K. (2007). The Tangible Video Editor: Collaborative Video Editing with Active Tokens. *Tangible and Embedded Interaction (TEI'07)*, ACM Press, 43-46.

Books and Chapters

Horn, M. & Bers, M. (2019). Tangible Computing. In S.A. Fincher & A.V. Robins (Eds.), *The Cambridge Handbook of Computing Education Research*. Cambridge University Press.

Diamond, J., Horn, M.S., & Uttal, D. (2016). *Practical evaluation guide: Tools for museums and other informal educational settings. 3rd edition.* AltaMira Press.

Bers, M. U. & Horn, M. S. (2009). Tangible programming in early childhood: Revisiting developmental assumptions through new technologies. In I. R. Berson & M. J. Berson (Eds.), *High-tech tots: Childhood in a digital world.* Greenwich, CT: Information Age Publishing.

Patent Applications

Bers, M.U, & Horn, M.S. "Educational robotic systems and methods." U.S. Patent Application 14/242,220.

Other Selected Papers, Presentations, and Demos

Arastoopour Irgens, G., Dabholkar, S., Chandra, S., Horn, M., & Wilensky, U. (2019). Classifying Emergent Student Learning in a High School Computational Chemistry Unit. Paper to be presented at the *American Education Research Association (AERA) Conference.* Toronto, CA.

Yao, N., Brewer, J., D'Angelo, S., Horn, M., & Gergle, D. (2018). Visualizing Gaze Information from Multiple Students to Support Remote Instruction. In *Proceedings SIGCHI Conference on Human Factors in Computing Systems (CHI'18 extended abstracts).*

Banerjee, A., Robert, R., Horn, M. (2018). FieldGuide: Smartwatches in a Multi-display Museum Environment. In *Proceedings SIGCHI Conference on Human Factors in Computing Systems (CHI'18 extended abstracts).*

Beheshti, E., Villanosa, K., and Horn, M.S. (2018). Understanding parent-child sensemaking around interactive museum exhibits. *Annual Meeting of the American Education Research Association (AERA).*

Beheshti, E. and Horn, M.S. (2018). Looking inside the circuit: Understanding electricity with an augmented circuit exhibit. *Annual Meeting of the American Education Research Association (AERA).*

Horn, M., Roberts, J., Banerjee, A., McGee, S., & Matcuk, M. (2017). Touch | Don't Touch: Exploring the role of interactive displays in natural history museums to help visitors appreciate objects behind glass. In *Proceedings Computer Supported Collaborative Learning (CSCL'17).*

Kim, D., & Horn, M. (2017). "You switch, and I press": Comparing children's collaborative behavior in a tangible and graphical interface game. In *Proceedings Computer Supported Collaborative Learning (CSCL'17).*

McGee, S., Roberts, J., Banerjee, A., Foong, E., Matcuk, M., Horn, M. (2017). Designing digital rails to foster scientific curiosity around museum collections. *Annual Meeting of the American Education Research Association (AERA).*

Obiorah, M., Harburg, E., Bos, M., Horn, M. (2017). JumpGym: Exploring the impact of a jumping exergame for waiting areas. Presented at the *Annual Symposium of Computer-Human Interaction in Play (CHI Play'17 extended abstracts)*, 13-24.

Gorson, J., Patel, N., Beheshti, E., Magerko, B., and Horn, M.S. (2017). TunePad: Computational thinking through sound composition. *Proceedings of Interaction Design and Children (work in progress).*

Obiorah, M.G., Piper, A.M., and Horn, M. (2017). Independent word discovery for people with aphasia. *Poster presented at the ACM Conference on Computers and Accessibility (ASSETS'17).*

Beheshti, E., Kim, D., Ecanow, G., and Horn, M. (2017). Close the circuit 'N play the electrons: Learning electricity with an augmented circuit exhibit. *Proceedings of Interaction Design and Children (demo)*, 675-678.

Beheshti, E., Weintrop, D., Swanson, H., Orton, K., Horn, M., Jona, K., Trouille, L., Wilensky U. (2017). Computational thinking in practice: How STEM professionals use CT in their work. *Annual Meeting of the American Education Research Association.*

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. *NARST Conference.*

Beheshti, E., Obiorah, M., & Horn, M., (2015). Let's dive into it! Learning electricity with multiple representations. *Interaction Design and Children (IDC'15).*

Horn, M., Phillips, B., Evans, E.M., Block, F., Diamond, J., Shen, C. (2015). Visualizing the tree of life: Learning around an interactive visualization of biological data in museums. *NARST Conference.*

Horn, M.S. (2014). Beyond video games for social change. *ACM Interactions, 21*(2), 66-68.

Villanosa, K., Block, F., Horn, M.S., Shen, C. (2014). Build-a-Tree: Parent-child gaming to learn about evolution in museum settings. *Games, Learning, and Society (GLS'14).*

Horn, M., Weintrop, D., & Routman, E. (2014). Programming in the pond: A tabletop computer programming exhibit. Work-in-progress at *Human Factors in Computing Systems Extended Abstracts (CHI'14).*

Horn, M.S., Banerjee, A., D'Angelo, S., Kuo, P-Y, Pollock, D.H., Stevens, R. (2014). Game Arcade: Turn Up the Heat!. *Games, Learning, and Society Demo Track (GLS'14).*

Villanosa, K., Block, F., Hosford, A., Horn, M.S., Shen, C. (2014). Game Arcade: Build-a-Tree. *Games, Learning, and Society Demo Track (GLS'14).*

Beheshti, E., Aljuhani, A., Horn, M.S. (2014). Electrons to Light Bulbs: Understanding Electricity with a Multi-Level Simulation Environment. *IEEE Frontiers in Education (FIE'14).*

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 Education Research Association (AERA'14).

Brady, C., Banerjee, A., Hjorth, A., Horn, M.S., Wagh, A., Wilensky, U. (2014). Getting your drift—activity designs for grappling with evolution. Poster presented at the International Conference of the Learning Sciences (ICLS'14), Boulder, Colorado.

Evans, E.M., Phillips, B.C., Horn, M.S., Block, F., Diamond, J., & Shen, C. (2013). Active prolonged engagement: When does it become active prolonged "learning"? In Uttal, D. (chair), Developmental research outside the lab: Children's STEM learning in museums. Symposium presented at the *Society for Research in Child Development Biennial Meeting SRCD'13.*

Phillips, B.C., Evans, E.M., Horn, M.S., Block, F., Diamond, J., & Shen, C. (2013). How is a human like a banana? Conceptions of humans as part of the natural world. Symposium presented at the *Society for Research in Child Development Biennial Meeting SRCD'13.*

Chua, K.C., Qin, Y., Block, F., Phillips, B., Diamond, J., Evans, E.M., Horn, M.S., Shen, C. (2012). FloTree: A multi-touch interactive simulation of evolutionary processes. Demo presented at *Interactive Tabletops and Surfaces (ITS'12)*, Boston, Massachusetts.

Weintrop, D., Holbert, N., Wilensky, U., & Horn, M.S. (2012). Redefining constructionist video games: Marrying constructionism and video game design. Presented at *Constructionism 2012*, Athens, Greece.

Horn, M.S. & Wilensky, U. (2012). NetTango: A mash-up of NetLogo and Tern. In Moher, T. (chair) and Pinkard, N. (discussant), When systems collide: Challenges and opportunities in learning technology mash-ups. Symposium presented at AERA, Vancouver, British Columbia.

Horn, M. (2012). Spinners, Dice, and Pawns: Using board games to prepare learners for agent-based modeling activities. In M. Berland (chair) and Kafai, Y. (discussant), Fiddling on the fly: thinking, learning, and designing using board games. Symposium presented at AERA, Vancouver, British Columbia.

Boxerman, J.Z., Horn, M.S, (2011). Helping learners comprehend changes over time and space on a geological scale. Presented at the Geological Society of American Annual Meeting, Minneapolis, MN.

Leong, Z.A. & Horn, M.S. (2010). The BEAM: a digitally enhanced balance beam for mathematics education. *Interaction Design and Children (demo presentation)*, Barcelona, Spain, June 9-12. ACM Press.

Blikstein, P., Buechley, L., Horn, M.S., Raffle, H. (2010). A new age in tangible computational interfaces for learning. In *Proc. International Conference of the Learning Sciences (ICLS'10)*, Chicago, IL.

Horn, M.S. & Shen, C. (2009). Frogs and Toads Memory: A Voronoi Twist on the Classic Children's Game. In *Intl. Symposium on Voronoi Diagrams in Science and Engineering (ISVD'09)*, Copenhagen, Denmark.

Horn, M.S. and Jacob, R.J.K. (2007). Tangible Programming in the Classroom with Tern. *Human Factors in Computing Systems (CHI'07 Trends Interactivity)*, ACM Press.

Jacob, R.J.K., Girouard, A., Hirshfield, L.M., Horn, M.S., Shaer, O., Solovey, E.T., and Zigelbaum, J. (2007). Reality-Based Interation: Unifying the New Generation of Interaction Styles. *Human Factors in Computing Systems (extended abstracts) CHI'07*, ACM Press.

Jacob, R.J.K., Girouard, A., Hirshfield, L.M., Horn, M.S., Shaer, O., Solovey, E.T., and Zigelbaum, J. (2007). "What Is the Next Generation of Human-Computer Interaction?" *ACM Interactions*, *14*(3), 53-58.

Horn, M.S. & Jacob, R.J.K. (2006). Tangible Programming in the Classroom: A Practical Approach. *Human Factors in Computing Systems Conference (extended abstracts) CHI'06*, ACM Press, 869-874.

TEACHING

2016, 2018	**Learning in Museums** (graduate)	Northwestern University
2009 - 2015	**Intro to Design for the Learning Sciences** (graduate)	Northwestern University
2011 -	**Human-Computer Interaction** (undergraduate)	Northwestern University
2013 -	**Tangible Interaction Design and Learning** (graduate)	Northwestern University
2010	**Design & Emotion** (graduate)	Northwestern University
2008	**Tangible User Interface Laboratory** (undergraduate)	Tufts University
2006 - 2009	**Problem Solving in Discrete Mathematics** (teacher PD) Developed curriculum, led activities, and mentored local K-12 mathematics teachers for a summer professional development institute on Discrete Mathematics.	Tufts University
2005	**Introduction to Computer Science** (undergraduate)	Tufts University
2003 - 2005	**Coordinator CSEMS Mentoring Program** Coordinated an academic mentoring and enrichment program for underrepresented undergraduates in engineering and computer science.	Tufts University

PROFESSIONAL ACTIVITIES & COMMUNITY

Conference Chairing

- ACM Interaction Design and Children (2017, 2018), Papers Co-Chair
- ACM Interactive Tabletops and Surfaces (2012, 2013), Program Committee Co-Chair
- ACM Tangible Embedded and Embodied Interaction (2012, 2014), Studios Co-Chair
- ACM Tangible Embedded and Embodied Interaction (2016), Design Competition Co-Chair
- ACM Interaction Design and Children (2011), Demos Co-Chair

Conference Committees

- International Conference of the Learning Sciences (2018), Program Committee
- ACM Tangible Embedded and Embodied Interaction (2011 – 2018), Program Committee
- ACM CHIPlay (2017), Program Committee
- ACM Tangible Embedded and Embodied Interaction (2013), Doctoral Symposium Mentor Faculty
- ACM Human Factors in Computing Systems (2012, 2018), Program Committee
- ACM Interaction Design and Children (2011 – 2016, 2019), Program Committee
- ACM Interactive Tabletops and Surfaces (2011), Program Committee
- ACM Human Factors in Computing Systems (2011), Work-in-Progress Program Committee

Editorial Board

- International Journal of Child-Computer Interaction (2016 –)
- Technology, Knowledge, and Learning (2010-2012)

Memberships

- Association for Computing Machinery (ACM)
- IEEE Computer Society
- American Educational Research Association (AERA)
- International Society of the Learning Sciences (ISLS)

Ad Hoc Reviewer (Selection)

- Computer Supported Collaborative Learning (CSCL)
- International Conference of the Learning Sciences (ICLS)
- ACM Conference on Human Factors in Computing Systems (CHI)
- Tangible, Embedded, and Embodied Interaction (TEI)
- Interaction Design and Children (IDC)
- Interactive Tabletops and Surfaces (ITS)
- Interacting with Computers
- Computers & Education
- Transactions on Computer Human Interaction (TOCHI)
- International Journal of Human-Computer Studies
- Journal of Computers for Mathematical Learning
- Journal of Personal and Ubiquitous Computing
- Journal of the Learning Sciences

INVITED TALKS

- Pompeau Fabra University, Barcelona, Spain, December 2018.
- Interdisciplinary Center, Herzliya, Israel, November 2018.
- University of Illinois, Urbana-Champaign, September 2017.
- University of Colorado, Boulder, Computer Science Colloquium, November 2016.
- University of Illinois, Chicago, Learning Sciences Colloquium, October 2015.
- Northwestern Science Café, September 2015.
- École Polytechnique Fédérale de Lausanne (EPFL), October 2012.
- DePaul University, College of Computing and Digital Media, March 2012.
- Wellesley College, Computer Science, March 2012
- Purdue University, School of Engineering Education, October 2011.
- University of Illinois, Chicago, IL, October 2011.
- Design for Mobile Conference (D4M'2010), Chicago, IL, September 2010

PRESS COVERAGE

July 2016	**Red Eye**, 3 young innovators + Chicago = a kids' coding app used in 15,000 schools http://www.redeyechicago.com/news/redeye-three-chicago-undergrads-are-doing-big-things-in-silicon-valley-20160624-story.html
May 2016	**Wired**, Osmo turns blocks into code to teach kids programming https://www.wired.com/2016/05/osmo-turns-blocks-code-teach-kids-programming/
May 2016	**Engadget**, Osmo's blocks are like Lego for coding https://www.engadget.com/2016/05/25/osmo-coding/
May 2016	**Forbes**, Osmo aims to be the 'Lego' of coding www.forbes.com/sites/andyrobertson/2016/05/25/osmo-coding-lego
June 2016	**The Wall Street Journal**, Is your child coding yet? New building blocks teach programming basics. http://www.wsj.com/articles/is-your-child-coding-yet-new-building-blocks-teach-programming-basics-1465316688
Fall 2015	**Crain's Chicago Business**, How to create the next generation of coders *http://www.chicagobusiness.com/article/20151112/ISSUE01/151119984/how-to-create-the-next-generation-of-coders*
Spring 2012	**Harvard Gazette**, Touch, drag, learn *http://news.harvard.edu/gazette/story/2012/06/touch-drag-learn/*
Spring 2012	**ACM TechNews**, *Teaching Tree-Thinking Through Touch* *http://technews.acm.org/archives.cfm?fo=2012-06-jun/jun-06-2012.html*
Spring 2012	**ScienceDaily** article on the Life on Earth project and Build-a-Tree game *http://www.sciencedaily.com/releases/2012/06/120604111121.htm*
Spring 2012	**NewScientist** article on Omnipedia research *http://bit.ly/J2OkWN*
February 2008	**Computerworld** article with a discussion on Reality-Based Interaction *http://www.cs.tufts.edu/~jacob/papers/computerworld.pdf*
January 2008	**NECN TV** interview on my tangible programming research *http://www.necn.com/category/9/2299*