

# Bethany M. Gordon, Ph.D.

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## APPOINTMENTS

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**Assistant Professor** Seattle, WA  
University of Washington, Department of Civil and Environmental Engineering 2022

## EDUCATION

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**University of Virginia** Charlottesville, VA  
Ph.D. in Civil and Environmental Engineering (Advisor: Leidy Klotz, Ph.D.) 2017–2022  
– Dissertation: Place-Based Racial History to Inform Just Design

B.S. in in Civil and Environmental Engineering 2012–2017  
– Thesis: Bio-inspired Self-Sensing Concrete

## RESEARCH EXPERIENCE

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**University of Virginia** Charlottesville, VA  
Graduate Research Fellow (PI: Leidy Klotz, Ph.D.) 2017-2022  
– Applied social psychology theory to engineering design problems using quantitative experimental methods  
– Uncovered research opportunities at the nexus of behavioral science, equity, and design of the built environment  
– Investigated how perceived risks influence public opinions of climate adaptation measures.  
– *Resulted in 5 publications (1 under review, 2 in progress), 21 presentations, funded by an NSF GRFP*

Social Justice in Engineering Education (SJ-ED) 2020-2022  
– Formed a graduate student research collaborative to develop and empirically test the efficacy of social justice content for engineering education  
– *Resulted in the creation of an open-access website to assist in integrating social justice and equity content into engineering curricula, 1 peer-reviewed manuscript (under review), 2 conference presentations, and 1 conference paper*

Undergraduate Research Assistant(PI: Osman Ozbulut, Ph.D.) Summer 2015, Fall 2016  
– Embedded shape memory alloys and graphene nanoparticles into mortar to explore sensing and self-healing properties  
– *Resulted in 2 poster presentations and an award for Best Group Project*

Tuff Armenia Project 2014-2017  
Civil Engineering Lead  
– Designed a mortar with fine aggregate sourced from local Armenian tuff stone and tested to ASTM standards  
– Researched affordable and efficient housing solutions for survivors of the 1988 Spitak earthquake  
– Captured 360 virtual reality footage to increase awareness of the housing crisis among engineers  
– *This student-led project resulted in 2 publications in student journals (1 first author), in 3 invited presentations, and was awarded over \$30,000 in research funding*

## PUBLICATIONS

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\*all authors contributed equally

### Journal Articles

1. **Gordon, B.**, Klotz, L. (2022) Community involvement in coastal infrastructure adaptation should balance necessary complexity and perceived effort. *iScience*. <https://doi.org/10.1016/j.isci.2022.104852>
2. Carroll, T., **Gordon, B.**, Hancock, P.I., Stenger, K., Turner, S. (2022). Reflections on cultivating solidarity for action on social justice in engineering. *International Journal of Engineering Social Justice and Peace*. <https://doi.org/10.24908/ijesjp.v9i1.15216>\*
3. Fletcher, S., Hadjimichael, A., Quinn, J., Osman, K., Giuliani, M., Gold, D., Jain Figueroa, A., **Gordon, B.** (2022). Equity in water resources planning: a path forward for decision-support modelers. *Journal of Water Resources Planning and Management*. [https://doi.org/10.1061/\(ASCE\)WR.1943-5452.0001573](https://doi.org/10.1061/(ASCE)WR.1943-5452.0001573)
4. Hobbs, S. R., **Gordon, B.**, Morton, E. V., Klotz, L. (2019). Black Women Engineers as Allies in Adoption of Environmental Technology: Evidence from a Community in Belize. *Environmental Engineering Science*. <https://doi.org/10.1089/ees.2018.0463>
5. Klotz, L., Weber, E., Johnson, E., Shealy, T., Hernandez, M., **Gordon, B.** (2018). Beyond rationality in engineering design for sustainability. *Nature Sustainability*, 1(5), 225–233. <https://doi.org/10.1038/s41893-018-0054-8>
6. **Gordon, B.**, Genuario, K., Mayfield, L., Roca, S., Jones, M., Kha, L., Yacoubian, L. (2018). Restructuring Resilience: Sustainable housing solutions in Gyumri, Armenia. *Conflux Student Journal*.
7. Yacoubian, L., Genuario, K., **Gordon, B.**, Mayfield, L., Roca, S., Jones, M., Kha, L. (2018). The Tuff Armenia Project. *The University of Virginia Jefferson Public Citizens Journal*.
8. **Gordon, B.**, Campbell, J., Klotz, L. Behavioral Science for Equitable Resilience: A Systematic Review. *In preparation*.

### Conference Articles

1. Turner, S., Hancock, P.I., **Gordon, B.**, Carroll, T., Stenger, K. (2022). Scaffolding Social Justice in the Engineering Classroom: Constructing a More Restorative, Inclusive, Engineering Practice. *2022 American Society of Engineering Education Conference*.

### Articles sharing scholarship with a broader audience

1. Chaban, R., Dudt, D., **Gordon, B.**, Ostrowski, E. (2021). Preventing Increased Air Pollution in Pennsylvania's Environmental Justice Communities. *Journal of Science Policy and Governance*. <https://doi.org/10.38126/JSPG180407>\*
2. **Gordon, B.** (2020). How to Sustain Your Activism Against Police Brutality Beyond this Moment. *Behavioral Scientist*.

## FUNDING

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Total: \$221,120

- NSF Graduate Research Fellowship Program (\$138,000) 2019–2022
- UVA Engineering for Equity Grant (\$2,000) 2020
- EDRA Nana Kirk Student Travel Scholarship (\$120) 2020
- UVA Dean's Fellowship (\$19,000) 2018–2019
- UVA Distinguished Fellowship (\$32,000) 2017–2018
- Jefferson Public Citizens Grant (\$20,000) 2017–2018
- UVA Center for Global Health Grant (\$10,000) 2017–2018

## HONORS AND AWARDS

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- Outstanding Graduate Student Award (UVA) 2022
- 2nd Place, 2022 University Engineering Research Symposium (UVA) 2022
- Graduate Student Excellence in Diversity, Equity, and Inclusion (EDEI) Award, UVA ESE Department 2021
- Nana Kirk Student Travel Scholarship, Environmental Design Research Association 2020
- People's Choice Award, UVA ESE Graduate Research Symposium 2019
- The Raven Honor Society 2018
- UVA Dean's Fellowship 2018 –2019
- UVA Engineering Distinguished Fellowship 2017–2018
- Summer Institute for Sustainability and Energy (SISE) Fellowship 2018
- 2nd Place, SISE Innovative Research Award 2013–2018
- Featured Speaker, Thornton Society Dinner 2017
- 1st Place, How to Change the World International Podcast Competition 2017
- Best Group Project Award, UVA Dept. of Civil and Environmental Engineering Capstone Symposium 2016

## INVITED PRESENTATIONS

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- PEERS Seminar Series Auburn, AL  
*Place-Based Racial History and Distributive Justice: Applied Behavioral Science for Just Climate Adaptation* April 2022
- University of Virginia Engineering Research Symposium Charlottesville, VA  
*Place-Based Racial History to Inform Just Design* March 2022
- Energy, Equity and Sustainability (EES) Group Pittsburgh, PA  
*If you know your history: An interdisciplinary experiment to understand the effects of place-based racial history on public preferences for climate adaptation resource allocation* March 2022
- Sustainability and Development Conference (SDC) Ann Arbor, MI  
*How does salience of relevant racial history affect resource allocation preferences for climate change infrastructure adaptation?* January 2022
- Engineering, Social Justice, and Peace Conference Bogotá, Colombia  
*1. Using Social Justice as “Rebar” to Construct a Sustainable Curriculum of the Future* June 2021  
*2. Illuminating the null curriculum: interviews with engineering instructors on their perceptions of social justice through engineering education*
- University of Washington Civil and Environmental Engineering Seminar Seattle, WA  
*Building Resilience Through Behavioral Science* June 2021
- Station1 Frontiers Fellowship Speaker Series Lawrence, MA  
*An Example of Technology-Driven and Community-Based Civic Engagement* June 2021
- University of Virginia Engineering Systems and Environment Seminar Charlottesville, VA  
*Building Resilience Through Behavioral Science: Critical Racial History as a Tool for Collecting Justice-Related Feedback on Infrastructure Projects* May 2021
- Environmental Design and Research Association (EDRA) Conference Detroit, MI  
*How Does Awareness of Racial History Affect Designers' Pursuit of Recognition Justice?* May 2021

UC Berkeley Research Seminar Series <i>Designer Power and Climate Justice for Energy Infrastructure Decision-Making</i>	Oakland, CA December 2020
Vecellio Construction Engineering and Management Graduate Student Seminar Series <i>Designer Power and Community Engagement in a Construction Management Context</i>	Blacksburg, VA December 2020
Nature Sustainability, Two Years Later: Designing Behavior for Sustainability Panel <i>Status Quo Bias and Climate Equity</i>	Charlottesville, VA November 2020
Guest Lecture, STS 3500: Matters of Race in Engineering and Technology <i>The Designer-Bias Feedback Loop: Interrupting White Supremacy with Behavioral Science</i>	Charlottesville, VA October 2020
Engineering Sustainability <i>Risk Perceptions of Coastal Infrastructure</i>	Pittsburgh, PA April 2019
UVA ESE Graduate Research Symposium <i>Risk Communication and Coastal Infrastructure</i> – People’s Choice Award.	Charlottesville, VA February 2019
Guest Lecture, STS 2500: Responsible Innovation <i>Behavioral Science, Sustainability, and Engineering</i>	Charlottesville, VA October 2018
Community Engagement Practices and the Adoption of Green Technology <i>Loss aversion in Physical Decisions-Making Under Risk</i>	Charlottesville, VA February 2018
GEM National Consortium and American Society for Engineering Education <i>Loss aversion in Physical Decisions-Making Under Risk</i>	Washington, DC January 2018
UVA Center for Global Health Fall Research Symposium <i>Restructuring Resilience: Sustainable Housing Solutions in Gyumri, Armenia</i>	Charlottesville, VA October 2017
UVA Thornton Society, Featured Speaker <i>Seizing Opportunities for Self-Guided Undergraduate Research</i>	Charlottesville, VA October 2017
National GEM Consortium Annual Meeting <i>Virtual reality for humanitarian applications in Gyumri, Armenia</i>	New York City, NY September 2017
Armenian General Benevolent Union <i>Voices from the Domiks: Interviews with Gyumri Residents</i>	Yerevan, Armenia July 2017
UVA Dept. of Civil and Environmental Engineering Capstone Symposium <i>Bio-inspired Self-Sensing Composites for Civil Structures</i> – Best Group Project Award.	Charlottesville, VA December 2016
MATS-UTC Symposium <i>Flexural strength of shape memory alloy reinforced mortar</i>	Charlottesville, VA July 2015

## TEACHING

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- **Engineering Content Developer** for Social Justice in Engineering Design Website [www.sj-ed.org](http://www.sj-ed.org) 2021-Present
  - Designed two modules (Building Equity into the Design Process and Practicing Reflexivity) to aid in the integration of social justice and equity concepts in civil and environmental engineering curricula.

- **Creator and Instructor** of Engineering Social Justice (CE 4500/SYS4501) January 2021  
*University of Virginia*
  - Designed a pedagogically-informed course to prepare engineers to confidently and respectfully engage with social justice issues in their careers.
  - Lead instructor for an advanced undergraduate course during 2021 January Term (3 credits).
  - This course is a product of the Course Design Institute at UVA.
- **Guest Lecturer** for Matters of Race in Engineering and Technology (STS 3500) October 2020  
*University of Virginia*
  - Will teach a 90-minute interactive class for 15 students about the legacies of white supremacy in the built environment and the behavioral science implications of that legacy.
- **Panelist** for Diversity in STEM Colloquium August 2020  
*University of Virginia*
  - Presented a 10-minute talk about how meritocratic ideologies and depoliticization of engineering topics contributes to engineering’s diversity problem.
- **Panelist** for Navigating Advisor Expectations in Graduate School Luncheon August 2020  
*University of Virginia*
  - Answered questions and discussed advisor expectations with 2 faculty members and another graduate student for a group of underrepresented graduate students.
- **Teaching Assistant** for Water for the World (CE 3100) Fall 2018  
*University of Virginia*
  - Taught during weekly office hours and provided written feedback on graded assignments for 70-students.
- **Guest Lecturer** for Responsible Innovation (STS 2500) October 2018  
*University of Virginia*
  - Taught a 90-minute class about behavioral science and sustainability in engineering to a class of 50 students. After a brief lecture, students completed an activity that allowed them to identify common biases in their own thinking.

## MENTORING

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- Research: Kraisinger, E. 2020–Current  
*E is an undergraduate in the University of Virginia Class of 2023. We met regularly for 2 semesters to discuss research skills (literature review, experimental design, and data analysis). She will be a co-author on an upcoming manuscript.*
- Engineering Workshop Facilitator, Women in Training STEAM Workshop Series 2021  
*I designed and led a virtual workshop for Women In Training to provide a high-level introduction to the major disciplines within engineering and to lead participants in a hands-on design exercise.*
- Fellowships: Lim, L. 2019–2021  
*As a mentor in the Graduate Writing Lab, I worked closely with L on both of her essays for the NSF-GRFP Fellowship over a period of 2 years. She was awarded the NSF-GRFP fellowship in 2021.*
- UVA Center for Diversity in Engineering, Graduate Mentor 2017 –2018  
*I held consistent in-person office hours, where students could ask me about graduate school, their coursework, and a variety of other topics.*
- She Started It STEM Day 2017 and 2018  
*I organized workshops on sustainability and climate change for primary school girls.*

## POLICY EXPERIENCE

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- Critical Race Theory Summer School** August 2021  
African American Policy Forum
- Christine Mirzayan Science and Technology Policy Graduate Fellowship Program** 2021  
National Academy of Engineering
- Cultural, Ethical, Social, and Environmental Responsibility (CESER) initiative
- Science Policy Memo Competition** March - May 2021  
Journal of Science Policy and Governance (JSPG) and National Science Policy Network
- Collaborated with a newly-formed team to select a timely science policy issue and compose a memo to address it
  - Title: *Preventing Increased Air Pollution in Pennsylvania's Environmental Justice Communities*
- Science Communication Course** February - May 2021  
University of Virginia
- Participated in a voluntary course about communicating science to different audiences such as policymakers
- Science Policy Bootcamp** January 2019  
University of Virginia
- Participated in lectures and dialogue about the role of science in policy and vice versa
- Science Policy Initiative (SPI)** August 2017 - May 2022  
University of Virginia
- Actively engaged with all SPI programming; Former Alumni Relations Chair (2018-2019)

## LEADERSHIP AND SERVICE

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- Session Chair, CI and CRC Joint Conference 2022  
*Sessions: Infrastructure Systems, Sustainability and Resilience*
- Session Chair, Sustainability and Development Conference 2022  
*Session: Land, Weather, and Conflict*
- Panelist, Navigating the Academic Job Market 2021  
*Panelist for a session of UVA's PhD Plus series on Navigating the Academic Job Market.*
- Leadership Team (Secretary), BioGals 2021  
*BioGals is a nonprofit that seeks to empower women of color around the world to bring their ideas to life, engineer dynamic solutions for sustainable development, and establish a legacy of changemakers who embody cultural diversity. I am responsible for the organization and maintenance of files and external correspondence.*
- Engineering Graduate Student Selections Chair, Raven Society 2020–2021  
*The Raven Society is an honor society at the University of Virginia. I am organizing the nomination and selection process for the engineering graduate students for the 2020-2021 academic year.*
- Editorial Board Coordinator, 500 Women Scientists National Leadership Team 4.2019–12.2019  
*I managed a board of over 100 volunteer editors and made connections between writers and editors with similar interests.*
- Charter Committee, UVA Engineering Systems and Environment Graduate Student Council 2018 –2019  
*I co-wrote the charter to form a graduate student council in my department. The council was created to provide avenues for graduate student engagement, increased inclusion, and department cohesion.*
- Alumni Relations Chair, Science Policy Initiative 2018 –2019

*I compiled a list of all engineering alumni at the University of Virginia with science policy experience and organized a career panel for the membership.*

- Department Representative, Graduate Student Society of Women Engineers 2018 –2019  
*I communicated events to students in the department and recruited faculty to speak at events.*
- Steering Committee, Bread and Roses Food Justice Non-profit 2017 –Current  
*Planning and maintaining a garden that provides vegetables for the surrounding community.*
- Chapter Executive Officer, National Society of Black Engineers 2012 –2016  
*I served in a variety of executive officer roles for the University of Virginia Chapter of NSBE as an undergraduate.*

## OTHER EDUCATION AND TRAINING EXPERIENCES

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<b>Research Data Management Planning Workshop</b> University of Washington	2022
<b>DELTA New Faculty Institute</b> American Society for Engineering Education	2022
<b>ComSciCon (Science Communication Conference)</b> University of Virginia	2021
<b>Design Futures Forum</b> Washington University in St. Louis	2020
<b>Write to Change the World Workshop</b> The OpEd Project	2019
<b>BIG Ideas Doctoral Workshop</b> Center for Public Leadership, Harvard Kennedy School	2019
<b>Neuroscience for Architecture Summer Intersession</b> NewSchool of Architecture and Design	2017