Amy LaViers

Contact Information

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Philadelphia, PA, USA

www.the-rad-lab.org
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Appointments

The Robotics, Automation, and Dance (RAD) Lab, Philadelphia, PA

◇ Director — May 2013 – present

Anticipation Ventures, LLC, Philadelphia, PA

◇ Philanthropy Lead — February 2020 – present

Soma Measure, Inc, Philadelphia, PA

◇ Co-founder, CEO/CTO — August 2020 – December 2021

CAAll, LLC, Urbana, IL

◇ Co-founder, CCO/CTO — September 2018 – August 2020

University of Illinois, Urbana, IL

◇ Mechanical Science and Engineering Department — August 2015 – August 2020
Assistant Professor

AE Machines, Inc, Champaign, IL

◇ Co-founder, CTO — June 2015 – August 2019

University of Virginia, Charlottesville, VA

◇ Systems and Information Engineering Department — August 2013 – May 2015
Assistant Professor

Education

Laban/Bartenieff Institute of Movement Studies, New York, NY

◇ C.M.A. Laban Movement Studies — August 2016
Thesis: *Preparing to Cook: Function and Expression Within Recipe*
Adviser: Professor Karen Bradley

Georgia Institute of Technology, Atlanta, GA

◇ Ph.D., Electrical and Computer Engineering — August 2013
Thesis: *Choreographic Abstractions for Style-Based Robotic Motion*
Adviser: Professor Magnus Egerstedt
Major Area of Study: Systems and Control
Minor Area of Study: Mathematics

◇ M.S., Electrical and Computer Engineering — December 2010

Princeton University, Princeton, NJ

◇ B.S.E., Mechanical and Aerospace Engineering — June 2009
Thesis: *Learning the Primary Colors of Dance*
Adviser: Professor Naomi Leonard

◇ Certificate in Dance — June 2009
Thesis: *Pleiades*
Performed at the Berlind Theater, March 2009.
Adviser: Rebecca Lazier

Books

A. LaViers and C. Maguire. *Making Meaning With Machines: Somatic Strategies, Choreographic Technologies, and Notational Abstractions Through a Laban/Bartenieff Lens.* MIT Press. 2023.

A. LaViers and M. Egerstedt. (Eds.) *Controls and Art: Inquires that Intersect the Subjective and the Objective.* Springer. 2014.

Book Chapters

A. LaViers. "What Does it Mean? On Platform-Invariant "Body-Language" Dictionaries." *Cultural technologies of robots and AI in the Performing Arts* Y. Stone and R. Savery. (Eds). 129-145. 2025.

K. Ladenheim, A. LaViers, and C. Maguire. "Breathing With Robots: Notating Performer Strategy, Alongside Choreographer Intent and Audience Observation, In Breath-driven Robotic Dance Performance." *Modeling Visual Aesthetics, Emotion, and Artistic Style* J. Wang and R. Adams. (Eds). *Springer.* 2024.

A. LaViers. "First Encounters with Robots Through Embodied Observation, Imagined Narrative, and Choreography." *Materializing Digital Futures: Touch, Movement, Sound and Vision* T. Cinque and J. B. Vincent (Eds). 169-185. 2022.

A. LaViers. "Programmed Improvisation Inspired From Autonomous Humanoids." 513-526, Chapter in *Handbook of Improvisation in Dance.* V. Midgelow (Ed.) Oxford University Press. 2019.

A. LaViers, A. Bashiri, Y. Sheng, J. Heddy, and L. Bai. "Abstractions for Design-by-Humans of Heterogeneous Autonomous Behaviors." 237-262, Chapter in *Dance Notations and Robot Motion.* J.P. Laumond and N. Abe (Eds.) Springer Tracts in Advanced Robotics (STAR). 2015.

A. LaViers, L. Teague, and M. Egerstedt. "Style-based Robotic Motion in Contemporary Dance Performance." 205-229, Chapter in *Controls and Art: Inquires that Intersect the Subjective and the Objective.* A. LaViers and M. Egerstedt (Eds.) Springer. 2014.

Journal Publications

D. Herath, A. LaViers, S. Zhang, N. Hansika Wijesinghe, S. Konrad, Stelarc, J. Busby Grant, and J. Wang, "The Body in Affective Robotics: A Survey and Conceptual Positioning Using the Performing Arts as a Scaffold for Understanding Bodily Expressed Emotion." *IEEE Transactions on Affective Computing.* 2025.

C. Maguire, A. Bacula, and A. LaViers. "Dance-theoretic Notation for Data-driven Human Movement Meaning Estimation." *Journal of Laban Bartenieff Movement Studies.* Vol. 2: 110-125. 2025.

A. LaViers. "Robots and Dance: A Promising Young Alchemy." *Annual Review of Control, Robotics, and Autonomous Systems.* Vol. 8: 323-350. 2025.

K. Ladenheim and A. LaViers. "Babyface: Performance and Installation Art Exploring the Feminine Ideal in Gendered Machines." *The Art of Human-Robot Interaction: Creative Perspectives from Design and the Arts* Topic in *Frontiers in Robotics and AI*, Section *Human-Robot Interaction.* D. C. Herath, E. A. Jochum, C. Kroos, D. St-Onge (Eds). 8. 1-21. 2021.

A. Bacula and A. LaViers. "Character Recognition on a Varied Robotic Platforms via a Laban Movement Analysis in Expert and Lay Groups." *International Journal on Social Robotics (SORO).* 13(5), 1047-1062. 2020.

C. Cuan, E. Berl, and A. LaViers. "Measuring Human Perceptions of Expressivity in Natural and Artificial Systems Through the Live Performance Piece *Time to Compile*." *Paladyn. Journal of Behavioral Robotics. (Special Issue on Social Robots in Therapy: Focusing on Autonomy and Ethical Challenges).* 10(1), 364–379. 2019.

R. Kaushik and A. LaViers. "Imitation of Human Motion by Low Degree-of-Freedom Simulated Robots and Human Preference for Mappings Driven by Spinal, Arm, and Leg Activity." *International Journal on Social Robotics (SORO).* 11(5), 765-782. 2019.

C. Cuan, E. Berl, and A. LaViers. "*Time to Compile*: A Performance Installation as Human-Robot Interaction Study Examining Self-Evaluation and Perceived Control Through the Lenses of Movement and Technology Literacy and Valence." *Paladyn. Journal of Behavioral Robotics. (Special Issue on Social Robots in Therapy: Focusing on Autonomy and Ethical Challenges).* 10(1), 267-285. 2019.

A. Jang Sher, U. Huzaifa, J. Li, V. Jain, A. Zurawski, and A. LaViers. "An Embodied, Platform-invariant Architecture for Connecting High-level Spatial Commands to Platform Articulation." *Robotics and Autonomous Systems (RAS).* 119, 263-277. 2019.

A. LaViers. "Ideal Mechanization: Exploring the Machine Metaphor Through Theory and Performance." *Arts (Special Issue on Machine as Artist for the 21st Century).* MDPI. 8(2), 67. 2019.

A. LaViers. "Counts of Mechanical, External Configurations Compared to Computational, Internal Configurations in Natural and Artificial Systems." *PLoS ONE.* 14(5): e0215671. 2019.

U. Huzaifa, C. Maguire, and A. LaViers. "Toward an Expressive Bipedal Robot: Variable Gait Synthesis and Validation in a Planar Model." *International Journal on Social Robotics (SORO).* 12(1), 129-141. 2019.

H. Cui, C. Maguire, and A. LaViers. "Laban-Inspired Task-Constrained Expressive, Variable Motion Generation on Aerial Robots." *Robotics.* MDPI. 8(2), 24. 2019.

M. Heimerdinger and A. LaViers. "Modeling the Interactions of Context and Style on Affect in Motion Perception: Stylized Gaits Across Multiple Environmental Contexts." *International Journal on Social Robotics (SORO).* 11(3), 495-513. 2019.

A. LaViers, C. Cuan, C. Maguire, K. Bradley, K. Brooks Mata, A. Nilles, I. Vidrin, N. Chakraborty, M. Heimerdinger, U. Huzaifa, R. McNish, I. Pakrasi, and A. Zurawski, "Choreographic and Somatic Approaches for the Development of Expressive Robotic Systems." *Arts (Special Issue on Machine as Artist for the 21st Century).* MDPI. 7(2), 11. 2018.

T. Marino, C. Widdowson, A. Oetting, A. Lakshmanan, H. Cui, N. Hovakimyan, R. Wang, A. Kirlik, A. LaViers, D. Stipanovic. "Carebots: Prolonged Elderly Independence Using Small Mobile Robots." *ASME Mechanical Engineering Magazine.* 138(9), S8-S13. 2016.

A. LaViers, Y. Chen, C. Belta, and M. Egerstedt. "Automatic Sequencing of Ballet Poses: A Formal Approach to Phrase Generation." *IEEE Robotics and Automation Magazine.* 18(3), 87-95. Sept. 2011.

Conference Proceedings

A. LaViers and C. Maguire. "The BESST System: Explicating a New Component of Time in Laban/Bartenieff Movement Studies Through Work With Robots." *8th International Conference on Movement and Computing (MOCO)*. 40. Chicago, IL. 2022.

C. Fuller, U. Huzaifa, A. LaViers, and J. Schultz. "Core-centered actuation for Biped Locomotion of Humanoid Robots." *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 3481-3487. Virtual from Las Vegas, NV. 2020.

A. LaViers and I. Vidrin. "Can a Robot Do a Trust Fall? Absurdity as a Component of Human Intelligence and Embodiment." *Eleventh International Conference on Computational Creativity (ICCC)*. Virtual from Lisbon, Portugal. 2020.

R. Kaushik, A. K. Mishra (Siemens), and A. LaViers. "Feasible Stylized Motion: Robotic Manipulator Imitation of a Human Demonstration with Collision Avoidance and Style in Increasingly Cluttered Environments." *7th International Conference on Movement and Computing (MOCO)*. 4. Virtual from Jersey City, NJ. 2020.

C. Cuan, J. Hoffswell, and A. LaViers. "Stories About the Future: An Initial Dataset Exploring How Co-movement with Robots Affects Perceptions About Robot Capability." *7th International Conference on Movement and Computing (MOCO)*. 10. Virtual from Jersey City, NJ. 2020.

K. Ladenheim and A. LaViers. "*Babyface*." *7th International Conference on Movement and Computing (MOCO)*. 34. Virtual from Jersey City, NJ. 2020. (Practice Work; Extended Abstract)

A. Bushman, M. Asselmeier, J. Won, and A. LaViers. "Toward Human-like Teleoperated Robot Motion: Performance and Perception of a Choreography-inspired Method in Static and Dynamic Tasks for Rapid Pose Selection of Articulated Robots" *IEEE International Conference on Robotics and Automation (ICRA)*. 10219-10225. Virtual from Paris, France. 2020.

K. Ladenheim, R. McNish, W. Rizvi, and A. LaViers. "Motion-activated Wearable Robot for Live Dance Performance Investigating the Feminine Cyborg Metaphor" *15th Annual ACM/IEEE International Conference on Human Robot Interaction (HRI)*. 243-251. Cambridge, UK. 2020.

W. Rizvi, I. Pakrasi, and A. LaViers. "Influence of Variable Environments and Character-Specific Design on Perception of Virtual Robots with Affective Labels." *International Conference on Social Robotics (ICSR)*. 256-266. Madrid, Spain, 2019.

E. Berl, I. Pakrasi, and A. LaViers. "Creating Context Through Performance: Perception of the 'DD' Robotic Platform in Variable Valence Interactions in Distinct Office Environments." *International Conference on Social Robotics (ICSR)*. 288-298. Madrid, Spain, 2019.

U. Huzaifa, C. Fuller, J. Schultz, and A. LaViers. "Toward a Bipedal Robot with Variable Gait Styles: Sagittal Forces Analysis in a Planar Simulation and a Prototype Ball-Tray Mechanism." *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2266-2272. Macau, China, 2019.

J. Lambert, W. Rizvi, U. Huzaifa, and A. LaViers. "A Comparison of Descriptive and Emotive Labels to Explain Human Perception of Gait Styles on a Compass Walker in Variable Contexts." *28th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*. 1-8. New Dehli, India, 2019.

Y. Zhou, M.Asselmeier, and A. LaViers. "Toward Expressive Multi-Platform Teleoperation: Laban-Inspired Concurrent Operation of Multiple Joints on the Rethink Robotics Baxter Robot in Static and Dynamic Tasks." *6th International Conference on Movement and Computing (MOCO)*. 15. Tempe, AZ, 2019.

W. Rizvi, I. Pakrasi, and A. LaViers. "Movement Design of Virtual Aerial Robots with Distinct Affective Labels." *6th International Conference on Movement and Computing (MOCO)*. 27. Tempe, AZ, 2019. (Extended Abstract)

R. Kaushik and A. LaViers. "Imitating Human Movement Using a Measure of Verticality to Animate Low Degree-of-Freedom Non-humanoid Virtual Characters." *International Conference on Social Robotics (ICSR)*. 588-598. Qingdao, China, 2018.

I. Pakrasi, N. Chakraborty, C. Cuan, E. Berl, W. Rizvi, and A. LaViers. "Dancing Droids: An Expressive Layer for Mobile Robots Developed Within Choreographic Practice." *International Conference on Social Robotics (ICSR)*. 410-420. Qingdao, China, 2018.

C. Cuan, I. Pakrasi, and A. LaViers "Perception of Control in Artificial and Human Systems: A Study of Embodied Performance Interactions." *International Conference on Social Robotics (ICSR)*. 503-512. Qingdao, China, 2018.

A. Bacula and A. LaViers. "Character Design and Validation on Aerial Robotic Platforms Using Laban Movement Analysis." *International Conference on Social Robotics (ICSR)*. 202-212. Qingdao, China, 2018.

C. Cuan, I. Pakrasi, E. Berl, and A. LaViers "CURTAIN and Time to Compile: A Demonstration of an Experimental Testbed for Human-Robot Interaction." *27th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*. 255-261. Nanjing, China, 2018.

C. Cuan, I. Pakrasi, and A. LaViers, "Time to Compile." *5th International Conference on Movement and Computing (MOCO)*. 53. Genoa, Italy 2018. (Practice Work; Extended Abstract)

A. Nilles, C. Gladish, M. Beckman, and A. LaViers, "Improv: Live Coding for Robot Motion Design." *5th International Conference on Movement and Computing (MOCO)*. 43. Genoa, Italy, 2018. (Extended Abstract)

A. Bacula and A. LaViers, "Character Recognition on a Humanoid Robotic Platform via a Laban Movement Analysis." *5th International Conference on Movement and Computing (MOCO)*. 17. Genoa, Italy, 2018.

I. Pakrasi, N. Chakraborty, and A. LaViers, "A Design Methodology for Abstracting Character Archetypes onto Robotic Systems." *5th International Conference on Movement and Computing (MOCO)*. 24. Genoa, Italy, 2018.

R. Kaushik, I. Vidrin, and A. LaViers, "Quantifying Coordination in Human Dyads via a Measure of Verticality," *5th International Conference on Movement and Computing (MOCO)*. 19. Genoa, Italy, 2018.

C. Cuan, I. Pakrasi., and A. LaViers, "*Time to Compile*: An Interactive Art Installation", *Intersections: 16th Biennial Symposium*. 19-24. The Ammerman Center for Arts and Technology. New London, CT. 2018.

U. Huzaifa and A. LaViers. "Producing Multiple Movement Executions Leveraging Embodied Movement Strategies and Platform Symmetry." *IEEE International Conference on Robotics and Biomimetics (ROBIO)*. 1460-1467. Macao, China. 2017

M. Heimerdinger and A. LaViers. "Influence of Environmental Context on Recognition Rates of Stylized Walking Sequences." *Ninth International Conference on Social Robotics (ICSR)*. 272-282. Tsukuba, Japan. 2017.

L. Dahl, J. Bellona, L. Bai, and A. LaViers. "Data-driven Design of Sound for Enhancing the Perception of Expressive Robotic Movement." *Proceedings of the 4th International Conference on Movement Computing (MOCO)*. 16. London, UK. 2017.

J. Bellona, L. Bai, L. Dahl, and A. LaViers. "Empirically Informed Sound Synthesis Application for Enhancing the Perception of Expressive Robotic Movement" *The 23rd International Conference on Auditory Display (ICAD)*. 73-80. State College, PA. 2017.

U. Huzaifa and A. LaViers. "Control Design for Planar Model of a Core-located Actuation Walker." *6th IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob)*. 170-175. Singapore. 2016.

U. Huzaifa, C. Bernier, Z. Calhoun, C. Kohout, J. Heddy, B. Libowitz, A. Moenning, J. Ye, C. Maguire, and A. LaViers. "Embodied Movement Strategies for Development of a Core-located Actuation Walker." *6th IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob)*. 176-181. Singapore. 2016. (Best Poster Finalist)

S. Huber, J. McAuliff, K. Monson, T. O'Brien, J. Valdez, and A. LaViers. "Exploration of robotic system design in improving the patient experience in physical therapy sessions at the UVA Children's Hospital." *Systems and Information Engineering Design Symposium (SIEDS)*. 230-235. 2015.

G. Heddy, U. Huzaifa, P. Beling, Y. Haimes, J. Marvel, B. Weiss, A. LaViers. "Linear Temporal Logic (LTL) Based Monitoring of Smart Manufacturing Systems." *Annual Conference of the PHM Society*. 6. 2015.

M. Malinowski, P. Beling, Y. Haimes, A. LaViers, J. Marvel, B. Weiss. "System Interdependency Modeling in the Design of Prognostic and Health Management Systems in Smart Manufacturing." *Annual Conference of the PHM Society*. 6. 2015.

B. Choo, P. Beling, A. LaViers, J. Marvel, B. Weiss. "Adaptive Multi-Scale PHM for Robotic Assembly Processes." *Annual Conference of the PHM Society*. 6 2015.

L. Bobadilla, T. T. Johnson, A. LaViers, and U. Huzaifa. "Verified Planar Formation Control Algorithms by Composition of Primitives." *AIAA Guidance, Navigation, and Control (GNC) Conference, AIAA Science and Technology Forum (SciTech)*. 1541. Orlando, FL. 2015.

Y. Sheng and A. LaViers. "Style-based Segmentation of Human Motion." *IEEE International Conference on Systems Man and Cybernetics (SMC)*. 240-245. San Diego, CA. Oct. 2014.

K. Green, A. Panchang, H. Meng, E. D'Agostini, R. Bates, R. Bailey, A. LaViers. "Fluid handling and environmental management for automated 3-D cell culturing." *Systems and Information Engineering Design Symposium (SIEDS)*. 12-17. May 2014.

A. LaViers and M. Egerstedt. "Style-based Abstractions for Human Motion Classification." *ACM/IEEE Fifth International Conference on Cyber-Physical Systems (ICCPS)*. 84-91. Berlin, Ger, Apr. 2014.

A. LaViers and M. Egerstedt. "Style Based Robotic Motion." *American Control Conference (ACC)*. 4327-4332. Montreal, CAN, Jun. 2012.

A. LaViers, Y. Chen, C. Belta, and M. Egerstedt. "A Formal Approach to the Automatic Generation of Balletic Motions." *ACM/IEEE Second International Conference on Cyber-Physical Systems (ICCPS)*. 13-21. Chicago, IL, Apr. 2011.

A. LaViers and M. Egerstedt. "The Ballet Automaton: A Formal Model for Human Motion." *American Control Conference (ACC)*. 3837-3842. San Francisco, CA, Jun. 2011.

A. LaViers, A. Rahmani, and M. Egerstedt. "Dynamic Spectral Clustering." *Mathematical Theory of Networks and Systems (MTNS)*. 747-750. Budapest, Hungary, July 2010.

Articles and Essays

A. LaViers and I. Vidrin. "What falling robots reveal about the absurdity of human trust." Ed. Sam Dresser *Psyche*. March 15, 2021.

A. LaViers. "Dancing with Robots: Choreography brings new perspectives on encoding expressive motion into machines." *Scientific American*. July-August 2020.

A. LaViers. "Sure, it can backflip – but can a robot hold down a desk job?" Ed. Sam Dresser *Aeon*. Feb. 4, 2019.

A. LaViers. "Make robot motions natural: Humanoid machines should move and gesture more like us, argues Amy LaViers." *Nature*. 565, 422-424. 2019.

A. LaViers. "Engineering Needs Qualitative Methods." *Medium*. 2017.

A. LaViers, H. Cui, M. Heimerdinger, U. Huzaifa, A. Jang Sher, A. Nilles, and I. Pakrasi. "Expressivity Expansion Pack" for the *The Robot Design Game*. 2017.

A. LaViers. "TA--ing for Trolls: A Surprising Contrast Between MOOCs and Traditional, Brick and Mortar Classrooms." *Educational Corner. ASME Dynamic Systems & Control Division (DSCD) Newsletter*. Fall 2013.

Choreography and Installations

Creative Convergence at Princeton University, Princeton, NJ October 2023

Presented an interactive movement experience for attendees of "Creative Convergence: At the Crossroads of the Arts, Ecology, Neuroscience, and Control Engineering – A Celebration of Naomi Leonard's 60th Birthday."

Bespoke, interactive online application that generated a movement experience, beginning with individual action that led to collective unison.

⋆ *A Movement Choir for Naomi*

Barnard College at Columbia University, New York, NY November 2021

Media Movement Salon (MeMoSa) at the Barnard Movement Lab at Columbia University, presenting *Babyface* with artist-in-residence Kate Ladenheim during a week-long residency. (Rescheduled and expanded from March 2020.)

Built interactive installation for performance and campus participation with artist-in-residence Kate Ladenheim

⋆ *Babyface*

CAPTIVITY – EdgeCut Performance Series, Online October 2020

Presenting a native online version of *Babyface* with Kate Ladenheim for the theme CAPTIVITY in a series curated by Heidi Boisvert and Kat Mustatea. Co-presented by Edgecut Arts and New York Live Arts on the 3-D online meeting platform Nowhere.

Bespoke, interactive online performance application with artist-in-residence Kate Ladenheim

⋆ *Babyface*

The Majestic Theater via Zoom, Corvallis, OR

Singu-Hilarity, A Robot and Human Comedy Show July 2020

Virtual performance with with artist-in-residence Kate Ladenheim

⋆ *Babyface*

Mana Contemporay via Zoom, Jersey City, NJ

7th International Conference on Movement and Computing (MOCO) July 2020

Virtual performance with with artist-in-residence Kate Ladenheim

⋆ *Babyface*

Circuit Circus, Urbana, IL [Canceled, COVID-19]

Illinois Program in Research in the Humanities (IPRH) sponsored participatory performance event, co-organized with Dance Department faculty John Toenjes; event was canceled in light of COVID-19 measures.

The Granoff Center for Creative and Performance Arts, Brown University, Providence, RI

Conference on Research on Choreographic Interfaces (CRCI) March 2020

Presented robot augmented solo with artist-in-residence Kate Ladenheim

⋆ *Babyface*

The Performance Arcade, Wellington, NZ

Annual public art series on the Wellington Waterfront February 2020

Work by The People Movers x The RAD Lab with associated research study pilot design with Footnote New Zealand Dance Company, presenting with artist-in-residence Kate Ladenheim and supported by the US Embassy

⋆ *Babyface*

University of California – Santa Barbara, Santa Barbara, CA

Concert work within the Alliance of Women in Media Arts and Sciences Conference (AWMAS) conference program February 2020

Work by The People Movers x The RAD Lab, presented live by artist-in-residence Kate Ladenheim.

⋆ *Babyface*

CODAME Art+Tech Festival, San Francisco, CA

GitHub October 2019

Choreographed in collaboration with Catie Cuan and Cat Maguire. Set piece on two dancers from RAW Dance SF. Created an "open source" repository (on `github.com`) that provides instructions, code, and movement scores that allow others to perform the same piece.

⋆ *arubina*

The Gallery in Stauffer B, Arizona State University, Tempe, AZ

6th International Conference on Movement and Computing (MOCO) October 2019

Choreographed and performed in an interactive piece, accepted to the conference after peer review as a Practice Work.

⋆ *A Machine.*

Joe's Pub at the Public Theater, New York, NY

Dance NOW Festival September 2019

Led collaboration between artist-in-residence Kate Ladenheim (The People Movers), research technician Reika McNish, and student Wali Rizvi for the development of a machine-augmented solo.

⋆ *Babyface*

Robotics, Automation, and Dance (RAD) Lab, Urbana, IL

In Progress Showing August 2019

Hosted choreographer Kade Ladenheim (The People Movers) to collaborate on artistic piece and research with students Reika McNish and Wali Rizvi. Advised choreographic and technical development for a solo performed by Kate with a machine-augmented costume, a pair of breath-sensing wings. The in progress showing was open to the public and advertised by MechSE Department.

⋆ *Babyface*

Mountain Arts Center, Prestonsburg, KY

Free public event co-sponsored by the East Kentucky Science Center June 2019

Robotic art installation developed and performed with Catie Cuan, with simultaneous user study around the Future of Work, probing perceptions about robots through a non-literal, theatrical embodied movement experience.

⋆ *Stories About the Future*

Tango on Water, Charlottesville, VA

Free public showing December 2018

Re-staging and performance of a piece developed with Catie Cuan and Catherine Maguire with an audience discussion after produced by Penny Chang.

⋆ *Twist When Your Ankle Is Out Of Phase*, Parts I, II, and III

Dance Rehearsal Krannert (DRK), Krannert Center for the Performing Arts, Urbana, IL

Free public showing December 2018

Choreographed and performed in an interactive piece as part of original research for a manuscript.

⋆ *A Machine.*

Evergreen Brick Works, Toronto, ON

ThoughtWorks ParadigmShift October 2018

Choreographed and performed with artist-in-residence Catie Cuan.

⋆ An installation excerpt of *Time to Compile*

Joe's Pub at the Public Theater, New York, NY

Dance NOW Festival September 2018

Choreographed and performed with artist-in-residence Catie Cuan.

⋆ "Trio" a shortened excerpt of *Time to Compile*

The Armory Blackbox Theater, Urbana, IL

Studio Exhange Showing — July 2018

Developed underlying computational algorithm, choreographed, and performed with Catie Cuan and Catherine Maguire.

⋆ *Twist When Your Ankle Is Out Of Phase*, Parts I, II, and III

Casa Paganini Infomus, Genoa, Italy

5th Conference on Movement and Computing (MOCO) — June 2018

Choreographed and performed with artist-in-residence Catie Cuan and graduate student Ishaan Pakrasi assisted by members of the RAD Lab.

⋆ *Time to Compile*

The Midway, San Fransisco, CA

CODAME Art + Tech Festival — June 2018

Choreographed and performed with artist-in-residence Catie Cuan.

⋆ "Trio" an excerpt of *Time to Compile*

The Ferst Center for the Arts, Georgia Institute of Technology, Atlanta, GA

Arts@Tech SEAD Artists Showcase — April 2018

Choreographed and performed with artist-in-residence Catie Cuan assisted by graduate student Ishaan Pakrasi.

⋆ "Trio" an excerpt of *Time to Compile*

Illinois Program for Research in the Humanities, Urbana, IL

Levis Faculty Center — March 2018

Choreographed for performers Erin Berl and Ishaan Pakrasi with Ishaan Pakrasi's master's thesis robot design as part of "Marvelous Fabrications: Interrogating Robots from the Middle Ages to the Present."

⋆ *Robots in Two Rooms*

The Granoff Center for Creative and Performance Arts, Brown University, Providence, RI

Conference on Research on Choreographic Interfaces (CRCI) — March 2018

Week-long residency with artist-in-residence Catie Cuan, graduate student Ishaan Pakrasi, and research technician Erin Berl, presenting a live performance and interactive installation at CRCI 2018. Hosted by Sydney Skybetter.

⋆ *Time to Compile*

The Ammerman Center for Arts and Technology, Connecticut College, New London, CT

Intersections — February 2018

Artist-in-residence Catie Cuan and graduate student Ishaan Pakrasi presented excerpts of in-progress piece.

⋆ Excerpt from *Time to Compile*

Robotics, Automation, and Dance (RAD) Lab, Urbana, IL

In Progress Showing — June 2017

Hosted choreographer Catie Cuan for month of June to collaborate on artistic piece and research exploration with students Ishaan Pakrasi and Novoneel Chakraborty. Advised choreographic and technical development for a piece with interactive and narrative elements. The in progress showing was open to the public and advertised by MechSE Department.

- ⋆ *Time to Compile*

In Progress Showing — December 2017

Second initial showing of in progress work.

- ⋆ *Time to Compile*

Culbreth Theater, University of Virginia, Charlottesville, VA

Fall Dance Concert – University of Virginia — November 2014

Worked collaboratively with Dance Program Artistic Director Kim Brooks Mata to facilitate student choreography of a piece which featured live choreography with Dance students as well as motion capture choreography that had been edited by Engineering students.

- ⋆ *Integration of Limits*

TOMTOM Festival, Charlottesville, VA

A Score for the Downtown Mall — April 2014

Created diagrammatic movement 'score' for dancers and pedestrians to interpret for a performance on the Charlottesville downtown mall as part of the 2014 TOMTOM festival. The score described movement to be performed at the steps by the Charlottesville Transit Center and was part of a larger performance created by Kathryn Schetlick and Veronica Hart.

- ⋆ *Untitled Dance Score*

Clough Commons, Georgia Institute of Technology, Atlanta, GA

Automaton — April 2013

A contemporary dance performance exploring notions – from academic thesis – of style, robotics, and automated behavior. The performance and related research was featured in an article on the Georgia Tech homepage.

- ⋆ I
- ⋆ II
- ⋆ III
- ⋆ IV

Schwartz Center, Emory University, Atlanta, GA

Fieldwork Workshop for Local Artists — 2010-2013

- ⋆ *Incendiary* — Fall 2010
- ⋆ *Balance* — Spring 2011
- ⋆ *The edge of* — Summer 2011
- ⋆ *Untitled* — Fall 2011

The Ferst Center for the Arts, Georgia Institute of Technology, Atlanta GA

So You Think Tech Can Dance?

- ⋆ *Reverie* — October 2009
- ⋆ *Spinning Plates* — October 2010

Berlind Theater, Princeton University, Princeton, NJ

Senior Thesis Show *Pleiades* March 2009

⋆ *Solo* with Francesca Butler, Chang Chan, Whitney Davis, Fletcher Heisler, Lindsey Hornbuckle, Natacha Jamar, Steven Kamara, Zachary Morse, Nikhil Pereira-Kamath, Brandon Racusin, Lara Yuan, Michael Yang

⋆ *Trio*

Spring Dance Festival February 2008

⋆ *Fanette* with Laura Robertson

Merce Cunningham Studios, New York, NY

Ivies@Cunningham March 2008

⋆ *Fanette* with Laura Robertson

Hagan Dance Studio, Princeton University, Princeton, NJ

Select Student Works February 2008

⋆ *Reverie*

Student Theses

A. Bushman. "Evaluation of Human-like Teleoperated Robot Motion Through Preference, Perception, and Performance-based Studies" *M.S. Thesis, University of Illinois at Urbana-Champaign.* Spring 2020.
⋆ Associate at a med-tech consulting firm.

U. Huzaifa. "Control and Hardware Design for a Bipedal Robot Via Planar Modeling with Empirical Perception Studies Leveraging Embodied Movement Analysis." *Ph.D. Thesis, University of Illinois at Urbana-Champaign.* Fall 2019.
⋆ Visiting Assistant Professor at Rose-Hulman Institute of Technology.
⋆ Assistant Professor at DePaul University.

R. Kaushik. "Developing and Evaluating a Model For Human Motion to Facilitate Low Degree-Of-Freedom Robot Imitation of Human Movement." *M.S. Thesis, University of Illinois at Urbana-Champaign.* Spring 2019.
⋆ Accepted to Siemens USA internship and CMU Robotics PhD Program.

I. Pakrasi. "Towards expressive mobile robots." *M.S. Thesis, University of Illinois at Urbana-Champaign.* Summer 2018.
⋆ Accepted technology consulting position at Ernst and Young.

M. Heimerdinger. "Influence of Environmental Context on Affect Recognition of Stylized Movements." *M.S. Thesis, University of Illinois at Urbana-Champaign.* Fall 2017.
⋆ Accepted technology consulting position at Kimley Horn.

A. Jang Sher. "An Embodied, Platform-invariant Architecture for Robotic Spatial Commands." *M.S. Thesis, University of Illinois at Urbana-Champaign.* Spring 2017.
⋆ Accepted program manager position at Microsoft.

U. Huzaifa. "Movement Theory Inspired Robot Motion Strategies and Design of a Bipedal Walker." *M.S. Thesis, University of Illinois at Urbana-Champaign.* Summer 2016.
⋆ Continued to PhD studies at UIUC.

Y. Sheng "Implementation of a Multiple Switch Time Approach to Style-Based Motion Segmentation." *M.S. Thesis, University of Virginia.* Fall 2014.
⋆ Continued to PhD studies at UVA.

Keynote Talks

ADVENTOR Week Montreal, CAN June 2026

Keynote speaker at NSERC CREATE's annual meeting hosted by the McGill University.
Choreobotics, Movemes, and a Periodic Table for Choreography

Moving with Screens and Machines College Park, MD April 2024

Keynote speaker at "Moving With Screens + Machines: A Symposium on Embodied Practices and Technology" hosted by the University of Maryland Immersive Media Design Program, the School of Theatre, Dance, and Performance Studies and Arts for All.
Bodies Dancing in Unison: The Illusion of Imitation and Its Impact on Robotics and AI

RUN CMD Alberta, CAN via Zoom April 2023

Keynote speaker at retreat for Computational Media Design Department of University of Calgary at Barrier Lake Research Station (via Zoom).
Bodies Dancing in Unison: The Illusion of Imitation and Its Impact on Robotics and AI

Society for the Neuroscience of Creativity San Francisco, CA March 2023

Keynote speaker at Society for the Neuroscience of Creativity's Annual Meeting "Creativity and Artificial Intelligence" at the University of California — San Francisco.
Bodies Dancing in Unison: The Illusion of Imitation and Its Impact on Robotics and AI

Creative Collaborations Be'er Sheva, Israel May 2022

Keynote speaker for "Creative Collaborations: Art, Design and Human-Robot Interaction" a "robo-exoticism"-themed workshop co-hosted between Ben-Gurion University and Bezalel Academy of Arts and Design of Jerusalem
Bodies Dancing in Unison: The Illusion of Imitation and Relaxed Notational Abstractions That Capture It

MIG 2020, Clemson, SC via Zoom October 2020

Keynote speaker at the 13th Annual ACM SIGGRAPH Conference on Motion, Interaction and Games (MIG)
Hammers, Paintbrushes, Robots, and Glitter: Embracing Duality in Movement Design and Creating New Tools for Expression with Artist-Engineer Teams

Art, Technology, and Culture Colloquium, Berkeley, CA

Long-running colloquium held at Berkeley Art Museum and Pacific Film Archive at the University of California – Berkeley January 2020
Dancing With Robots: Expressivity in Natural and Artificial Systems

Invited Talks

Drexel University, Philadelphia, PA January 2026

Choreobotics: At the Intersection of Robotics and Dance
Journeys in Arts & Sciences

Stanford University, Online January 2026

Choreobotics: At the Intersection of Robotics and Dance
CS 334: Robots and Arts: Creative Applications and Projects

Laban/Bartenieff Institute of Movement Studies, Online March 2024

What's all this talk about AI? Symposium
Movement Notation and AI: Capturing Salient Moments of Human Experience for Machine Learning

Princeton University, Princeton, NJ October 2023

A Movement Choir for Naomi
Creative Convergence: Workshop in Celebration of Naomi Leonard's 60th Birthday

Cornell University, Online April 2022

Group talk for the Robots and Groups Lab led by Malte Jung.
Bodies Dancing in Unison: The Illusion of Imitation and Relaxed Notational Abstractions That Capture It

HRI 2022 Workshops, Online March 2022

Invited speaker at Workshop On Joint Action, Adaptation, And Entrainment In Human-Robot Interaction

University of Pennsylvania, Philadelphia, PA March 2022

Group talk for Kod*lab, a subsidiary of the GRASP Lab.
Hammers, Paintbrushes, Robots, Ghosts, and Glitter: Embracing Duality in Movement Design and Creating New Tools for Expression with Artist-Engineer Teams

Oregon State University, Online to Corvalis, OR October 2021

Invited speaker for OSU robotics group
Hammers, Paintbrushes, Robots, Ghosts, and Glitter: Embracing Duality in Movement Design and Creating New Tools for Expression with Artist-Engineer Teams

Southern Appalachian Sci. and Eng. Fair, Online September 2021

Invited speaker for high school science and engineering fair participants.
Hammers, Paintbrushes, Robots, and Glitter: Embracing Duality in Movement Design and Creating New Tools for Expression with Artist-Engineer Teams

Rensselaer, Online from Troy, NY March 2021

Invited speaker co-hosted by Curtis R. Priem Experimental Media And Performing Arts Center (EMPAC), Electrical, Computer, and Systems Engineering Department, and the Industrial and Systems Engineering Department.
Hammers, Paintbrushes, Robots, and Glitter: Embracing Duality in Movement Design and Creating New Tools for Expression with Artist-Engineer Teams

Raytheon Technologies, Online September 2020

Invited speaker at the Raytheon Technologies Systems Engineering & Architecture Technology Network Symposium.
Dancing with Robots: Creating Expressive Robotic Systems with Artist-Engineer Teams

ABC Robotics Initiative, Ben-Gurion University [Canceled, Covid-19]

Invited speaker at Agricultural, Biological and Cognitive Robotics (ABC) Robotics Initiative at Ben-Gurion University.

University of Denver, Denver, CO via Zoom

Mechanical and Materials Engineering Department. March 2020
Dancing With Robots: Expressivity in Natural and Artificial Systems

University of Tennessee, Knoxville, TN

Department of Electrical Engineering and Computer Science February 2020
Dancing With Robots: Expressivity in Natural and Artificial Systems

University of California – Berkeley, Berkeley, CA

CITRIS People and Robots Initiative (CPAR) Seminar January 2020
Dancing with Robots: Designing Expression with Machines in Context

University of Illinois at Urbana-Champaign, Champaign, IL November 2019

Department of Psychology
Social-personality-organizational Group Brown Bag Seminar
Prediction of Human Affective Response to Choreographed Motion Stimuli

Workshop on Articulated Actuation Towards Human Capabilities for Robots, Macau, China November 2019

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
Understanding Human-like Movement Through the Lens of Expressivity, Complexity, and Information

University of Illinois at Urbana-Champaign, Urbana, IL

Robotics@UIUC Seminar Series September 13, 2019
Questions About Composition with Natural and Artificial Bodies

Modeling for Robot-assisted and Humanoid Locomotion, New York, NY

Conference, Special Session August 16, 2019
Computer Methods in Biomechanics and Biomedical Engineering (CMBBE)
Toward an Expressive Bipedal Robot: Variable Gait Generation and Validation on a Planar Compass Biped and a Core-Driven Planar Biped Across Multiple Environments

University of California – Davis, Davis, CA

Computer Science & Cinema and Digital Media Seminar May 23, 2019
Dancing With Robots: Expressivity in Natural and Artificial Systems

University of Washington, Seattle, WA

Robotics Colloquium May 17, 2019
Dancing with Robots: Designing Expression with Machines in Context

University of Washington, Seattle, WA

Design. Use. Build. (DUB) Seminar May 15, 2019
Dancing With Robots: Expressivity in Natural and Artificial Systems

The Cooper Union, New York, NY

Mechanical Engineering Departmental Seminar April 23, 2019
Dancing With Robots: Expressivity in Natural and Artificial Systems

Purdue University, West Lafayette, IN

Mechanical Engineering Departmental Seminar February 8, 2019
Dancing With Robots: Expressivity in Natural and Artificial Systems

Princeton University, Princeton, NJ

Mech/Aero Engineering Departmental Seminar November 9, 2018
Dancing With Robots: Expressivity in Natural and Artificial Systems

Siemens Corporate Technology, Princeton, NJ

Seminar November 8, 2018
Robotics, Automation, and Dance (RAD) Lab and AE Machines, Inc

Beckman Institute, University of Illinois, Urbana, IL

Curious and Eclectic Seminar Series November 2, 2018
Dancing With Robots: Expressivity in Natural and Artificial Systems

Workshop on Humanoid Robot Falling: Fall Detection, Damage Prevention, and Recovery Actions, Madrid, Spain

2018 IEEE/RSJ International Conference on Intelligent Robot and Systems (IROS 2018) October 1, 2018
Human Fall Strategies: The Bartenieff Principle of Weight Shift From the Pelvic Core and Its Role in Producing an Expressive Bipedal Walker

Intrinsically Motivated Artificial Intelligence (IMAI), Arlington, VA

ISAT/DARPA Workshop June 18, 2018
On Expressive Robotic Systems (aka Dancing Robots)

Midwest Robotics Conference, Chicago, IL

Toyota Technological Institute June 15, 2018
On Expressive Robotic Systems (aka Dancing Robots)

CODAME Art + Tech Festival, San Fransisco, CA

The Midway June 6, 2018
On Expressive Robotic Systems (aka Dancing Robots) with an Example
Joint talk with Catie Cuan, Artist-in-residence

Robots and Art Forum, Brisbane, Australia

IEEE Conference on Robotics and Automation (ICRA) May 24, 2018
On Expressive Robotic Systems (aka Dancing Robots)

Laban Webinar Series, Zoom Webinar

Inspirees Institute, LIMS, CAET May 7, 2018
Choreographic Abstractions for Embodied Design of Heterogeneous Robotic Behavior

Georgia Institute of Technology, Atlanta, GA

Georgia Robotics and Intelligent Systems (GRITS) Lab April 19, 2018
On Expressive Robotic Systems (aka Dancing Robots) with an Example
Joint talk with Catie Cuan, Artist-in-residence

Distributed, Collective Computation in Biological and Artificial Systems, Ashburn, VA

Janelia Research Campus March 19, 2018
On Expressive Robotic Systems (aka Dancing Robots)

Brown University, Providence, RI

Humanities-centered Robotics Initiative March 9, 2018
On Expressive Robotic Systems (aka Dancing Robots) with an Example
Joint talk with Catie Cuan, Artist-in-residence

Champaign Public Library, Champaign, IL

Tuesdays at Ten Speaker Series September 26, 2017
Choreographic Abstractions for Embodied Design of Heterogeneous Robotic Behavior

The What Without the How: Specifying Planning Problems in Robotics, Cambridge, MA

Robotics: Systems and Science (RSS) July 16, 2017
Demonstration as Specification

Purdue University, West Lafayette, IN

Robotics Seminar December 9, 2016
Choreographic Abstractions for Embodied Design of Robotic Behavior

Workshop on Human Movement Understanding and Robotics, Daejeon, South Korea

2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2016) October 14, 2016
Choreographic Abstractions for Embodied Design of Robotic Behavior

University of Maryland, College Park, MD

Brain and Behavior Initiative Seminar April 7, 2016
Choreographic Abstractions for Embodied Design of Robotic Behavior

Northwestern University, Evanston, IL

Master of Science in Robotics Seminar December 1, 2015
Choreographic Abstractions for Embodied Design of Robotic Behavior

Jefferson County Schools, New Market, TN

STEM Enrichment Speaker for Young Girls May 9, 2015
Abstractions for Design-by-Humans of Heterogeneous Robotic Behaviors

Bard College, Annandale-On-Hudson, NY

Computer Science April 30, 2015
Abstractions for Design-by-Humans of Heterogeneous Robotic Behaviors

University of Illinois at Urbana-Champaign, Urbana-Champaign, IL

Department of Mechanical Science and Engineering March 5, 2015
Abstractions for Design-by-Humans of Heterogeneous Robotic Behaviors

University of Virginia, Charlottesville, VA

SWE High School Visitation Weekend February 28, 2015
Abstractions for Design-by-Humans of Heterogeneous Robotic Behaviors

University of Akron, Akron, OH

Integrated Bioscience Seminar Series February 20, 2015
Abstractions for Design-by-Humans of Heterogeneous Robotic Behaviors

University of Virginia, Charlottesville, VA

Design and Data Analysis (DADA) Lecture Series
Quantitative Psychology Group January 22, 2015
Abstractions for Design-by-Humans of Heterogeneous Autonomous Behaviors

LAAS-CNRS, Toulouse, France

Workshop on Movement Notations and Robot Motions November 13, 2014
Abstractions for Design-by-Humans of Heterogeneous Autonomous Behaviors

James Madison University, Harrisonburg, VA

Society of Women Engineers Seminar October 27, 2014
From Data to Doing: Human-Inspired Autonomous Robotic Systems

University of Virginia, Charlottesville, VA

Society of Women Engineers, Virginia Chapter Conference September 28, 2014
From Data to Doing: Human-Inspired Autonomous Robotic Systems

Sweet Briar College, Sweet Briar, VA

Engineering Department Seminar September 24, 2014
From Data to Doing: Human-Inspired Autonomous Robotic Systems

University of Virginia, Charlottesville, VA

Center for Risk Management of Engineering Systems September 12, 2014
From Data to Doing: Human-Inspired Autonomous Robotic Systems

University of Illinois at Urbana-Champaign, Urbana-Champaign, IL

Decision and Control Seminar September 10, 2014
From Data to Doing: Human-Inspired Autonomous Robotic Systems

University of Virginia, Charlottesville, VA

School of Engineering and Applied Science Open House April 11, 2014
From Dance to Robots: Style-based Abstractions for Human-Inspired Autonomous Systems

University of Virginia, Charlottesville, VA

Wireless Health @ UVA October 4, 2013
From Data to Doing: Human-Inspired Autonomous Robotic Systems

Emily Carr University, Vancouver, CAN

Moving Stories Residency May 22, 2013
Choreographic Abstractions for Robotics

The Square Room, Knoxville, TN

PechaKucha, 20x20 Talk April 25, 2013
Robots and the Arts

University of Virginia, Charlottesville, VA

Systems and Information Engineering Department April 11, 2013
Choreographic Abstractions for Automation, Robotics, the Arts, and Education

University of Illinois at Chicago, Chicago, IL

Department of Electrical and Computer Engineering April 9, 2013
Choreographic Abstractions for Automation, Robotics, the Arts, and Education

George Mason University, Fairfax, VA

Department of Electrical and Computer Engineering April 5, 2013
Choreographic Abstractions for Automation, Robotics, the Arts, and Education

Clemson University, Clemson, SC

Department of Mechanical Engineering March 7, 2013
Choreographic Abstractions for Automation, Robotics, the Arts, and Education

Rutgers University, New Brunswick, NJ

Department of Mechanical and Aerospace Engineering March 4, 2013
Choreographic Abstractions for Automation, Robotics, the Arts, and Education

University of Memphis, Memphis, TN

Department of Electrical and Computer Engineering February 13, 2013
Choreographic Abstractions for Automation, Robotics, the Arts, and Education

Georgia Institute of Technology, Atlanta, GA

NeuroLab January 28, 2013
Choreographic Abstractions for Style-Based Robotic Motion

Arizona State University, Tempe, AZ

School of Arts Media and Engineering January 27, 2012
Style-Based Robotic Motion

Georgia Institute of Technology, Atlanta, GA

Decision and Control Student Symposium April 29, 2011
Automatic Generation of Balletic Motions

Invited Panels

Moving With Screens + Machines, College Park, MD

Invited panelist: Embodied Futures April 2024
Hosted by the University of Maryland Immersive Media Design Program, the School of Theatre, Dance, and Performance Studies and Arts for All.

IEEE International Conference on Robotics and Automation, *Online*

Sentimental Machines: Celebrating a Decade of Art and Robots at ICRA June 2021
Invited panelist: Shifting Shapes of Collaboration

International Foundation for Robotics Research, *Online*

Art and Robots September 2020
Invited panelist for IFRR Robotics Global Colloquia Series.

College Art Association (CAA) Annual Conference, Chicago, IL

ARTificiality: Aesthetics of Embodiment in Digital Art February 2020
Questions About Composition with Natural and Artificial Bodies

University of Illinois at Urbana-Champaign, Champaign, IL

EnterpriseWorks, Research Park November 2019
Panel: NSF SBIR Workshop Series

Foundations of Effective Leadership, Princeton, NJ

Outdoor Action, Princeton University June 2019
Alumni panel

Social Media For Scientists: #TweetYourScience, Urbana, IL

University of Illinois at Urbana-Champaign November 2018
Expert panel

5^{th} Int. Conf. on Movement and Computing (MOCO), Genoa, Italy

Casa Paganini Infomus June 2018
Provocations: What escapes computation in interactive performance?

Living at the Intersection Symposium, Princeton, NJ

Princeton University April 2018
"Some of the Questions We Ask in The RAD Lab" *Asking Questions organized by Jeff Whetstone and Aynsley Vandenbroucke*

Marvelous Fabrications, Urbana, IL

University of Illinois at Urbana-Champaign March 2018
"Interrogating Robots from the Middle Ages to the Present" *Panel with 'Respondent' Elly Truit, Bryn Mawr College, accompanied by robot demonstrations*

Conf. for Research on Choreographic Interfaces (CRCI), Providence, RI

Brown University March 2018
"Working with an Artist-in-Residence in a Robotics Lab": *Moderated by RPI EMPAC curator Ashley Ferro-Murray.*
"The Limit Does Not Exist" *Moderated by Christina Wallace and Cate Scott Campbell and also recorded as podcast.*

Oscillations, Evanston, IL

Northwestern University March 2018
Convergence: The future of art, neuroscience and immersive technologies

Conf. for Research on Choreographic Interfaces (CRCI), Providence, RI

Brown University March 2017
Evening Panel with Featured Participants

Conf. for Research on Choreographic Interfaces (CRCI), Providence, RI

Brown University March 2016
"The VR Stack" *Discuss use of virtual reality for crafting robotic movement patterns and testing with humans in NSF ASPIRE project.*

Princeton Preview: Admitted Students Weekend, Princeton, NJ

Princeton University April 2009
"Senior Thesis Panel"

Invited/Special Issues, Sessions, and Workshops

R. B. Adams Jr., S. Bhattacharyya, A. LaViers, R. Tsachor,J. Z. Wang. "Workshop on Bodily Expression of Emotions (BEEU)." Workshop at *40th Annual AAAI Conference on Artificial Intelligence (AAAI)* 2026.

P. Martin, E. Jochum, and A. LaViers. "Pulling the Strings on Creative Collaborations: A Retrospective on Puppetry, Choreography, and Control" Workshop at *IEEE International Conference on Robotics and Automation (ICRA)* 2025.

C. Maguire, A. Bacula, and A. LaViers. "Toward a Body-language Dataset: Revealing the Meaning of Bodily Expression of Human Counterparts for Robots Using Dance Theory and Human-annotated Benchmark Datasets" Workshop at *IEEE International Conference on Robotics and Automation (ICRA)*. 2025.

M. Gummadi, D. Herath, D. Krieger, A. LaViers, S. W. Leigh, N. Staggs, R. Tsachor, and J. Wang. "Speed-dating to long-term relationships: Art-robot Residencies Enabled by Common Language." Special Issue Research Topic with *Frontiers Robotics and AI*. 2025.

M. Gummadi, D. Herath, D. Krieger, A. LaViers, S. W. Leigh, N. Staggs, R. Tsachor, and J. Wang. "Speed-dating to long-term relationships: Art-robot Residencies Enabled by Common Language" Workshop at *IEEE International Conference on Robotics and Automation (ICRA)* 2024.

A. LaViers, C. Maguire, R. Tsachor, and J. Wang. "Tutorial on Movement Notation: An Interdisciplinary Methodology for HRI to Reveal the Bodily Expression of Human Counterparts via Collecting Annotations from Dancers in a Shared Data Repository" Workshop at *ACM/IEEE International Conference on Human-robot Interaction (HRI)*. 2024.

A. LaViers, J. Wang, D. Herath, and A. Nilles "Robotics and Art: Automating Expressions" Workshop at IEEE International Conference on Robotics and Automation (ICRA) 2022.

P. Alves-Oliveira, M. Cakmak, G. Gordon, P. Kahn, A. LaViers, and V. Sarathy. "Creativity and Robots." Workshop at International Conference on Social Robotics (ICSR) for Special Issue Research Topic with *Frontiers*. 2020.

P. Alves-Oliveira, M. Cakmak, G. Gordon, P. Kahn, A. LaViers, and V. Sarathy. "Creativity and Robots." Special Issue Research Topic with *Frontiers Robotics and AI*. 2020.

N. Fitter, H. Knight, and A. LaViers."Performing Arts Robots & Technologies, Integrated (PAR-TI)." 4-hour Workshop. *Robotics: Science and Systems (RSS)*. Corvalis, OR via Zoom – Virtual Conference. 2020.

A. LaViers and C. Cuan. "Merging Artistic and Research Practices Toward More Expressive Robotic Systems." 5-hour Workshop. *28th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)*. New Dehli, India. 2019.

A. LaViers and K. Ozcimder. "Experimenting with Movement Observation." Half-day Workshop. *Robotics, Science, and Systems (RSS)*. Cambridge, MA. 2017.

A. LaViers. "Embodied Experience and Movement Observation for Roboticists." Half-day Workshop. *Robotics, Science, and Systems (RSS)*. Ann Arbor, MI. 2016.

A. LaViers and N. Leonard. "Controls and Art." Invited Session. *American Control Conference (ACC)*. Montreal, CAN. 2012.

N. Leonard, A. LaViers, and S. Marshall. "Feedback, interaction and movement in human groups: A participatory event." Special Session. *American Control Conference (ACC)*. Montreal, CAN. 2012.

A. LaViers and M. Egerstedt. Invited Session: "Controls and Art." *American Control Conference (ACC)*. San Francisco, CA. 2011.

Curation and Production

2026 Collection at the RAD Lab January 2026

Assembled year-long gallery show at the RAD Lab, featuring work by Zelda Thayer-Hansen, Maddie Jones Rodriguez, Kate Ladenheim, Zach Duer, Eric Handman, Scotty Hardwig, Lewis Colburn, Louisa Pancoast, Nialah Wilson-Small, Peter Schaldenbrand, Jim McCann, and Jean Oh.

Live at the Rialto! Arts in Robotics May 2025

Co-chaired Arts in Robotics program for ICRA '25. Organized public performance at the Rialto Theater at Georgia State University featuring Merritt Moore, Naomi Fitter, Nialah Wilson-Small, Louisa Pancoast, and Smashworks Dance. The program also featured a peer-reviewed special session, performance and installation by Gil Weinberg, keynote by Heather Knight, networking dinner, community building meeting, workshop, and tutorial.

Robotics and Art at 319 May 2022

Co-organized with Diedra Krieger a month-long series of shows of robotic art at Philadelphia-based art galleries sponsored by the RAD Lab and ICRA '22. Guest-curated "Deflating Heroics" by Kate Ladenheim for the atrium space.

Workshops and Symposia

Pulling the Strings on Creative Collaborations: A Retrospective on Puppetry, Choreography, and Control May 2025

Workshop co-organized with Patrick Martin and Elizabeth Jochum
ICRA 2025, Atlanta, Georgia

Toward a Body-language Dataset: Revealing the Meaning of Bodily Expression of Human Counterparts for Robots Using Dance Theory and Human-annotated Benchmark Datasets May 2025

Tutorial co-organized with Cat Maguire and Alexandra Bacula funded by National Science Foundation grant #2234195
ICRA 2025, Atlanta, Georgia

Speed-dating to long-term relationships: Art-robot Residencies Enabled by Common Language May 2024

Workshop co-organized with Meghna Gummadi, Damith Herath, Diedra Krieger, Sang-won Leigh, Nikkita Staggs, Rachelle Tscahor, James Wang
Tutorial co-organized with Cat Maguire and Alexandra Bacula funded by National Science Foundation grant #2234195
ICRA 2024, Yokohama, Japan via Zoom

Book Launch: Making Meaning with Machines: Somatic Strategies, Choreographic Technologies and Notational Abstractions through a Laban/Bartenieff Lens May 2024

The International Association for Creative Arts in Education and Therapy (IACAET)
Online.

Designing Bodies to Dance: Toward Platform-Invariant Scoring Systems for Postural and Gestural Bodily Movement. April 2024

Invited workshop at "Moving With Screens + Machines: A Symposium on Embodied Practices and Technology" hosted by the University of Maryland Immersive Media Design Program, the School of Theatre, Dance, and Performance Studies and Arts for All.

Tutorial on Movement Notation: An Interdisciplinary Methodology for HRI to Reveal the Bodily Expression of Human Counterparts via Collecting Annotations from Dancers in a Shared Data Repository March 2024

Workshop co-organized with Cat Maguire, Alexandra Bacula, James Wang, and Rachelle Tsachor, funded by National Science Foundation grant #2234195 and featuring Boston Dynamics collaborator choreographer Monica Thomas.
HRI 2024, Boulder, CO

Camp LBMS June 2023

Presentation with Cat Maguire at the Laban/Bartenieff Institute of Movement Studies online event.
Outlining the Time Component and Establishing the BESST System

BGU Design Workshop May 2022

Robotics and dance workshop for interdisciplinary group, focused on design. [Canceled.]
Let's Move, Notate, and Create Together: Using Our Innate Imitation Abilities to Explore What Robots Can Express

HRI 2022. Online March 2022

Accepted paper at HRI in Public Spaces Workshop.
"The Use of Breath in a Public Robotic Art Installation: Movement Analysis Reveals Rich Kinesthetic Exchange Between Human and Robot" by K. Ladenheim, A. LaViers, and C. Maguire.

Robotics x Arts Exhibition: Opportunities and Issues in Robotics Applied in the Arts. Online

Robotics, Science, and Systems (RSS) July 2021
Invited artist presenter

Artificial Intelligence in Digital Culture. Tempe, AZ

Arizona State University August 2020
Invited expert advising the School of Arts, Media and Engineering at a half-day virtual conference on incorporating AI into the humanities

Conference for Research on Choreographic Interfaces (CRCI). Providence, RI

Brown University. March 2020
Featured participant, on panel discussing *Babyface* with Kate Ladenheim

ORD Camp, Chicago, IL

Google Headquarters – Chicago January 2020
Invited interdisciplinary "unconference"
Presented a session on "Movement Notation"

Affect Modeling, Evaluation, and Challenges in Intelligent Cars. Macau, China

2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019) November 2019
Presenting concept "Using Affective Measurements of Pedestrian Gait to Improve Autonomous Vehicle Performance in Mixed Driver Settings" co-authored with Katherine Driggs-Campbell. (to appear)

Microsoft Technology Center, Grand re-opening, Chicago, IL

Aon Center, downtown Chicago October 2019
Presented an art installation that included a Kinect-powered photobooth (a caali, LLC prototype) at MTC Chicago grand-reopening.

DreamWakers Strategy Summit, Washington, DC

DreamWakersHQ October 2019
Invited participant at the first strategy summit for online-education/edtech non-profit DreamWakers.

Workshop on Teleoperation of Humanoid Robots. Toronto, Canada

2019 IEEE-RAS International Conference on Humanoid Robots (Humanoids 2019) November 2019
Paper presentation: "Generating Human-Like Motion on Robots Through Teleoperation in Functional Tasks" A. Bushman, M. Asselmeier, J. Won, and A. LaViers.

US Robotics Roadmap Workshop. Chicago, IL

UIUC Illini Center September 2019
Updating the US robotics roadmap, by invitation only, selection on the basis of 1.5 page whitepaper. Workshop led by Nancy Amato.

RAD Lab Technology Playground. Cleveland, OH

DanceUSA Conference. June 2019
An invited, extended hands-on session with new and emerging technologies that are intersecting with movement and dance work, including virtual reality, motion capture, robots and more in concert, site-specific, and screen dance. This event is designed to share the experience of working with emerging technology and how such investigation can inform artistic practice.

Greetings/Goodbyes Workshop, Seattle, WA

University of Washington May 2019
Embodied Movement Workshop co-led with Elin Bjorling
Project EMAR at the University of Washington

Symposium on "Movement that Shapes Behaviour" Falmouth, UK

Artificial Intelligence and Simulation of Behaviour (AISB) 2019 March 2019
Extended abstract: R. Kaushik and A. LaViers, "Using verticality to classify motion: analysis of two Indian classical dance styles."

Conference for Research on Choreographic Interfaces (CRCI). Providence, RI

Brown University. February 2019
Invited participant.

Modeling And Control Of Dynamic Legged Locomotion: Insights From Template (Simplified) Models, Madrid, Spain

2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2018) October 1, 2018
Paper, presentation, poster: "An Embodied Movement Inspired Bipedal Robot Design with Core-Located Actuation" U. Huzaifa, C. Maguire, and A. LaViers.

Assistance and Service Robotics in a Human Environment, Madrid, Spain

2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2018) October 1, 2018
Paper, presentation: "An Expressive Layer for Mobile Robots" I. Pakrasi and A. LaViers.

TED, New York, NY

TED Headquarters May 31, 2018
Attendee at live TED Residency Talks, featuring RAD Lab Artist-in-residence and TED Resident, Catie Cuan

Robots and Art Forum, Brisbane, Australia

IEEE Conference on Robotics and Automation (ICRA) May 24, 2018
Paper, presentation: "Time to Compile: Compliance Between Artistic Inquiry and Research Questions" C. Cuan and A. LaViers.

Conference for Research on Choreographic Interfaces (CRCI). Providence, RI

Brown University. March 2018
Featured participant for two panels and showing of in-progress work.

Creativity Workshop, Urbana, IL

Gies College of Business, UIUC December 14, 2017
Participant

Minimality and Trade-offs in Automated Robot Design, Cambridge, MA

Robotics: Science and Systems (RSS) July 16, 2017
Comment, presentation: "Expressivity: Form vs. Function"

Conference for Research on Choreographic Interfaces (CRCI). Providence, RI

Brown University. March 2017
Invited Participant for an evening panel.
Led breakout discussion: "Arts and Money" *Brainstorm various approaches to making money and financing artistic projects (contrasting to technical projects).*

Combining Optimal Control, Reinforcement Learning and Movement Primitives to Achieve Better Robot Motions, San Francisco, CA

IEEE International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAR) December 13, 2016
Poster: "Patterns of Body Organization Implemented for a 4-limb robot" U. Huzaifa, A. LaViers

Humans, Machines, and the Future of Work, Houston, TX

De Lange Conference X December 5, 2016
Poster: "Function and Expression Within Recipe" A. LaViers, K. Bradley

Workshop on Artistically Skilled Robots, Daejeon, South Korea

2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2016) October 14, 2016
Paper, poster: "Design of perceptually meaningful quality in robotic motion" L. Bai, J. Bellona, L. Dahl, and A. LaViers.

Human Movement Understanding and Robotics, Daejeon, South Korea

2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2016) October 14, 2016
Presentation: "A platform-invariant architecture for high-level spatial robotic commands" A. Jang Sher, U. Huzaifa, V. Jain, J. Li, A. LaViers

Workshop on Automation Supporting the Elderly, Daejeon, South Korea

2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2016) October 9, 2016
Presentation: "Laban-Inspired Task-Constrained Expressive Motion Generation for UAVs Supporting Elderly Independent Residence" H. Cui, C. Maguire, A. LaViers

Conference for Research on Choreographic Interfaces (CRCI). Brown University. March 2016.

Invited Participant for a panel and dinner.

The VA Academy of Science, Eng., and Medicine (VASEM). Washington D.C.

National Academy of Science December 2014
The Virginia Summit on Science, Engineering, and Medicine: Big Data
Poster: "Somatic Theory and High-level Robotic Control: Ongoing work in the Robotics, Automation, and Dance (RAD) Lab." A. LaViers

5^{th} *Workshop on Formal Methods for Robotics and Automation.* Berkeley, CA

Robotics and Science Systems (RSS) June 2014
Poster: "Towards Verified Planar Formation Control Algorithms by Composition of Primitives." L. Bobadilla, T. T. Johnson, A. LaViers

2^{nd} *NSF Wkshp on Formal Composition of Motion Primitives.* Philadelphia, PA

CPS Week. May 2013
Paper, presentation: "Stylistic Sequencing: Choreographic Abstractions for Robotic Motion Planning." A. LaViers and M. Egerstedt

Press and Podcasts

S. Marsala. "There's art in how humans and robots move: Now, they're teaching each other" *Chestnut Hill Local*. December 18, 2025.

J. Heimlich. "Dance Artists Are Playing a Significant Role in the Development of Robotic Technologies" *Dance Magazine*. Cover Story. November 3, 2025.

C. Asher. "Episode 124 with Amy LaViers" *Robot Talk Podcast*. June 6, 2025.

R. Wharton. "Dancing with robots: IEEE fuses automation and fine arts" *ArtsATL*. May 27, 2025.

E. Ackerman. "Making Boston Dynamics' Robots Dance The tech and theory of funky robotics with choreographer Monica Thomas and the RAD Lab's Amy LaViers." *Chatbot Podcast IEEE Spectrum*. October 1, 2023.

O. Whang. "This Robot Can Paint. But Is It Art?" *The New York Times*. May 2, 2023.

C. Cuan. "Dances with Robots: Choreographing, Correcting, and Performing with Moving Machines." The Drama Review (TDR), Volume 65, Issue 1, pp. 124 - 143. Cambridge University Press. March 18, 2021.

S. Skybetter. "How Choreography Can Help Robots Come Alive" *Wired*. February 7, 2021.

N. Loeffler-Gladstone. "The New Museum's NEW INC's EdgeCut Performance Series Curated by Heidi Boisvert and Kat Mustatea." *The Dance Enthusiast*. December 1, 2020.

G. Curtis. "Dances With Robots, and Other Tales From the Outer Limits." *The New York Times*. November 5, 2020.

R. Latanision, C. Fletcher, and A. LaViers. "An Interview with..." *The Bridge*. National Academy of Engineering. March 20, 2020.

S. Skybetter. "What Are the Potential Military Applications of Teaching Robots to Dance?" *Dance Magazine*. February 17, 2020.

S. Woods. "Q&A: How can the tech world leverage dancers' creativity?" *Dance Magazine*. January 8, 2020.

M. Holloway. "RAD Lab, artist-in-residence collaborate to combine art and science." *Grainger College of Engineering*. August 8, 2019.

Julie Rose (live interview). "Top of Mind," *Bringham Young University (BYU) Radio*. February 28, 2019.

T. Tucker, MechSE Communications. "LaViers argues for more human-like robotic motion" *Department of Mechanical Science and Engineering*. February 26, 2019.

J. Goodrich. "Amy LaViers, a Mechanical Engineer Working in the Arts: How she's using her STEAM education to help improve robots used by DARPA" IEEE Member Profile, *The Institute: The IEEE News Source*. January 14, 2019.

E. Innes. "How Tweet It Is! I-MRSEC Workshop Helps Scientists Incorporate Twitter into Their Scientific Communication Repertoire" *I-Stem Education Initiative*. November 20, 2018.

A. Herman. "ARTOBOTS: CODAME's Art + Tech Festival @ The Midway". *State of the Art*. July 6, 2018.

I. Malatesta. "Our Changing Relationship With Robots." *Medium* for CODAME Arts+Tech Festival. April 24, 2018.

A. Morris. "Meet Amy LaViers: The Choreographer Engineer Teaching Robots To Dance For DARPA" *Forbes*. April 4, 2018.

C. Wallace and C. Scott Campbell"The Limit Does Not Exist in ChoreoTech": *Forbes*. March 19, 2018.

E. Innes. "Mattia Gazzola's Paper2Tree: A 3-Step Program to Give Back to Your Community: Publish a Paper; Plant a Tree; Perform a School Outreach" *I-Stem Education Initiative*. December 1, 2017.

MechSE Communications. "LaViers steps up research on robotic choreography with extended DARPA award" *Department of Mechanical Science and Engineering*. June 13, 2017.

E. Innes. "LaViers' RAD Lab Uses Robots/Dance to Study Movement, Provide Automation". *I-Stem Education Initiative*. September 8, 2016.

E. Scott. "Using dance to design robotics control systems." *The Daily Illini*. March 28, 2016.

MechSE Communications. "DARPA research uses human movement concepts to improve robotic control systems." *Department of Mechanical Science and Engineering*. January 12, 2016.

J. Markoff. "As Aging Population Grows, So Do Robotic Health Aides." *The New York Times*. December 4, 2015.

C. Oehler, MechSE Communications. "Passion for dance moves new professor toward improved control systems." *Department of Mechanical Science and Engineering.* November 17, 2015.

A. Bisbort. "Do the Robot." *UVA Alumni Magazine.* Fall 2014.

M. Jaffee. "Passion for Dance and Engineering Leads Amy LaViers into Robotics Research." *UVA Today.* June 9, 2014.

L. Klipp. "Boogie Bots." *Georgia Tech Alumni Magazine.* Vol. 89, No. 03. 2013.

T. Riordan. "Learning the Primary Colors of Dance." *EQN.* Princeton University School of Engineering and Applied Science blog. June 4, 2009.

Honors

50 Women in Robotics You Need to Know About, Oakland, CA October 2023

⋆ List of notable women in robotics created by "Women in Robotics."

IEEE Robotics and Automation Letters, London, UK May 2023

◇ *Outstanding Associate Editor*

⋆ Outstanding Associate Editor for the IEEE Robotics and Automation Letters – announced at the IEEE International Conference on Robotics and Automation (ICRA) 2023 Award Ceremony.

The Robot of the Year Awards, Station F, Paris, France November 2018

◇ *Robot of the Year, Finalist*

⋆ One of twelve finalists (AE Machines) for an honor centered around ethical innovation in robotics and AI.

Princeton University, Princeton, New Jersey November 2018

◇ *Student Selected Speaker*

⋆ Inaugural student-selected departmental speaker in the Mechanical and Aerospace Engineering Department.

4th Revolution Awards, Chicago, IL October 2017

◇ *Product Design of the Year*

⋆ Selected for contributions to manufacturing innovation through the AE Design Tool by AE Machines, Inc. Honored in a photograph with the governor of Illinois.

Defense Advanced Research Projects Agency, Arlington, VA October 2017

◇ *Director's Fellowship 2017*

⋆ DARPA YFA Grant, entitled *Choreography of Embodied, Platform-invariant Motion Primitives*, was extended for 3rd year of funding after a competitive selection process.

University of Illinois at Urbana-Champaign, Urbana, IL Spring 2017

◇ *List of Teachers Ranked as Excellent By Their Students, Outstanding Distinction*

⋆ Ranked in top 10% across evaluation criteria.

University of Illinois at Urbana-Champaign, Urbana, IL Spring 2016

◇ *University Nominee for Packard Fellowship*

⋆ Selected by Vice Chancellor for Research, Peter Schiffer, and a faculty review committee to submit a full proposal to the Packard Foundation for a Packard Fellowship in Science and Engineering.

Defense Advanced Research Projects Agency, Arlington, VA October 2017

◇ *Young Faculty Award 2015*

⋆ Recipient of DARPA YFA Grant, entitled *Choreography of Embodied, Platform-invariant Motion Primitives.*

Georgia Institute of Technology, Atlanta, GA May 2013

◇ *CETL/BP Outstanding Graduate Teaching Assistant Award Finalist*
Institute-wide

⋆ Finalist for the only institute-wide award for graduate teaching presented by the Center for Education, Teaching, and Learning (CETL) and BP.

◇ *ECE Graduate Teaching Excellence Award*
School of Electrical and Computer Engineering

⋆ Awarded to recognize excellence in graduate teaching in the School of Electrical and Computer Engineering.

Princeton University, Princeton, NJ June 2009

◇ *John Marshall Funding Prize*
School of Engineering and Applied Science

⋆ The award, which required a funding proposal prior to completion of the project, provided significant additional funding to undergraduate senior thesis, "Learning the Primary Colors of Dance."

◇ *Calvin Dodd MacCracken Senior Thesis Prize*
School of Engineering and Applied Science

⋆ Awarded to undergraduate thesis "Learning the Primary Colors of Dance." The award recognized the top three senior theses in the School of Engineering and Applied Sciences.

◇ *Morgan Mckenzie Senior Thesis Prize*
Department of Mechanical and Aerospace Engineering

⋆ Awarded to undergraduate thesis "Learning the Primary Colors of Dance." The award recognized the top senior theses in the Department of Mechanical and Aerospace Engineering.

◇ *Lyman Page Dance Award*
Lewis Center for the Arts

⋆ Awarded for outstanding use of dance in undergraduate thesis "Learning the Primary Colors of Dance."

Jet Propulsion Laboratory, Pasadena, CA August 2008

◇ *JPL Spot Award*
High Contrast Imaging Testbed

⋆ For"outstanding performance and lasting contribution" in the role of helping to align an optical testbed for phase-induced amplitude apodization (PIAA).

FUNDED PROJECTS
$1,669,622 TO PI
OF $4,320,436

An Open Data Infrastructure for Bodily Expressed Emotion Understanding

National Science Foundation (NSF)
CISE CCRI Community Research Infrastructure
April 2023-April 2026 $1,832,335 RAD Lab share via subaward through Penn State: $463,413

Understanding Movement Style and Social Interactions Through Participatory Performance

Institute For Research in the Humanities (IPRH), University of Illinois at Urbana-Champaign
Research Cluster
May 2019-May 2020 $2,500 Co-PI share: ∼$1,250

Taskable, Adaptive, and Human-Sensitive Autonomous Systems for Energy-Efficient and Comfortable Buildings

Institute For Sustainability, Energy, And Environment (iSEE), University of Illinois at Urbana-Champaign
"Campus as a Living Laboratory" Seed Funding Program
March 2019-August 2019 $30,000 Co-PI share: ∼$15,000

I-Corps: Context-Aware Interactive Robotics

National Science Foundation (NSF)
Innovation Corps
July 2018-June 2019 $50,000

EAGER: Center-of-Mass Control for Expressive and Effective Movement in Bipedal Robots

National Science Foundation (NSF)
CMMI
August 2017-July 2018 $136,524 Lead PI share: $71,111

I-Corps: AE Machines: Easy-to-Use Software for Automation

National Science Foundation (NSF)
Innovation Corps
January 2016-December 2016 $50,000

Choreography of Embodied, Platform-invariant Motion Primitives

Defense Advanced Research Projects Agency (DARPA)
Young Faculty Award (YFA) 2015
Director's Fellowship 2017
December 2015-December 2018 $630,708

NRI: Collaborative Research: ASPIRE: Automation Supporting Prolonged Independent Residence for the Elderly

National Science Foundation (NSF)
National Robotics Initiative (NRI)
August 2015-August 2018 ∼$1,295,917 Co-PI share: $239,734

Data-driven Design of Movement and Sound

UVA Data Science Institute Presidential Fellowship
September 2015-September 2016 ∼$60,000 in form of two student fellowships PI Share: one fellowship

Nucleus Fellowship

University of Virginia
September 2014-May 2015 $10,000

Methodologies for Real,Time Diagnostics and Prognostics and For Cyber-Security in Smart Manufacturing Systems

National Institute of Standards and Technology (NIST)
September 2014-May 2015 $150,000 Co-PI Share: $50,000

Dual-Arm Robot Advantages

Commonwealth Center for Advanced Manufacturing (CCAM)
May 2014-December 2014 $49,157

Quantitative Arts at UVA: Electronic Identity and Embodied Technology Atelier

The Jefferson Trust
May 2014-April 2015 $22,295 Lead PI Share: $8,249

Educational Diversity Fellowship (EDF)

University of Virginia
August 2013-August 2014 $1,000

Industry Experience

Soma Measure, Inc, Philadelphia, PA

Co-founder and CEO/CTO 2020 - 2021

Wearable technology for breath-sensing.

CAAlI, LLC, Champaign-Urbana, IL

Co-founder and CCO/CTO 2018 - 2020

Developing offline, embodied experiences that connect participants to their digital devices and lived experiences.

- ⋆ Received NSF Innovation Corps $50,000 award and participated in 7 week customer discovery intensive.
- ⋆ Embodied photobooth vendor at ArtShow Chicago Fashion Show 2; hosted 38 participants in 1 hour.
- ⋆ Embodied photobooth installation at The Video Game Art (VGA) Gallery, Chicago, IL.
- ⋆ Installed permanent Kinect-powered embodied photobooth for Microsoft Technology Center (MTC) – Chicago, which is being featured at the October 2019 grand re-opening. The installation will have the possibility to be networked to nodes at other MTCs around the world.

AE Machines, Inc, Champaign-Urbana, IL

Co-founder and CTO 2015 - 2019

Leading technical development of prototype software for highly-abstracted automation software.

- ⋆ Accepted to University of Illinois Research Park EnterpriseWorks Incubator.
- ⋆ Received NSF Innovation Corps $50,000 award and participated in 7 week customer discovery intensive.
- ⋆ Received NSF SBIR Phase I $225,000 grant to demonstrate feasibility of an accessible approach to factory automation.
- ⋆ Completed 10 week Y Combinator Start Up School course (SUS17).
- ⋆ Received letters of support from two regional manufacturers and two venture investors for follow on funding.
- ⋆ Honored at inaugural 4th Revolution Awards in Chicago, IL, winning memberships to the Digital Manufacturing and Design Innovation Institute (DMDII) and mHUB.
- ⋆ One of 12 finalists at inaugural Robot of the Year Awards in Paris, France.
- ⋆ Visited *World of Concrete 2020* as an automation consultant for 2X Hydrodemolition, Las Vegas, NV.

Teaching Experience

Princeton University Princeton, NJ

Guest Artist Spring 2023 and 2024

STC/EGR/MUS 209: Transformations in Engineering and the Arts
- ⋆ Guest artist for 2-week "movement module."
- ⋆ Developed in-class activities surrounding notation, translation, choreography, somatics, and robotics.
- ⋆ Lectured on research and artistic practice.

Barnard College at Columbia University New York, NY

Guest Artist Fall 2021

COMS3997 New Directions in Computing: Arts and Computing in NYC
- ⋆ Guest artist, with Kate Ladenheim, for 2-weeks on "Robotics, Wearables, and Dance" of cross-institution course with computer science students at Barnard and fashion design students at Fashion Institute of Technology (FIT).
- ⋆ Developed in-class activities surrounding prototyping, movement research, and design.
- ⋆ Lectured on research and artistic practice for piece *Babyface*.

Princeton University Princeton, NJ via Zoom

Guest Artist Spring 2021

STC/EGR/MUS 209: Transformations in Engineering and the Arts
- ⋆ Guest artist for 2-week "movement module."
- ⋆ Developed in-class activities surrounding notation, translation, choreography, somatics, and robotics.
- ⋆ Lectured on research and artistic practice.

University of Illinois Urbana-Champaign, IL

Assistant Professor Fall 2015- Summer 2020

RAD Lab Summer Internship (remote) *Summer 2020*
- ⋆ Developed remote independent study framework for 4 undergraduate students.

ME 340 Dynamics of Mechanical Systems *Spring 2020*
- ⋆ Presents system notation, Euler-Lagrange equations, stability, and other foundational concepts in systems theory.
- ⋆ Deployed online learning frameworks to accommodate remote communication in light of COVID-19.

ECE 470 Introduction to Robotics *Fall 2019*
- ⋆ Guest lecture for Prof. Katie Driggs-Campbell.

ARCH 593 Design and Construction Futures *Fall 2019*
- ⋆ Guest lecture for Prof. Tait Johnson Architecture Department graduate course, tour of the RAD Lab, and will provide feedback on upcoming project designs.

FAA 110 Exploring Arts and Creativity *Fall 2019*
- ⋆ Co-teaching freshman seminar on creativity with Music Department faculty Prof. Gabriel Solis.
- ⋆ Class is taught on a by-invitation basis, bringing together faculty from across campus to show freshman that creativity is a thread that exists across disciplines.

ME 340 Dynamics of Mechanical Systems *Fall 2019*

- ⋆ Presents system notation, Euler-Lagrange equations, stability, and other foundational concepts in systems theory.
- ⋆ Deployed an open-ended revision of the course homeworks.

ME 470 Senior Design *Fall 2019*
- ⋆ Advised team of seniors in a design project for Beckman Institute MRI researcher, Justin Rhodes.
- ⋆ The team is developing an augmentation device and exercise program for MRI machine that holds a participants head still while performing vigorous exercises with the lower body.

DANCE 366 Dance Composition *Spring 2019*
- ⋆ Guest artist at University of Washington.

DANCE 251 The Creative Process *Spring 2019*
- ⋆ Guest artist at University of Washington.

DAN 245 Introduction to Somatics *Spring 2019*
- ⋆ Guest lecture for Prof. Rebecca Nettl-Fiol, Dance Department.

ARCH 593 Design and Construction Futures *Spring 2019*
- ⋆ Guest lecture for Prof. Tait Johnson Architecture Department graduate course.

ME 598 Movement Representation + High-level Robotic Control *Spring 2017*
- ⋆ Seminar oriented around movement notation, dance, supervisory control, multi-agent control, and optimal control in the context of robotics.
- ⋆ Emphasized written work.

FAA 110 Exploring Arts and Creativity *Fall 2018*
- ⋆ Co-taught freshman seminar on creativity with Dance Department faculty Prof. John Toenjes.
- ⋆ Established a framework for developing an ongoing creativity in freshmen through daily creative practice.
- ⋆ Facilitated discussion of weekly artistic performances and events that the class attended in addition to class meeting.
- ⋆ Class is taught on a by-invitation basis, bringing together faculty from across campus to show freshman that creativity is a thread that exists across disciplines.

ME 498 Bio-inspired Design *Spring 2018*
- ⋆ Panel on bio-inspired robotics.
- ⋆ Filmed interview available at: https://mediaspace.illinois.edu/media/t/1_cq1znrzg

ME 340 Dynamics of Mechanical Systems *Spring 2017*
- ⋆ Presents system notation, Euler-Lagrange equations, stability, and other foundational concepts in systems theory.
- ⋆ Emphasized written description of systems and technical concepts.
- ⋆ Incorporated embodied movement analysis activity.

TAM 195 Mechanics in the Modern World *Fall 2017*
- ⋆ Guest lecture on research.

ME 340 Dynamics of Mechanical Systems *Fall 2017*
- ⋆ Presents system notation, Euler-Lagrange equations, stability, and other foundational concepts in systems theory.
- ⋆ Emphasized written description of systems and technical concepts.

ME 470 Senior Design *Fall 2017*
- ⋆ Advised team of seniors in a design project for start up Pysonic, Inc.
- ⋆ The team conducted stress-tests on and made design improvements to components for a low-cost prosthetic hand.

ME 497 Independent Study *Fall 2017*
- ⋆ Led independent study course for three undergraduate students. Each student develops own project through guided research and readings, makes midterm

project proposal, and completes project in a final write up and presentation. (3 students enrolled.)

ME 498 Bio-inspired Design *Spring 2017*

- ⋆ Guest lecture on bio-inspired robotic walking.

ME 497 Independent Study *Spring 2017*

- ⋆ Led independent study course for three undergraduate students. Each student develops own project through guided research and readings, makes midterm project proposal, and completes project in a final write up and presentation. (3 students enrolled.)

ME 598 Movement Representation + High-level Robotic Control *Spring 2017*

- ⋆ Seminar oriented around movement notation, dance, supervisory control, multi-agent control, and optimal control in the context of robotics.
- ⋆ Emphasized written work.

ME 470 Senior Design *Fall 2016*

- ⋆ Advised team of seniors in a design project for start up AE Machines, LLC.
- ⋆ The team created modular arduino code that corresponded to 3-D printable parts for easy-to-use automation cell design.

TAM 195 Mechanics in the Modern World *Fall 2016*

- ⋆ Guest lecture on research.

ME 340 Dynamics of Mechanical Systems *Fall 2016*

- ⋆ Presents system notation, Euler-Lagrange equations, stability, and other foundational concepts in systems theory.
- ⋆ Emphasized written description of systems and technical concepts.

ME 540 / ECE 515 Control System Theory and Design *Spring 2016*

- ⋆ Presents mathematically concise representations of notions like feedback, controllability, observability, and stability for a narrow class of systems.
- ⋆ Developed system of in-class worksheets to facilitate active learning.

ME 497 Independent Study *Spring 2016*

- ⋆ Led independent study course for three undergraduate students. Each student develops own project through guided research and readings, makes midterm project proposal, and completes project in a final write up and presentation. (3 students enrolled.)

CS 598RK Graduate Seminar *Fall 2015*

- ⋆ Guest lecture for Prof. Ranjitha Kumar Computer Science Department graduate course.

KIN 257 Coordination, Control, and Skill *Fall 2015*

- ⋆ Guest lecture for Prof. Citlali Lopez-Ortiz in Kinesiology.

University of Virginia Charlottesville, VA

Assistant Professor Fall 2013-Spring 2015

ARAD 5500 Introduction to Design Thinking *Fall 2014*

- ⋆ Guest lecture for School of Architecture course on design. Led embodied exercises and related them to movement representation and control of autonomous systems. The lesson employed exercises in movement and writing and was informed by Bartenieff Fundamentals, motion capture technology, and finite state machines.

4th year Capstone *Fall 2014 - Spring 2015*

- ⋆ Facilitated students in a funded project developing a robotic therapy system for the UVA Children's Hospital.

SYS 6012 / MAE 6620 / ECE 6852: Linear Systems *Fall 2014-present*

- ⋆ Taught interdisciplinary course as a stand-alone introduction to control theory that covered results on stability, controllability, and observability for state-space linear systems and control design using pole-placement and linear-

quadratic regulators with emphasis on mathematical rigor coupled with qualitative description and observation.

DANC 3559 / ENGR 3501 Electronic Identity and Embodied Technology Atelier (new course) *Fall 2014*

- ⋆ Proposed course to The Jefferson Trust for necessary funding.
- ⋆ Initiated collaboration with Kim Brooks Mata, artistic director of UVA's dance program, to produce this new, interdisciplinary course.

SYS 2202 Data and Information Engineering *Spring 2014-present*

- ⋆ Designed a course-long project where students developed a web-based remotely hosted relational database via weekly homework assignments.
- ⋆ Created guest lecture series featuring professionals who had worked with data engineering in four diverse fields: healthcare, finance, consumer products, and big data.
- ⋆ Developed final paper assignment for students to explore a key, emerging area of data engineering.

4th year Capstone for Technology Leaders Program (co-advised) *Fall 2013 - Spring 2014*

- ⋆ Facilitated students as they integrated many subsystems to create an automated cell culturing system in Dr. Robin Felder's lab.

Coursera, Massively Open, On-line Course (MOOC)

Teaching Assistant Fall 2012-Spring 2013

Teaching Assistant for "Control of Mobile Robots" course.

- ⋆ Created weekly "Glue Lectures" to prepare students for the weekly quizzes which comprised the course. These lectures reiterated important concepts from that week and presented detailed examples for the students to reinforce the weekly learning objectives.
- ⋆ Developed reference tracking example using a humanoid robot, demonstrating concepts in controllability, observability, and stability.
- ⋆ This on-line course was used for a flipped classroom course in the spring that will use short video tape segments to supplement in-class hands on robotic experiments. At the conclusion of the first run of this course, which occurred in the winter of 2013, 3,295 students had completed the requirements for passing the course.

Georgia Institute of Technology, Atlanta, GA

Graduate Teaching Assistant Fall 2012

Co-taught ECE 3084: Signals and Systems, a brand new course aimed at showing students the connections between signal analysis and control systems.

- ⋆ Prioritized syllabus objectives, emphasizing the inclusion of big picture breakaways even during introductory lectures.
- ⋆ Developed and coordinated hands-on in-class labs designed to demonstrate theoretical concepts in action.
- ⋆ Presided over lectures, wrote code to demonstrate key concepts, and guided students through concepts during office hours.
- ⋆ Improved homework and exam questions, reconciling assessment goals with actual student perspective.

Teaching Assistant Spring 2012

Teaching Assistant for ECE 3085: Introduction to Systems and Controls.

- ⋆ Coordinated in-class programming assignments for go-to-goal and obstacle avoidance tasks using Khepera robots.

- ⋆ Coached teams of students through concepts in PID control and behavior based robotics, enabling them to successfully complete a programming challenge.

Graduate Teaching Assistant Fall 2011

Teaching Assistant for ECE 6550: Linear Systems, the introductory control course for 150 graduate students.

- ⋆ Administered lectures and coached students through difficult concepts in weekly office hours.
- ⋆ Aided in homework and exam development.

Head Teaching Assistant Summer 2010

Head Teaching Assistant for Hands-On-Tech (HOT Days) summer program for high school students.

- ⋆ Coordinated all teaching assistants for the summer program.
- ⋆ Oversaw high school students as they learned college-level concepts through a series of interactive and hands-on labs designed to attract students to GA Tech and STEM fields.

Duke University, Durham, NC

Teaching Assistant Summer 2007

Teaching Assistant for Duke Talent Identification Program (TIP) summer course on Aerospace Engineering.

- ⋆ Supervised high school students in a boarding school setting.
- ⋆ Overcame difficult staffing situation as the professor for the course was fired midterm. Stepped into much larger instructive role in the interim.
- ⋆ Integrated spending time outdoors with hands-on experiments like the demonstration of a Pitot tube in Duke's famous garden streams.

Research Experience

The Robotics, Automation, and Dance (RAD) Lab, Philadelphia, PA

Director Summer 2013 - present

Director of the Robotics, Automation, and Dance (RAD) Lab, which established as an independent organization in 2020.

University of Illinois, Urbana, IL

Faculty Position Fall 2015 - Summer 2020

Director of the Robotics, Automation, and Dance (RAD) Lab

University of Virginia, Charlottesville, VA

Faculty Position Fall 2013 - Spring 2015

Director of the Robotics, Automation, and Dance (RAD) Lab

Georgia Institute of Technology, Atlanta, GA

Graduate Research Assistant Fall 2009 - Spring 2013

Research Assistant in the Georgia Robotics and Intelligent Systems (GRITS) Lab.

- ⋆ Coordinated and oversaw use of VICON motion capture system.
- ⋆ Systematized use of NAO Aldebaran Humanoid robot platform.

Jet Propulsion Laboratory (JPL), Pasadena, CA

Research Technician Summer 2008

Research technician in the High Contrast Imaging Testbed (HCIT).

⋆ Aligned optical elements to help create a testbed for phase-induced amplitude apodization (PIAA), a proposed telescope configuration for detecting extrasolar Earth-like planets, and began a project to analyze the sensitive temperature control issues associated with the high precision alignment.

Princeton University, Princeton, NJ

Research Intern Summer 2006

Boeing-sponsored intern in research lab in Mechanical and Aerospace Engineering Department.

⋆ Programmed a user interface in LabVIEW to control of a prototype deformable mirror for NASA's Terrestrial Planet Finder (TPF) mission.

University Service

University of Illinois, Urbana, IL

Robotics@UIUC Seminar Series 2019

⋆ Organized and coordinated robotics seminar series to build inertia around robotics on campus with John Hart and Saurabh Gupta.

Undergraduate Programs Committee 2015-2019

⋆ Member
⋆ Subcomittee to review 400 and 500 level courses; Spring 2016.
⋆ Subcomittee on ICES evaluations; Fall 2017.
⋆ ABET Certification – Institutional Criterion 8; Spring 2019.

Strategic Planning Activity December 7, 2017

⋆ Participated in Goal I: *Foster scholarship, discovery and innovation*

University of Virginia, Charlottesville, VA

Internal Operating Board (IOB)
Commonwealth Center for Advanced Manufacturing (CCAM) Fall 2014

⋆ Sat in for UVA representative for bi-annual operations meeting of CCAM.
⋆ Served as Secretary, taking notes and distributing to the rest of the industry/university board after the meeting.

Departmental Space Committee 2014-2015

⋆ Newly formed committee to coordinate the use of space in the department.

Nucleus Fellowship 2014-2015

⋆ Completed overhaul of SYS 2202 Data and Information Engineering course in year-long fellowship.
⋆ Participated in UVA's Course Design Institute, Summer 2014.

Departmental Search Committee Summer 2014

⋆ Served on search committee for a three-year lecturer position in the topic of data science.

Departmental Graduate Committee 2013-2015

⋆ Special committee for graduate student recruiting. Leading the effort, along with another colleague, to improve recruitment to the department, initially focusing on local schools in Virginia. This role serves a double-purpose in that it provides the opportunity to encourage a broad group of students to pursue graduate studies in engineering.

Faculty Candidate Tea Series Fall 2013

Systems and Information Engineering *Fall 2013 hiring cycle (3 searches)*
Chemical Engineering *Fall 2013 hiring cycle (2 searches)*

Georgia Institute of Technology, Atlanta, GA

Family Friendly Task Force Member 2012-2013

⋆ Worked as the sole graduate study body representative to identify keys areas that do not engender work life balances at the Institute on a campus wide committee.
⋆ Contributed to a document detailing recommendations for the university to improve the experience of working at the Institute. In particular, my sections detailed recommendations for for broadening graduate student and post-doc orientation educational focuses to better prepare them for life at tech and industry and academia afterward.

Campus Safety Task Force Member Spring 2011

⋆ Consulted with a mixed group of campus members (undergraduates to deans) on ways to improve campus safety.

Faculty Benefits Committee Member 2011-2012

⋆ Graduate Student Senate Representative.

Student Government Graduate Student Senator 2009-2011

⋆ Represented School of Electrical and Computer Engineering.
⋆ Voted on how to dole out the Student Activities Fee to student initiatives and organizations.
⋆ Ensured funding for arts organizations on campus.

Departmental Representative 2009-*2013*

⋆ Organized campus and tours for prospective graduate students.
⋆ Presented laboratory experiments to visiting elementary student groups and prospective students.

Princeton University, Princeton, NJ

Advisory Board, Student Representative 2008

⋆ Represented student interests for external advisory board meeting.
⋆ Emphasized to leading members in the field of engineering the importance of education reform to include a more broad and diverse student population.

Student Representative 2008

⋆ Related experience as an engineer at Princeton to all prospective engineering students.

Professional Service and Membership

Journal Service

M. Gummadi, D. Herath, D. Krieger, A. LaViers, S. W. Leigh, N. Staggs, R. Tsachor, and J. Wang (Eds.)"Speed-dating to long-term relationships: Art-robot Residencies Enabled by Common Language." Special Issue Research Topic *Frontiers Robotics and AI*.

IEEE Robotics and Automation Letters (RA-L). Associate Editor in HRI area (2020-2024).

P. Alves-Oliveira, M. Cakmak, G. Gordon, P. Kahn, A. LaViers, and V. Sarathy. (Eds.)"Creativity and Robots." Special Issue Research Topic *Frontiers Robotics and AI*.

Conference Service

Arts in Robotics, Co-Chair, Organizing Committee. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. London, UK. 2030.

Arts in Robotics, Co-Chair, Organizing Committee. *IEEE International Conference on Robotics and Automation (ICRA)*. Atlanta, GA. 2025.

Planning Chair, Organizing Committee. *8th International Conference on Movement and Computing (MOCO)*. Chicago, IL. 2022.

International Program Committee (IPC) member for Art Jury in Art Gallery of the 13th ACM SIGGRAPH Conference and Exhibition on Computer Graphics and Interactive Techniques in Asia (SIGGRAPH Asia). 2020.

Program Committee. *25th International Symposium on Electronic Art (ISEA)*. 2019.

Program Committee. *Robotics: Science and Systems (RSS)*. Pittsburg, PA. 2018.

Program Committee. *Robotics: Science and Systems (RSS)*. Cambridge, MA. 2017.

Associate Editor. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. Deajeon, Korea. September 2016.

Program Committee for the Work-in-Progress, Demo, and Poster Session *7th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS 2016)*. Vienna, Austria. April 2016.

Associate Editor. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. Hamburg, Germany. September 2015.

International Program Committee. *IEEE Conference on Control Applications (CCA)*. Sydney, Australia. October 2015.

International Program Committee. *5th IFAC Conference on Analysis and Design of Hybrid Systems (ADHS)*. Atlanta, GA. October 2015.

International Program Committee. *IEEE Conference on Control Applications (CCA)*. Nice, France. October 2014.

Student Volunteer. *49th IEEE Conference on Decision and Control (CDC)*. Atlanta, GA. December 2010.

Referee Service

National Science Foundation (NSF) – CISE Directorate

ACM/IEEE International Conference on Human-Robot Interaction (HRI)

Smart Culture – Arts and Culture Programme

International Conference on Movement and Computing (MOCO)

Techne: Research in Philosophy and Technology; Official Journal of the Society for Philosophy and Technology

Army Research Office (ARO)

Transactions on Human Robot Interaction (THRI)

International Journal of Social Robotics (SORO)

National Science Foundation (NSF) – ENG Directorate

Brain and Behavior Institute (BBI) – University of Maryland at College Park (UMD)

International Journal of Humanoid Robotics (IJHR)

IEEE Transactions on Human-Machine Systems (THMS)

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

National Science Foundation (NSF) – Graduate Research Fellowship Program (GRFP)

IEEE Transactions on Robotics (T-RO)

IEEE International Conference on Robotics and Automation (ICRA)

IEEE American Control Conference (ACC)

IEEE Conference on Decision and Control (CDC)

World Congress of the International Federation of Automatic Control (IFAC)

International Symposium on Mathematical Theory of Networks and Systems (MTNS)

Institute for Electrical and Electronics Engineers (IEEE), Senior Member

IEEE Control Systems Society (CSS)

IEEE Robotics and Automation Society (RAS)

IEEE Systems, Man, and Cybernetics (SMC) Society

IEEE Education Society

American Society for Engineering Education (ASEE), Member

The College Art Association (CAA), Member

Dance Studies Association (DSA), Member

Outreach

Saturday Story Hour at the RAD Lab *Jan. 2026-present*

The RAD Lab Monthly Newsletter *Jan. 2026-present*

First LEGO Team Q&A, Schaumburg, IL *Jan. 2024*

DreamWakers Flashchat with classrooms in under-served communities

Harlem Link Charter School, New York, NY *Oct. 2015*
Stuart Pepper Middle, Brandenburg, KY *Sept. 2016*
Graham Area Schools, K-12, Tazewell County, VA *Dec. 2016*
Norge Elementary, Williamsburg, VA *Nov. 2017*
Muscatel Middle School, Rosemead, CA *Apr. 2018*
JFK School of Architecture and Construction Trades, Patterson, NJ *Apr. 2019*
New Bedford Whaling Museum apprentices, New Bedford, MA *Jul. 2019*
AVID program at HD Jacobs High School in Algonquin, IL *Jan. 2021*
DreamWakers Advisory Council (DWAC) *2021-2024*

East Kentucky Science Center (EKSC), Prestonsburg, KY

Drop-in science workshop designing pipe-cleaner robots based on story *Jun. 2019*
Held two workshops over two days in robotics and choreography *Jun. 2018*
Held day long workshop in robotics and choreography *Dec. 2016*

Panelist on "Careers that Use Technical Skills" Panel, Career's Kickoff, Center for Career Development, Princeton University, Princeton, NJ *October 2023*

Panelist on "STEM Career Panel," Robotics Celebration, Springside Chestnut Hill Academy, Philadelphia, PA *September 2023*

Southern Appalachian Science & Engineering Fair – Virtual Science Club via Zoom *September 2021*

Kentucky Science & Engineering Fair at Eastern Kentucky University – Best of Fair, Physical Sciences Judge *March 2020 and 2021*

Curious Jane, New York, NY – Held morning workshop on robotics and choreography *Sept. 2019*

Laban/Bartnieff Institute of Movement Studies, New York, NY – Held lunchtime workshop on robotics and choreography *Sept. 2019*

CTRL-Z Camp, Champaign, IL – Lab members demoed NAO robotic platform *Jun. 2016, 2017, 2019*

Urbana Neighborhood Connections Center (UNCC), Urbana, IL – Held week-long workshop focusing on choreography and robotics with 6th-9th grade girls from underrepresented groups *Jun. 2019*

MLK Elementary, Champaign, IL – Held day movement and robotics workshop for class of 5th graders as part of MechSE Department Outreach Program *Nov. 2017*

Girl Scouts Troop Visit, Champaign, IL *Nov. 2016.*

MechSE GAMES camp, Urbana, IL – Developed information and worksheet packet with graduate student Ashley Armstrong; held half day activity in robotics and choreography *Jun. 2016*

UVa Arts Mentors Program, Charlottesville, VA – Hosting an afternoon session, joint with Dance Program *Jan. 2015*

Society of Women Engineers (SWE), University of Virginia, High School Invitational, Academic Job Panel *Fall 2013 - Spring 2015*

Hosted group of high school girls from Holton-Arms School, Robotics, Automation, and Dance (RAD) Lab *Fall 2013*

Updated: May 27, 2026