Eric Greenlee (he/him)

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Research Interests

I explore technology co-design for environmental justice and sustainability. My work focuses on increasing access, reducing burden, and building partnerships around *in-situ* microclimate sensing and data collection systems for community-based climate change mitigation and interventions.

Awards and Honors

2024	Finalist: Georgia Tech Foley Scholar Award recognizing graduate students whose vision and research are shaping the future of how people interact with and value technology
2024	Georgia Tech CRIDC (Career, Research, and Innovation Development Conference) Poster Presentation Award
2024	Third place: Georgia Tech School of Computer Science and School of Cybersecurity and Privacy Graduate Student Association Poster Symposium- Junior Category
2023 — 2025	Georgia Tech Brook Byers Institute for Sustainable Systems Graduate Fellowship
2023 & 2024	Verizon Connectivity Prize for Georgia Tech's Student IoT Innovation Capacity Building Challenge
2023	Dartmouth College Postgraduate Project Fellowship
2022 —	Georgia Institute of Technology President's Fellowship
2022	Tau Beta Pi Fellowship
2019-21	Special Achievement Cash Awards from the National Security Agency for custom antenna design, circuit board design, and VHDL development
2014-22	Top Secret/SCI clearance
2014-18	Stokes Undergraduate Scholarship Program through the National Security Agency

Education

Expected May 2027 — **Georgia Institute of Technology,** Atlanta, GA
Ph.D. in Computer Science
Advisors: Ellen Zegura and Josiah Hester

Dec 2020 — **University of Maryland College Park,** College Park, MD
M.Eng. in Electrical and Computer Engineering
Specialization in Communications and Signal Processing
GPA 4.0/4.0

Jun 2018 **Dartmouth College,** Hanover, NH
B.E. and B.A. in Electrical Engineering
Academic citations denoting "particularly favorable impressions on members of the faculty" in three engineering courses and one teacher's assistantship
GPA 3.85/4.0

Publications

Journal articles

In review *A Workflow for Microclimate Sensor Networks: Integrating Geographic Tools, Statistics, and Local Knowledge*
David Klinges, Jonas Lembrechts, Stijn Van de Vondel, **Eric Greenlee**, Kian Hayles-Cotton, Rebecca Senior
Elsevier Journal on Ecological Indicators, 2025

J01 *"The Devil You Know": Barriers and Opportunities for Co-Designing Microclimate Sensors, A Case Study of Manoomin*
Eric Greenlee*, Blaine Rothrock*, Hyeonwook Kim, Josiah Hester, and Ellen Zegura
ACM Journal of Computing and Sustainable Societies, 2024

Conference articles

In review *Sustaining Workers Who Sustain the World: Asset-Based Design for Conservation Technologies in Madagascar*
Eric Greenlee, David Klinges, Lalatiana Odile Randriamiharisoa, Kim Valenta, Jhoanny Rasojivola, Justorien Rambeloniaina, Nicolas Naina Rasolonjatovo, Georges Razafindramavo, Joel Ratsirarson, Zovelosoa Raharinavalomanana, Edouard Ramahatratra, Abigail Ross, Thomas J Kelly, Jean Claude Rakotoarivelo, Tafitasoa Mijoro, Eric Tsiriniaina Rajoelison, Efitiria Efitiria, Josiah Hester, Ellen Zegura, and Alex Cabral
ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), 2025

C01 *Makak: Co-designing Environmental Sensors to Protect Manoomin (Wild Rice)*
Blaine Rothrock, **Eric Greenlee**, Yaman Sangar, Josiah Hester, and Alex Cabral
Case Study, ACM CHI Conference on Human Factors in Computing Systems, 2025

Other articles

R02 *Community-Driven Mobile and Ubiquitous Computing*
Blaine Rothrock, **Eric Greenlee**, and Josiah Hester
GetMobile: Mobile Computing and Communications, volume 27, issue 3 (Nov 2023)

R01 *Beyond Scientific Data: Expanding IoT's Role in Community-driven Environmental Sensing*
Eric Greenlee, Josiah Hester, and Ellen Zegura
CSCW Workshop on Data-Enabled Sustainability, Oct 2023

Posters

P01 *Learning from Manoomin/Psíŋ: A Community-Driven Sensor for Monitoring and Protection*
Eric Greenlee, Blaine Rothrock, Ellen Zegura, and Josiah Hester
Manoomin·Psíŋ Knowledge Symposium, Nov 2023

*Denotes co-first authorship

Funding

2024 **Battery-free Microclimate Sensor Development**
Great Lakes Indian Fish and Wildlife Commission (GLIFWC), $15,866

Employment

2018-22 **Radio Frequency Engineer, National Security Agency**
- Designed custom radio frequency communications systems, including modulation schema, embedded firmware, circuit boards, and miniaturized antennas, leveraging sophisticated simulation and fabrication tools.
- Evaluated these systems on metrics including power consumption, throughput, range, error rate, bandwidth, and noise figure.
- Installed and upgraded these systems with operational partners at remote field sites.
- Performed a cybersecurity vulnerability analysis on digital acoustic waveforms for a high-value asset.

Talks and Panels

2024 **Guest Lecture,** Colby College CS 166: Computational Thinking
"Makak: A Co-designed Environmental Sensor for Tribal Sovereignty"

2024 **Speaker,** Seven Generations Inter-Tribal Leadership Summit
"Innovative Data Collection and Analysis on Tribal Lands: Access, Insights, and Techniques"

2024 **Speaker**, University of Cambridge Energy and Environment Group (EEG) seminar
"Partner-driven Environmental Sensing: Co-design with Indigenous Ojibwe Scientists and Malagasy Conservationists"

2024 **Speaker,** Madagascar Biodiversity Center seminar
"Merging Local Knowledge with Conservation Tech to Inform Climate Change Ecology and Restoration"

2024 **Panelist,** U.S. Indigenous Data Sovereignty & Governance Summit 2024 on "STRONG: Data Sovereignty across the Natural, Computer, Engineering, and Social Sciences"

2024 **Lightning Talk Speaker** at Georgia Tech's 2024 Sustainability Showcase on " Community-Driven Sensing for Manoomin (Wild Rice) Conservation"

2024 **Moderator** at Georgia Tech's 2024 Sustainability Showcase panel on "Connecting for Sustainability: Collaborative Paths to Environmental Justice"

2023 **Presenter** at the Gidakiimanaaniwigamig STEM Youth Camp on environmental sensing for manoomin

2023-24 **Presenter** at the Great Lakes Indian Fish and Wildlife Commission Tribal Wild Rice Committee on environmental sensing for manoomin

2022 **Guest Lecturer** to Dartmouth College ENGS 28: Embedded Systems course

2021 **Presenter** on demystifying antennas to the Stokes Scholarship Program interns

Student Mentoring

2023 **Ish Mehta**, Master's student at Georgia Tech

2023 **William Dyches**, Undergraduate at Georgia Tech

Teaching Experience

at Georgia Tech

CS 6603/8803 SDG: Sustainability and Computing
Head Teacher's Assistant and Lecturer, Fall 2023

at Dartmouth College

ENGS 23: Distributed Systems and Fields
Teacher's Assistant, Fall 2016, 2017, Winter 2018

Service

As a journal reviewer

2024 — ACM Journal on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)

2023 — ACM Journal for Computing and Sustainable Societies (JCSS)

Institutional

2022-24 Student organizer of the Georgia Tech Networking Community

Technical Skills

Programming	Python, C, GNU Radio, MATLAB, VHDL, C++, Lua, Javascript
Embedded Systems	Arduino, Raspberry Pi, BeagleBone Black, FPGA
Simulation	CST and HFSS Electromagnetic Field Simulation, ADS (Advanced Design System), OrCad, Cadence Design Suite, Multisim
Communication Protocols	SPI, I2C, LoRa, 802.11, LVDS, UART
Circuit Board Design	Altium, Eagle, EasyEDA
Lab Equipment	Spectrum analyzer, network analyzer, oscilloscope, multimeter, mill, soldering
Language	Spanish (Intermediate)