CURRICULUM VITAE

ALICIA C. LANE
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EDUCATION

Ph.D. Student, Department of Teaching and Learning, University Graduate Fellow and Russell G. Hamilton Scholar, Vanderbilt University, 2027

M.A., Educational Studies with Secondary Science Teaching Certification, W.K. Kellogg - WW Michigan Teaching Fellowship, University of Michigan, Ann Arbor, MI, 2013

B.S.E., Civil Engineering, Atlanta University Center Dual Degree Engineering Program, University of Michigan, Ann Arbor, MI, 2008

B.S., Dual Degree Engineering, Atlanta University Center Dual Degree Engineering Program, Spelman College, Atlanta, GA, 2008

RESEARCH EXPERIENCE

NSF Award 2112635, AI Institute for Engaged Learning (EngageAI)
- Fonteles, J., Anaya, E. D., Sadashiva, A. T., Zhang, Y., Zhou, M., Ayalon, E., **Lane, A.**, Steinberg, S., Danish, J., Enyedy, N., and Biswas, G. A first step to using machine learning methods to enhance interaction analysis in embodied learning environments. Paper submitted to the 25th Conference on Artificial Intelligence in Education (AIED 2024).
- **Lane, A.** and Fonteles, J. Reflections on ethics of multimodal learning analytics and research design in embodied learning environments. In AI, Ethics, and K-12 Education: Practices and Tools to Support Equitable and Just Student Experiences with AI. Symposium submitted to the 18th International Conference of the Learning Sciences (ISLS 2024). International Society of the Learning Sciences.

NSF Award 1908791, Generalized Embodied Modeling to support Science through Technology Enhanced Play (GEM-STEP)
- Embodied and Productive Disciplinary Engagement, First Year Project, 2023
- **Lane, A. C.**, Lee, S. J., Enyedy, N. (2024, April). Embodied Resources for Connective and Productive Disciplinary Engagement. In Connective and Productive Disciplinary Engagement – Key Concepts, Applications, Developments, and New Directions [structured poster session]. AERA Annual Meeting. Philadelphia, PA.
- Lee, S. J., **Lane. A. C.**, Jen, T., Anton, G., Enyedy, N., (2023) Choosing, Imagining, and Changing as Agency in a Mixed-Reality STEM Learning Environment [poster]. The 17th International Conference of the Learning Sciences (ISLS 2023). International Society of the Learning Sciences. Montreal, Québec, Canada.

NSF Award 1540799, Project Firebirds Reinventing STEM Teaching
- **Lane, A.** & Burtin, A. (2022). Digital Clinical Simulations to Advance Teacher Leadership at HBCUs. In E. Langran (Ed.), Proceedings of Society for Information Technology & Teacher Education International Conference (pp. 1984-1989). San Diego,

CA, United States: Association for the Advancement of Computing in Education (AACE). Retrieved from https://www.learntechlib.org/primary/p/220981/.

ACADEMIC AND PROFESSIONAL EXPERIENCE

Founder and CEO, Stronger STEM LLC, Washington, DC, 2019-present
- Served as subcontractor to conduct interviews, focus groups, and data analysis for youth development and NSF program evaluation grants
- Studied professional development market to capitalize on emerging opportunities and furthered brand awareness through strategic partnerships within DC STEM network
- Attracted major client, DC Office of the State Superintendent of Education (OSSE), generating revenue within first year of operation by providing series of professional development workshops on STEM identity and project-based learning

Adjunct Professor, Robert Noyce Teaching Fellowship, College of Arts and Sciences, University of the District of Columbia, NSF Award 1540799, 2019-2021
- **Courses taught:** EDUC 590 Parts 3-6, Special Topics: Teacher Professional Development (4 semesters)
- Delivered 70+ hours of professional development and mentoring to 11 STEM teaching fellows employed in seven public and charter school districts (DC, FL, and TX)
- Successfully initiated and secured IRB approval to publish research with the Teaching Systems Lab at Massachusetts Institute of Technology

Fellow, Innovative New Spaces for Practice and Rehearsal Teacher Education Computer Science – Artificial Intelligence (INSPIRE CS-AI), Teaching Systems Lab, Massachusetts Institute of Technology, 2019-2021
- **Simulations published:** Where are they? (engages students with various levels of attendance at different stages of a group project), Black Lives Matter in CS (assists a student in discovering how the Black Lives Matter movement utilized advances in computer science to scale advocacy)
- Submitted three publishable papers within multi-institution research teams on the design and implementation of *Teacher Moments*, online clinical practice spaces that help educators rehearse equitable teaching practices

Independent Tutor, Acers Lane Tutoring and Wyzant, Inc., 2012-present
- **Subjects taught:** ACT, algebra, biology, chemistry, FTCE, GACE, GED, geometry, GRE, HSPT, ISEE, mathematics, Praxis, PSAT, SAT, SSAT, world history, writing
- Completed 800+ hours of one-to-one tutoring and test prep, online and in-person

iSTEM Development Program Mentor, TGR Foundation, Washington, DC, 2018
- Contracted to mentor Kimball Elementary leadership team and provide technical assistance as the school completed the Carnegie STEM Excellence Pathway school certification process
- Advised principal and staff on pathway priority areas: Curriculum, Instructional Practices, Assessment and Demonstration of Skills, Family Engagement and Real-World Connections

Director, Techbridge Girls, Washington, DC, NSF Award 1323776, 2017-2019

- Supervised multiple local and national teams to ensure high-quality STEM program delivery and introduce girls to STEM careers
- Led transition of after-school programs to new models, which tripled elementary enrollment by training teachers to deliver after-school STEM programs
- Created annual budgets, managed over $750,000 in 20+ private and federal grants, and developed comprehensive plans to accomplish organization objectives while staying within budget each fiscal year

STEM Program Specialist, Office of College and Career, District of Columbia Public Schools, Washington, DC, 2015-2017
- Created, managed, and expanded 30+ STEM programs and career/technical (CTE) education pathways funded annually by $1M+ in Carl D. Perkins and DC OSSE Career Academy Network (DC CAN) grants
- Recruited and led cohort of veteran teachers to create and co-lead professional development programs focused on teacher evaluations for 100+ CTE teachers
- Appointed as Project Lead the Way State Leader for the District of Columbia to grow and sustain biomedical, computer science, and engineering programs
- Secured $125,000 in grants to launch the first ever PLTW programs at Anacostia and H.D. Woodson High Schools
- Led district-wide Hour of Code efforts, resulting in media coverage and visit by US Department of Education Secretary

Instructor, Center for Engineering Diversity and Outreach, Summer Engineering Academy, University of Michigan, Ann Arbor, MI, 2013-2015
- **Courses taught:** Engineering Concepts (grades 10-12), ACT Science (grades 11-12)
- Designed and led rigorous STEM camps and ACT test prep curricula, implemented high-energy robotics activities, and evaluated course effectiveness using student data

Teacher and Advisor, W.K. Kellogg - WW Michigan Teaching Fellowship, University Prep Science and Math High School, Detroit, MI, 2011-2015
- **Courses taught:** Project Lead the Way Engineering Design and Development (grade 12 capstone), Project Lead the Way Intro to Engineering Design (grade 9), Robotics (grades 9-12), Advisory (grades 10-12)
- Completed three-year teaching commitment, Master's program, and yearlong clinical experience based on educational research and culturally competent pedagogy
- Managed STEM programs and student activities: PLTW, National Society of Black Engineers, Square One Education Network Underwater Innovative Vehicle Design Challenge

CONFERENCES AND PRESENTATIONS

Co-Author, "Carbon Footprint," High School STEM Mursion VR Simulation, Enhancing Science Education through Virtual Reality: A Conference to Design Simulations that Enhance the Clinical Preparation of Secondary Science Teachers, American Association of Colleges for Teacher Education (AACTE), NSF Award 2040747, 2021

Presenter, "Equity at a Distance: Supporting Novice STEM Teachers with Digital Practice Spaces," NSTA Engage: STEM21 Virtual Conference, National Science Teaching Association (NSTA), 2021

Presenter, "Show Your STEM: Communicating Scientific Ideas and Understanding," STEM Inquiry & Project-Based Learning in the Digital World (virtual workshop series) in partnership with DC Office of the State Superintendent of Education (OSSE), 2020

Presenter, "STEM Identity: NGSS-Aligned Project Based Learning in the Digital World," STEM Inquiry & Project-Based Learning in the Digital World (virtual workshop series) in partnership with DC Office of the State Superintendent of Education (OSSE), 2020

Lead Presenter, "Lightning Talks: STEM and Entrepreneurship at Lightning Speed," Annual DC STEM Summit, DC STEM Network, 2018

Panelist, "STEM/STEAM Studies," Entrepreneurship and Information Technology Conference, Dialogue on Diversity, Washington, DC, 2018-2019

Workshop Facilitator, "Changing the Game for Girls in STEM," Annual DC STEM Summit, DC STEM Network, 2017

Workshop Facilitator, "Selfie Circuits," We the Girls: Young Women's Leadership Conference, Reign Initiative, DC Public Schools, 2017

Workshop Facilitator, "Dollar Store STEM: A TED-Ed Innovation Project"
- TED-Ed Weekend, TED Conferences, New York, NY, 2017
- Zone 2 Conference, American Society for Engineering Education, San Juan, PR, 2017
- Make.It.Work Conference, Digital Harbor Foundation, Essex, MD, 2016

Workshop Facilitator, "TED-Ed Ideas Worth Sharing in Your Classroom"
- New Jersey Project Lead the Way Conference, Rowan University, 2017
- Michigan Project Lead the Way Conference, Eastern Michigan University, 2016
- Massachusetts Project Lead the Way Conference, Worcester Polytechnic Institute, 2016
- New York Project Lead the Way Conference, Rochester Institute of Technology, 2016

Presenter, "Intermediate Steps: Building Mastery in Introduction to Engineering Design (IED) and Principles of Engineering (POE)," Michigan Project Lead the Way Conference, Grand Rapids, MI, 2014

HONORS AND AWARDS

Artificial Intelligence Ethics Scholar, EngageAI, 2023
Russell G. Hamilton Scholar, Vanderbilt University, 2022-2027
University Graduate Fellow, Vanderbilt University, 2022-2027
Jerseys Off Their Backs Service Award and Walmart Community Playmaker Award, Washington Mystics, Monumental Sports, Washington, DC, 2018
TED-Ed Innovative Educator Program, TED Conferences, 2016
Outstanding Young Alumna, 70th Anniversary Leadership Conference, United Negro College Fund, New Orleans, LA, 2016
Young Alumna of the Year, Annual Reunion, National Alumnae Association of Spelman College, Atlanta, GA, 2015

W.K. Kellogg – WW Michigan Teaching Fellowship, University of Michigan, Ann Arbor, MI, 2011-2015
Gene Hirs Scholarship, University of Michigan, Ann Arbor, MI, 2006-2008
NASA Women in Science and Engineering (WISE) Scholarship, Spelman College, Atlanta, GA, 2003-2008

SERVICE AND AFFILIATIONS

Vice President, Academic Affairs, Graduate Student Council, Vanderbilt University, 2023-present
University Student Engagement Liaison, Department of Teaching and Learning Doctoral Student Association, 2023-present
Educator Fellow, Center for Integrative Research in Computing and Learning Sciences (CIRCLS), 2023
Member, American Educational Research Association (AERA), 2023-present
Member, International Society of Learning Sciences (ISLS), 2023-present
Founder, DC4STEM, Inc., 2021-present
Reviewer, TeachEngineering, University of Colorado Boulder, 2020-present
Internship Employer, School Without Walls Internship Course, DC Summer Youth Employment Program (SYEP), and DC School Year Internship Program (SYIP), 2020-present
TED-Ed Innovative Educator, TED Conferences, 2016-present

MEDIA AND APPEARANCES

Interview, "Local Programs Are Convincing Girls That Cybersecurity Isn't Just For Boys," The Kojo Nnamdi Show, WAMU 88.5, American University Radio, 2018
Co-Authored Blog Post, "20+ ways to teach STEM for less than 30 cents per student," TED-Ed, TED Conferences, 2017
Interview, Episode 4114, American Black Journal with Host Stephen Henderson, Detroit Public Television, 2012
A1 Cover Story, "Mid-career professionals take their skills into classrooms," Detroit Free Press, 2011
Interview, "Fellowship to fund master's degrees in education," The Michigan Daily, 2011