PiTech

2023 | Annual Report

CORNELL TECH

HOME OF THE
JACOBS INSTITUTE

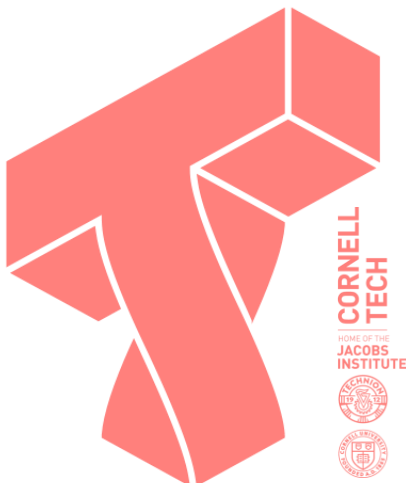# TABLE OF CONTENTS

Directors' Note:

PiTech's programs are crafted to integrate a public interest mindset into the busy lives of students, researchers, and faculty. As we enter the 4th year of PiTech Initiative, we continue to re-envision our programming to meet the shifting priorities of our audiences, including the desire for increased engagement with community organizations and the emergence of broadly available AI tools.

Our programs are designed to inspire the Cornell community of graduate students and faculty to apply their technical skills towards advancing the public good. No matter what long-term careers students choose, they can develop insights and skills with which to address the social applications and implications of technology, and become responsible and ethical technologists. At the same time, our programs enable and catalyze our partner organizations to explore how emerging technologies may be used to support and advance their missions.

As we reflect on the past three years of the PiTech Initiative, we are encouraged by the many experiences it has offered to students and explorations it has enabled within host organizations. None of it would have been possible without support from the Siegel Family Endowment and Atlantic Philanthropies. The PiTech Initiative is immensely grateful to our funders for their commitment to public interest technology and Cornell Tech's role in advancing this field.

Deborah Estrin

Deborah Estrin
PiTech Faculty Director,
Associate Dean for Impact

Malgosia Rejniak

Malgorzata Rejniak
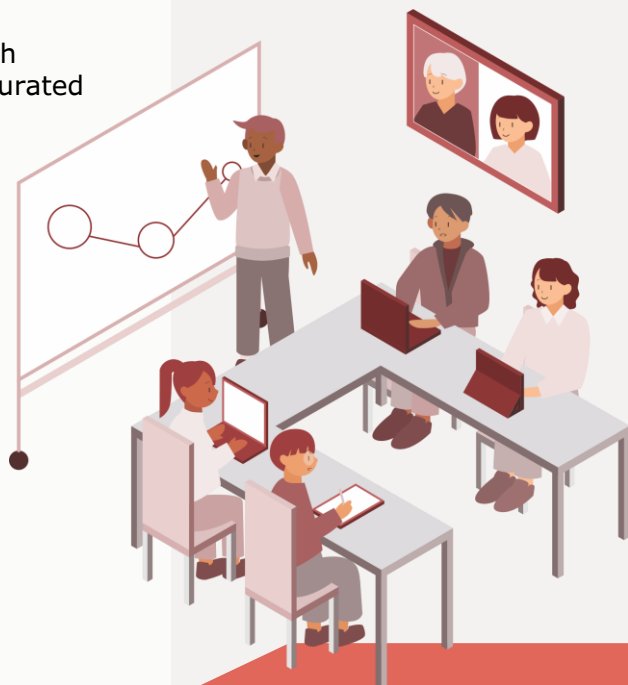PiTech Initiative Director

PiTech Overview

The work of the PiTech Initiative is centered on fostering the next generation of innovators, leaders, and thinkers who will shape technology toward positive societal outcomes. Our programs are designed to meet the needs of individuals at each stage of the academic career trajectory, **Master's** students, **PhDs**, **Postdocs**, and **Faculty**.

- **Master's:** In *PiTech Studio*, student teams explore product and venture concepts while learning about value creation and business models particularly relevant to public and non-profit sectors. The *Siegel PiTech Startup Award* is selectively awarded to support particularly promising venture ideas.

- **PhDs:** *Siegel PiTech PhD Impact Fellows* intern with public sector and nonprofit host organizations on curated mission-aligned technical projects.

- **Postdocs:** *PiTech Runway Postdocs* receive financial and educational support to pursue public interest ventures*.

- **Faculty:** *Siegel PiTech Faculty Impact Fellows* are enabled to focus on public interest tech initiatives.

Fostering the next generation of innovators, leaders, and researchers shaping technology to achieve positive societal outcomes

PiTech Programs

Master's Students

The **Studio curriculum** is a cornerstone of the Cornell Tech experience for all Cornell Tech Master's students. Every Spring semester, student teams select one of three options: Startup Studio, BigCo Studio, and PiTech Studio.

PiTech Studio

PiTech Studio has been organized around the question: How can we apply technology to help create a more just and prosperous world? Students work on their own startups, while reflecting on the concept of value creation and learning product development and business models. In Spring 2023, 7 teams (34 students) participated. Particularly promising mission-driven Spinout ventures may receive support through the Siegel PiTech Startup Award.

To enrich the PiTech Studio classroom experience with practitioner perspectives, we hosted 7 speakers, among them leaders from Data & Society, Robinhood, United States Digital Reponse, and Salesforce. Over the last three years, we've hosted close to 30 speakers, the majority of whom identified as BIPOC and women. You can see the full list of our speakers on our website.

"A big part of why I joined Cornell Tech was for PiTech. Throughout the year, the PiTech team did an exceptional job giving us access to resources, materials, people, and community who want to create impact."
- Srishti, PiTech Studio 2023 Student

"The PiTech Initiative helped me build a clear foundation of what it means to do social impact work and think about how I can use that understanding to carve out my own long- and short-term career goals."
- Preksha, PiTech Studio 2023 Student

PiTech Impact Studio

In AY24-25 we will introduce a new version of the course, the PiTech Impact Studio, where student teams will pursue product concepts for existing organizations. Under the new practicum format for the course, students will:

• Be advised by practitioners from government, non-profit, and/or social impact organizations from multi-stakeholder domains, such as public health, housing, food security, social justice, economic inequality, and sustainability.

• Gain hands-on experience identifying, proposing, assessing, and/or validating digitally-enabled products, services, processes, and challenges that arise in the context of the public interest organizations' needs and missions.

• Gain contextual insights and exposure to the opportunities and challenges of navigating technology-based innovation within government agencies, nonprofits, NGOs, foundations, and social impact startups.

We would leverage the vibrant network of partners we've built through the Siegel PiTech PhD Impact Fellowship to identify advisors for the course and are actively seeking an instructor.

PiTech Visiting Practitioners

The PiTech Visiting Practitioners (ViPs) program connects Cornell Tech students and community members with practitioners from impact-oriented organizations. ViPs interact with students throughout the semester, giving talks, offering office hours and providing feedback on product and business ideas. VIPs are also invited to pursue their own capstone projects and inform the direction of PiTech at Cornell Tech.
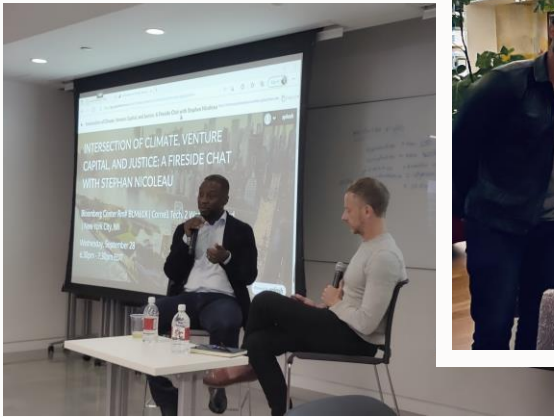

2022-23 VIPs

In May 2023, we wrapped up the successful tenure of our 2022-23 VIPs, Afua Bruce, Jorge Fontanez, Stephan Nicoleau, and Jennifer Park. Over the course of their engagement with PiTech, the cohort of VIPs held weekly office hours for all students, provided ~bi-weekly engagement opportunities for smaller subgroups of students, and participated in monthly crit sessions.

> *Having mentors that you can see yourself in is vitally important for personal transformation. As a student, it meant a lot to have such accomplished people of color as mentors. As a woman of color, seeing and interacting with mentors of color makes it easier for me to imagine myself in a leadership role in a field where it is uncommon to see people that look like me. I very much appreciated this opportunity, which continues to resonate with me."*
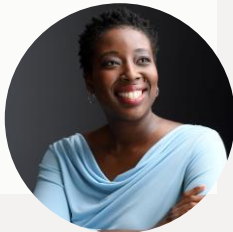> – Melanie, PiTech Studio 2023 Student

Fireside Chats and Dinner Events

"I've been involved in a number of efforts at different campuses across the country related to public interest technology programs and one of the things that really makes a difference to the success of programs, is the investment in the administrative staff and support to make it as easy as possible for professionals to participate and to ensure that students or faculty are prepared for the conversations. **I think Cornell's PiTech program did a phenomenal job of that.***"*

*"***The students were always really prepared and engaged and it felt good to give a little direction to them and to be challenged by them as well***. They asked hard questions. I thought about the state of the tech policy world, the state of AI. The different perspective that students brought was really engaging and just continued to challenge my own perceptions of how education is done and how policies are rolled out."*

Afua Bruce
Author & Advisor
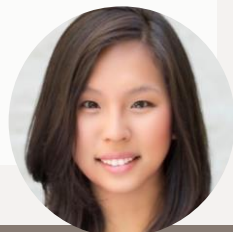**Former Chief Program**
Officer, Datakind

"The students have incredible talent. They have so much to offer and **they're really trying to figure out how they can do good at the same time and find their purpose.** *(...) They are just so optimistic and that's really inspiring. They approach their product, their work with a clear mindset of how they want to contribute. I walked away feeling very inspired by the students because they always came with an energy of optimism and creativity."*

"I had a chance to work more deeply with the products that students are trying to deliver and was able to use my network to connect them with people in the public sector and other nonprofits to provide more insights into how they can refine and really build something applicable for the problem they're trying to solve."

*"***Everything that we do, whether it's a fireside chat or office hours, is all valuable because it leads to a follow up,** *or a series of follow up conversations, or an opportunity to see them on campus...and you can start to develop that deeper relationship with them."*

Jennifer Park
Executive Director,
Opportunity Accelerator,
Results for America

"The world is increasingly complex and difficult and **programs like PiTech are important to focus the attention of some of the best and brightest minds,** *to help them emerge more capable of playing a role in what happens next in the world. (...) Getting the students to understand the full potential of the ideas they're bringing to fruition through the Cornell Tech program was the most meaningful part of my experience as a ViP."*

"I was inspired a lot and learned so much from students. There's a heavy presence of international students at Cornell Tech and it was really inspiring to see how **folks came from places very far and brought with them not just the eagerness to learn, but the ambition to change things back home***. It was inspiring to see because, ultimately, the issue of climate change affects everyone everywhere."*

"The thing that I hope I left students with as insight is that for the big problems we're all trying to solve, **everyone really does have a role to play***, even if you're not a climate person, or you're not an environmentalist, or you don't have the whole understanding of the issue, it doesn't mean that you're not qualified to lend to it your expertise, superpowers, and skills."*

Stephan Nicoleau
Managing Director,
FullCycle

2023-24 VIPs

In September, we welcomed our cohort of 2023-24 ViPs, Karen Bhatia, Jessica Cole, and Clarence Wardell III. The PiTech Initiative is honored to have these accomplished individuals as part of our community. In Fall 2023, they already made their mark on campus with a series of student engagements.

Karen Bhatia
Lawyer and Faculty,
Stanford University

Karen Bhatia is a lawyer, policymaker, and entrepreneur, currently on the faculty of Stanford University, where she teaches about the role of business model innovation and technology for economic development. She previously led tech at the NYC Economic Development Corporation, overseeing a $200+ Million portfolio of approximately 30 tech and entrepreneurship projects. These included developing NYC's blockchain strategy, launching the first publicly-funded Virtual Reality/Augmented Reality Lab in the US, leading strategy work to develop a Center for Responsible Artificial Intelligence and expanding affordable broadband access to poor neighborhoods in NYC.

Clarence Wardell III
Sr Program Officer,
Bill & Melinda Gates Foundation

Dr. Clarence Wardell III is a Senior Program Officer at the Bill & Melinda Gates Foundation, where he leads efforts to foster innovation to improve economic outcomes for individuals in the U.S. with low incomes. Before his role at the foundation, Clarence served in the Biden-Harris Administration and on the transition team focused on policy implementation and advancing equity through the federal government, including as Senior Advisor for Policy Implementation and Delivery with the Domestic Policy Council and as the Chief Data and Equity Officer for the White House American Rescue Plan Team. Clarence has also previously served in roles at Results for America, CNA Corporation, and in the Obama Administration working to scale evidence-based solutions to address various challenges at the local, state, and federal levels of government.

Jessica Cole
Interim Director Tech Policy Hub,
Aspen Institute

Jessica Cole is the Interim Director of the Aspen Institute's Tech Policy Hub, which trains the next generation of policy entrepreneurs by teaching the policy process to experts in STEM, climate, and nonprofits. An urbanist and seasoned leader in public interest technology, Jessica excels at uniting civic communities and fostering organizations at the nexus of government and tech. She co-founded U.S. Digital Response, aiding over 200 governments and nonprofits respond to their communities' most critical needs. Her previous roles include a Fellowship at Code for America, leading Innovation and Economic Development for Walnut Creek, CA, and a Tech Policy Fellowship at Aspen Institute, enhancing access to civil court representation.

Siegel PiTech
PhD Impact Fellowship

The PiTech PhD Impact Fellowship supports Cornell University PhD students in technical fields through 12-week summer externships with nonprofit and public sector organizations across NYC. Students work on real-world projects and gain exposure to the technology challenges facing nonprofits and government. Participating organizations, which may otherwise have limited resources to employ technical talent, benefit from students' advanced technical expertise in machine learning, data science, LLMs, human-centered design, and consumer facing technologies such as AR/VR, IoT, and interactive agents. This access to talent allows organizations to explore high-risk, high-reward ideas.
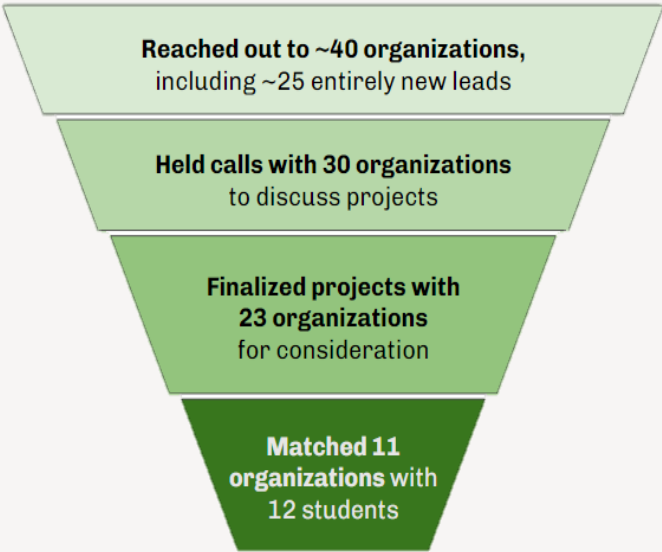
In response to growing demand for the PiTech PhD Impact Fellowship from students (from 15 applicants for Summer 2022, to 54 for Summer 2024), we have curated a strong community of host organizations spanning diverse domains, including disability & accessibility, social justice, healthcare, data rights, and sustainability. Below is a snapshot of the organizations we've worked closely with.

Siegel PiTech
PhD Impact Fellowship 2023

We reached out to over 40 partner institutions, significantly increasing our outreach to New York City government agencies and civic-engagement- and climate-and-sustainability-focused organizations. After working with each organization to define project proposals, we converged on 23 partners. We then matched 12 talented students with 11 organizations, carefully aligning student interests and skills with the needs of participating organizations.
Our matching process began with one-hour-long matching calls between each of our 23 partner organizations and students interested in learning more about the organizations' work. We then facilitated 1:1 conversations between matched students and our partners to ensure the match was a good fit. Lastly, we organized detailed project scoping calls where PhD Fellows and organizations defined specific project goals, timelines, milestones, and deliverables. A summary of our outreach funnel and curation work is visualized next.
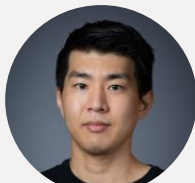
Project funnel for Summer 2023

Reached out to ~40 organizations, including ~25 entirely new leads

Held calls with 30 organizations to discuss projects

Finalized projects with 23 organizations for consideration

Matched 11 organizations with 12 students

2023 Fellows

Breanna Green
Block Party
Exploring extractive and abstractive methods for generating community board meeting YouTube transcript data to distill useful insights.

Serena Ge Guo
Young Adult Institute (YAI)
Crafting immersive VR/AR experiences to aid individuals with autism to facilitate their dental visits.

Federica Bologna
NYC Health + Hospitals
Promoting the integration of medical alerts within nurses' workflows by conducting interviews and data analysis.

Rebecca Hicke
Good Call NYC
Analyzing and visualizing NYC arrest data to help target outreach, aid political advocacy, and make information available to the public.

Byung Jae Cho (Jason)
City of Ithaca
Modeling the workforce needs to achieve Ithaca's goal of electrifying all buildings in the city by the year 2030.

Joy Ming
NYC Civic Engagement Commission
Designing a pipeline for city agencies to streamline the processing of participatory feedback.

2022 Fellows dinner

2023 Fellows

2023 Fellows

Zhi Liu
NY Public Library
Analyzing the materials circulation system through an equity and efficiency lens to ensure fair and inclusive access.

Tuan-he Lee
Consumer Reports
Investigating consumers' expectations of privacy products and exploring LLMs for analyzing privacy policies.

Zachary James
NYC Office of Emergency Management
Visualizing spatio-temporal meteorology data to better inform residents during weather emergencies.

Fengyang Lin
Consumer Reports
Measuring real-world prevalence of surveillance marketing technologies, empowering consumers to have control over how their data is utilized by companies.

Mahika Phutane
NYC Mayor's Office of People with Disabilities
Creating an interactive NYC web chatbot to facilitate communication between individuals with disabilities and digital content.

Kimia Kazemian
Oxfam
Amplifying Advocacy and Shaping Change: Leveraging NLP and ML for in-depth analysis of online discourse in support of Oxfam's social impact goals.

Several of the Summer 2023 PiTech PhD Impact Fellows remained involved with their organization during the Fall 2023 semester in varying capacities:

- **Breanna Green** joined Block Party as a full-time volunteer.
- **Mahika Phutane** and **Serena Guo** continued work on their accessible chatbot and AR/VR solutions with MOPD and YAI, respectively, with support from PiTech.

- **Fengyand Lin** became a consultant for the Consumer Reports Innovation Lab.
- **Zhi Liu** involved his PhD dissertation advisor in his fellowship work, resulting in a joint academic paper and ongoing policy change/intervention exploration with NYPL.

PiTech Runway Postdoc

The PiTech Runway Postdoc program was established to support postdoctoral scholars pursuing social ventures as part of the Jacobs Institute's Startup Runway Postdoc Program at Cornell Tech. The Runway program provides specialized guidance to PhD graduates with a strong research concept and commercialization potential, but no business experience. Over the course of two years, Runway postdocs work on their technology ventures, with access to over $250,000 in funding, co-working space at Cornell Tech, a research budget, and mentorship.

In April 2023, we welcomed Maria Sousa as the Executive Director of Climate Change AI (CCAI). Maria continued Priya Donti's work, scaling the nonprofit, establishing sustainable revenue streams, and fundraising. We are incredibly excited for what the future holds for the organization as it graduates from the Runway Postdoc Program in April 2024.

Maria Sousa has a Ph.D. in Mechanical Engineering from Instituto Superior Técnico (IST), Universidade de Lisboa. Her doctoral thesis focused on cooperative aerial robotics and artificial intelligence for wildfire detection and monitoring systems and was developed as a research fellow at both IDMEC in the Center of Intelligent Systems and at ADAI in the Forest Fire Research Center. Her research interests are in the areas of computational intelligence, robotics, and networked systems.

2023 CCAI Summer School

Climate Change AI (CCAI) is a nonprofit startup that empowers a global community of innovators, practitioners, and decision-makers to accelerate responsible climate action through the use of artificial intelligence (AI). Since its founding in 2019, CCAI has been instrumental in establishing climate change as a key area of impact for AI and has inspired, informed, and connected thousands of stakeholders through networking and knowledge-sharing events, summer schools and other educational programs, international policy reports, and multimillion-dollar global grants programs.

CCAI's flagship programs include the 'Tackling Climate Change with Machine Learning' workshop series offered at various conferences, the CCAI Summer School which aims to democratize education at the intersection of AI and climate, and the CCAI Innovation Grants Program which has awarded $3 million in seed grants to 23 grantees to support the creation of catalytic solutions in the AI and climate space. All CCAI's programs have been met with strong demand which has consistently exceeded capacity. For instance, the 2023 CCAI Summer School welcomed 30 in-person participants from over 1,800 applicants.

Siegel PiTech Faculty Impact Fellowship

The Siegel PiTech Faculty Impact Fellowship supports U.S.-based computer science and engineering faculty to pursue initiatives that put social impact at the forefront of their mission.

2023 Faculty Impact Fellow

In January 2023, we welcomed our first Siegel PiTech Faculty Impact Fellow, **Nicola Dell**, an Associate Professor at Cornell Tech, and co-founder of the Clinic to End Tech Abuse (CETA), a first-of-its-kind clinic to help survivors navigate technology abuse.

Developed in partnership with the NYC Mayor's Office to End Domestic and Gender-Based Violence (ENDGBV), CETA's mission is to work with IPV survivors and service providers to discover how technology is used to facilitate harm and help survivors stay safe. CETA's frontline service provides personalized assistance to survivors referred to CETA by partner organizations, and its complementary research, education, and advocacy activities work in concert to help create a world in which technology empowers survivors, not abusers.

Leveraging the wealth of relevant expertise in the PiTech, Cornell Tech, and broader NYC communities, Prof. Nicki Dell focused on transitioning CETA into a sustainable and standalone initiative as part of her Siegel PiTech Faculty Impact Fellowship.

She conducted an in-depth exploration of the benefits and challenges associated with different organizational, staffing, and financial models to move CETA away from an academic research setting. The outcome of the fellowship was an exciting roadmap, and decision to partner with an NYC-based organization, Sanctuary for Families (SFF), which will ensure CETA's long-term success and growth as a public service initiative.

The goal of the new collaboration is to explore a pilot technology abuse clinic that is housed and managed at SFF, with CETA providing technical resources, assisting with volunteer recruitment, delivering technology training, and conducting research investigating and mitigating technology abuse. The PiTech Initiative is very proud of the SFF collaboration and outcome of Prof. Dell's fellowship and the tremendous potential it carries to broaden the reach of CETA's services and impact

Sanctuary for Families (SFF) is a leading service provider and advocate for survivors of domestic violence, sex trafficking, and related forms of gender-based violence. SFF delivers counseling, crisis intervention, shelter, legal representation and advice, and career training to 8,000 survivors and their children each year. They are also an active partner of the Family Justice Centers (with which CETA already works).
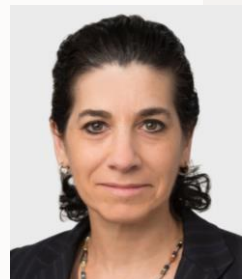Visit SFF at sanctuaryforfamilies.org

PiTech Leadership

Małgorzata (Małgosia) Rejniak is the PiTech Initiative Director. Prior to Cornell Tech, Malgosia led implementation of strategic initiatives for NYC Open Data with the NYC Mayor's Office of Data Analytics. She's passionate about the positive impact technology can have in the world and has experience working as a social entrepreneur and across public and private sectors.

Deborah Estrin, founder of the PiTech Initiative at Cornell Tech, is the Robert V. Tishman '37 Professor of Computer Science. She serves as the Associate Dean for Impact at Cornell Tech and is an Affiliate Faculty at Weill Cornell Medicine. A 2018 fellow of the MacArthur Foundation, Deborah applies expertise in internet technologies, sensing, digital health, and broadly mission-driven impact research. .

Lyel Resner is the Head of PiTech Studio, a Fellow at the MIT Civic Data Lab, and co-leader of the Startups & Society Initiative. Previously, he was a Cofounder of Swayable (YC W18), a Public Benefit Corporation that uses data science to create more persuasive media for many of the world's leading advocacy organizations, political campaigns, and brands including the ACLU, The Biden-Harris campaign, and Airbnb.

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