

Carnegie  
Mellon  
University

MAKE  
**POSSIBLE**

THE CAMPAIGN FOR  
CARNEGIE MELLON UNIVERSITY

HEINZ COLLEGE *of*  
INFORMATION SYSTEMS  
*and* PUBLIC POLICY





HEINZ COLLEGE *of*  
INFORMATION SYSTEMS  
*and* PUBLIC POLICY





SHAPING TECHNOLOGY.  
INFORMING DECISIONS.  
INSPIRING ACTION.

# MAKING SMART SOLUTIONS *for a* BETTER SOCIETY POSSIBLE.

**“The work being done at Heinz College is more important than ever as the world contends simultaneously with disease, social unrest and technological disruption. During these times of immense change, we are fully committed to our mission to be a force for good.”**

**RAMAYYA KRISHNAN**  
Dean of Heinz College of Information  
Systems and Public Policy

Extraordinary times call for the kind of extraordinary solutions that occur only at the nexus of people, policy and technology. That's exactly the kind of revolutionary thinking and doing you'll find at the Heinz College of Information Systems and Public Policy. Here, students gain the skills and experience to become tech-savvy policymakers and ethical tech leaders who embrace the unprecedented collaboration that today's problems demand.

As the only academic institution to unite graduate degrees in public policy and information systems, we trace the interconnections and effects of technology on human life and work. The solutions we design and deploy reach into every corner of our lives: smart, connected cities; unbiased algorithms; and the connection between public health and economic health, to name just a few.

With your support of Heinz College through *Make Possible: The Campaign for Carnegie Mellon University*, we will:

- Advance research at the intersection of technology and society.
- Fund the work of society's problem-solvers.
- Equip graduates with the confidence to lead organizations that change the world.

By enriching the preparation that our students receive, erasing boundaries between academia and the real world, and ensuring even more opportunities to design and deploy technology and analyze data, we will solve acute and long-standing organizational and policy challenges in the way that only Heinz College can.

**TOGETHER, *we will*  
MAKE IT POSSIBLE.**



WHEN WE BUILD MORE BRIDGES  
*between* PUBLIC POLICY AND  
TECHNOLOGY, *we'll* BETTER  
**CONNECT**  
**THE PEOPLE**  
*who can* SOLVE GLOBAL PROBLEMS.

The line between the digital and physical worlds is becoming more blurred by the day. At Heinz College, we're continually seeking to strike the right balance, pursuing research that enhances our lives and shapes our future.

When the inevitable  
not falling crime rate

DANIEL S. NAGIN  
CARNEGIE MELLON UNIVERSITY





# EXAMINING THE INTRICACIES OF PRIVACY *and* DECISION- MAKING IN THE DIGITAL AGE.

In a culture where social media and digital communication are ubiquitous, researchers at Heinz College are gaining a better understanding of what drives online decision-making, and making sure users aren't signing away their privacy.

From what we ate for breakfast to where we're going for vacation, we share more about ourselves online than ever before. And while that can help us feel more connected to one another, it can also pose a massive threat to privacy — something that the vast majority of social media users don't quite grasp.

With advanced facial recognition software, computers can identify you from images. By pairing this knowledge with data from other sources, including government records, complete strangers can unearth a startling amount of information about you — even, in some cases, your Social Security number.

While we like to hope that information will be used for good, it can affect our lives in ways we might not expect or realize, like hiring practices and government protest crackdowns.

In his research, Alessandro Acquisti, Trustees Professor of Information Technology and Public Policy, investigates the role of privacy in a digital economy. Drawing on economics, decision science and data mining, he seeks to analyze and understand the role of consumer privacy valuations and decision-making. He strongly believes that privacy is a human right, and that, if we're not careful, our own digital footprints could be used against us.



Heinz College researcher, Beibei Li, associate professor of IT and management, focuses her work on the intersection of the real and digital realms as part of the Block Center for Technology and Society, which is housed in Heinz College and focuses on the societal consequences of technological change. By gaining a deeper understanding of what people say and do online — and how that affects their offline behavior — she hopes to facilitate transformations in domains such as health care, marketing, finance and urban transportation.

Both Acquisti's and Li's research happens at the nexus of our physical and digital environments, with the aim of ensuring that we're advancing technology for the benefit of society, not its detriment. With additional resources to push this work forward, the discoveries we make will shape how humans relate to and interact with each other online and in the real world.

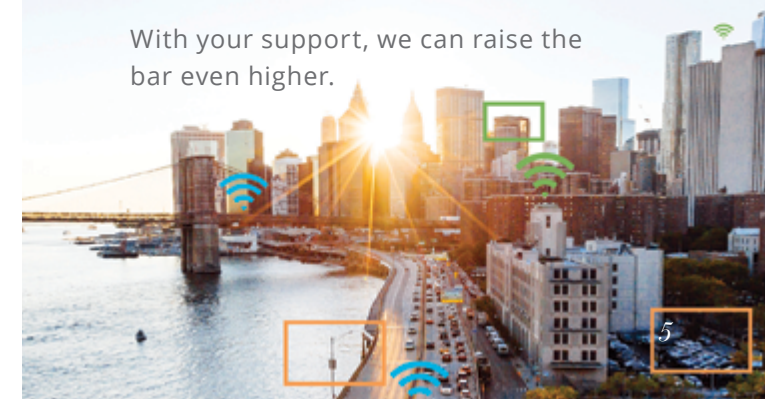
## DESIGNING CITIES THAT WORK FOR EVERYONE.

Just 30 years from now, the United Nations predicts that 68 percent of global citizens will live in cities. With such a large population inhabiting these compact spaces, there's an increasing need for infrastructure that connects people and places in smart, efficient ways.

Metro21: Smart Cities Institute at Carnegie Mellon has a creative, forward-looking vision for bringing together people, technology and policy to significantly improve the quality of life in metropolitan areas. This multidisciplinary effort employs research, development and deployment tactics with key partners, to create solutions for smart cities around the world.

In collaboration with the City of Pittsburgh, Allegheny County and other government agencies, Metro21 has already set the standard for tomorrow's smart cities with a range of promising initiatives. One of these is Surtrac, a traffic management system that optimizes traffic flow in real time using sensors and AI. Another project addresses wheelchair escorts at airports, for travelers with reduced mobility; the institute developed a dispatch model that both increases escort use and reduces wait times, all without additional staffing.

With your support, we can raise the bar even higher.





## DEVELOPING DEEPER KNOWLEDGE THAT DRIVES **BETTER SOLUTIONS.**

Heinz College tackles many of our toughest global problems, both acute and long-standing, seeking to understand them deeply and from all perspectives. With additional resources, we will enhance our capabilities to meet a changing world.

## With your support, we will:

### Ensure that technology, AI and analytics are harnessed for social good.

Heinz College is home to the Block Center for Technology and Society, which examines the societal consequences of technological change and creates meaningful plans of action to address them. With technology fundamentally altering how people engage with and contribute to the world, the work of the Block Center is driving policy impact and ensuring that the benefits of those changes are widely shared. Your support will open new pathways to prosperity for all.



### Make cities smarter for the benefit of their citizens.

With a two-pronged approach of policy design and technological innovation, Heinz College will research, develop and deploy solutions to the biggest problems affecting U.S. metropolitan areas. With your support, we'll transform city life, creating communities that are safe and livable for everyone.

### Ignite research in critical societal areas.

From climate and energy policy to criminology and digital behavior, our research aims to be ethical in its implementation and beneficial in its effects. Your support will expand the breadth and depth of Heinz College's research — and positively impact the lives of millions of people.

## YOU CAN EMPOWER THE PEOPLE WHO WILL SHAPE THE POLICIES OF TOMORROW.

Help make it possible by offering critical support to our college through:

### TECHNOLOGY AND SOCIETY INNOVATION FUND

Increase the impact of Heinz College through programs, opportunities and initiatives that explore the intersection of humanity and technology, and that develop innovative solutions to the problems that face society today.

### SMART COMMUNITIES IMPACT FUND

Advance Heinz College's efforts to shape policies and technologies that will transform city life and resolve critical issues affecting metropolitan areas.

### DEAN'S INNOVATION FUND

Invest in current programs and new initiatives that address emerging priorities and promising areas of inquiry at Heinz College.





A woman with short brown hair, wearing a black blazer over a white top, stands on a stage. She is gesturing with her right hand towards a large screen on the left. The screen displays a blue-tinted image of a person. The stage is lit with purple light, and there are purple curtains in the background. A metal truss structure with a spotlight is visible above the screen.

FUND THE WORK OF SOCIETY'S PROBLEM-SOLVERS

WITH HUMANITY ALWAYS AT  
THE HEART OF OUR WORK,  
**WE CHANGE  
THE WORLD**  
*for the* **BETTER.**

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Even as our work deals with vast amounts of information, we never take our eyes away from our ultimate goal: developing policies and technologies and scaling them in ways that will make life better for real people everywhere.



# DEVELOPING SMARTER POLICY *in the age of* AUTOMATED TECHNOLOGY.

Companies seek to reduce expenses in myriad ways, including through technology. At Heinz College, we're studying how this practice impacts the overall economy, and how policymakers can proactively support workers facing these changes.

Carnegie Mellon is a preeminent leader in the field of automation. The technologies we develop help companies operate more efficiently and effectively, but may also lead to worker displacement in industries like transportation, manufacturing and customer service. As big-picture problem-solvers committed to serving the greater good, we have an ethical obligation to ensure that the workers in fields like these aren't left behind. Brian Kovak, an Andrew Carnegie Fellow and a labor economist at Heinz College, is seeking to understand how technological change affects the labor market, and how policy can help alleviate the pain that accompanies it.

Wage insurance is just one policy proposal that Kovak has found promising in addressing these issues. Through this policy, the government would make up some of the loss in earnings if a displaced worker changes locations or industries — giving people the incentive to take a job in a growing industry or a stronger market, and effectively subsidizing on-the-job training for workers who need to learn a new skill.

Kovak's ultimate goal is to be able to examine new technologies as they're being commercialized, and to credibly predict how their adoption will change the skills and occupations required by that industry. With this information, policymakers could get a sense of who is likely to be displaced from their jobs and what shortages the labor market is facing, and workers would be better able to find reemployment. While most public policy programs diagnose the source of past problems, this type of modeling can help Heinz College find solutions to labor displacement before it becomes a crisis, so that we can develop proactive policy instead of reactive measures.

The kind of quantitative and technical skills that are prevalent at Heinz College are both rare and needed — especially in times of sudden, unexpected upheaval that touch every aspect of society. Thanks to research from Kovak

and others in the Block Center, we can help develop policies that drive economic growth and shared prosperity throughout the country. With your support, we will promote innovations and policies that make the world not just more efficient, but more humane and more inclusive — goals that we believe are not mutually exclusive.



**"Our work focuses on trying to ensure that as many people as possible can share in the benefits of globalization and technological change."**

**BRIAN KOVAK**

Associate Professor of Economics and Public Policy



## GIVING A GREATER VOICE TO TOMORROW'S LEADING- EDGE VISIONARIES.

At Heinz College, we understand that by leveraging technology, analytics and policy, we can spark better ideas and innovations. That's why we need to give tomorrow's policy and technology leaders more practice, preparation and opportunity.

### With your support, we will:

#### Attract and retain renowned faculty.

With increased funds, we'll be able to recruit and support more of the world's brightest minds as they apply their considerable talents to the greatest problems of our age and educate the next generation of global leaders.

#### Prepare tomorrow's groundbreakers and innovators.

You can help Heinz College attract visionary doctoral students who are driven, preparing them through meaningful collaborations and hands-on work to blaze new trails in their disciplines, communities and organizations.



#### Build partnerships to deploy research in the real world.

The connections among people, policy and technology are shaping the future of humanity. With increased support, Heinz College will strengthen our network of partnerships with government entities, community organizations and industry leaders, allowing us to deploy our research in real-world settings, and giving students a chance to test and implement their policy and technology innovations in a way that tangibly improves the lives of real people.



## YOU CAN BOLSTER THE GREAT MINDS WHO IMPACT OUR DAILY LIVES.

Help make it possible by  
providing critical support  
to our college's faculty  
and students through:

#### ENDOWED PROFESSORSHIPS

Inspire faculty with funding that empowers their research and teaching goals, and help Heinz College recruit even more of these leaders.

#### PH.D. FELLOWSHIPS

Secure a Heinz College education for promising doctoral students — regardless of their financial circumstances — and help inspire a generation of diverse scholars who bring a wide-ranging set of perspectives to solving global problems.

#### COMMUNITY ENGAGEMENT FUND

Fuel research by Heinz College faculty and students, and enable them to test and deploy their ideas in ways that have a direct impact on the residents of the Pittsburgh region and beyond.





Heinz College

By erasing boundaries between the classroom and the community and between undergraduate and graduate learning, Heinz College creates opportunities for students to apply technology and analyze data in order to solve organizational, policy and societal challenges, connecting tomorrow's leaders with practical experiences that will shape the future.

EQUIP GRADUATES WITH THE CONFIDENCE TO LEAD ORGANIZATIONS THAT CHANGE THE WORLD

WHEN WE ENGAGE *in*  
PRACTICAL EXPERIENCE,  
**WE'RE PREPARED**  
*to lead* **THE FUTURE.**



# DRIVEN BY DATA. DESIGNED TO MAKE A TANGIBLE DIFFERENCE.

These Heinz College graduates work in different fields. But the collaborative, science-driven approach they learned here drives them with a shared purpose: addressing some of the world's most pressing challenges.

## A STROKE *of* GENIUS.

After years as an EMT and a stint in medical school, Matthew Kesinger (HNZ 2017) had a wealth of medical and technological expertise. And he drew on that knowledge to envision and design a revolutionary new device that would aid first responders in diagnosing stroke victims, quickly and accurately.

While Kesinger's medical background was critical in the creation of this novel invention, he came to Heinz College to build his operational and leadership skills. Here he gained the experience he needed to

Alumni partners Carmelo R. Montalvo (left) and Matthew Kesinger (right) launched medical device startup Forest Devices.

secure funds, market his device and develop a prototype. He also made an important connection: his future business partner Carmelo R. Montalvo (HNZ 2017).

After securing \$2.3 million in seed money from the Rice Business Plan Competition — including the \$300,000 grand prize — the two built Forest Devices into one of the premier med-tech startups in the country. Now, as CEO and COO, with the knowledge they've gained and the connections they've made through Heinz College, Kesinger and Montalvo are ready to take their lifesaving device to market.



## AN EDUCATIONAL PROGRAM *that* CLOSES THE POVERTY GAP.

Secondary education is a key factor in reducing poverty — and many children around the world don't have access to it. That's an issue that Heinz College graduate Annum Sadiq (HNZ 2016, pictured in white above) is working to solve in her home country of Pakistan, where more than 5 million children are out of school, and just 13 percent of women reach ninth grade. Sadiq's education empowered her as a working woman in a nation where less than a quarter of the workforce is female. And the strong policy background she gained at Heinz College inspired her to create Edkasa, an educational technology company. Edkasa specializes in exam prep services for Pakistani students from limited-resource backgrounds, connecting them with "rock star" teachers via a live, interactive, virtual classroom. For her part, Sadiq describes herself as "an optimistic educationalist who believes that education can bridge the gap between the world we have and the world we want." And through her company, she's getting closer to that ideal world every day.

## REMOVING BARRIERS *and* RESTORING DIGNITY IN HAITI.

Since 2010, Carnegie Mellon has provided ongoing support to the country through CMU in Haiti, a student organization that guides the collaboration of outreach organizations inside and outside the university.

One of those organizations is Work, led by Heinz College graduate Vivien Luk (HNZ 2007). With a goal of moving Haitian families out of poverty by placing heads of households into good, dignified jobs, Work serves a small community in Haiti by coordinating health care, education, job placement, professional development opportunities and more.

"This work allows me to use my CMU training and past work experience to tackle one of our world's biggest challenges — global poverty," Luk said. "CMU provided me with the analytical skills to understand the fight the poor face every day and to figure out what we need to do together to end it."





# PUT THEIR EXPERIENCE *to* WORK.

When we give future leaders the chance to apply their knowledge, they're better able to see their potential for impact.

## With your support, we will:

**Position more students to make a difference.**

The cornerstone of a Heinz College education is applying classroom knowledge in meaningful, hands-on learning opportunities. From student research to teaching assistantships to internships, from focused coursework in real-world settings to conference travel and study abroad, your support will allow students to engage practically with problems and find solutions that benefit real people.

### Redefine hands-on learning.

With our long tradition of experiential education and external partnerships at the graduate level, Heinz College is evolving and extending our successful model to undergraduate students through learning experiences like an Analytics to Action Studio and seamless integration of coursework and co-ops. Your support will put data tools into the hands of energetic, creative students earlier and unlock their potential impact sooner.

### Expand diversity and inclusion initiatives.

Heinz College fosters an empathetic and open community with many different perspectives. With your support, we can offer greater access to our graduate programs, especially for students from underrepresented populations. This type of access is fundamental to our mission, and it's critical for the energetic exchange of ideas and spurring innovations that change society for the better.



## YOU CAN ENHANCE OUR STUDENTS' OPPORTUNITIES, *so that* THEY CAN ADVANCE THE HUMAN EXPERIENCE.

Help make it possible by providing critical support to our college's faculty and students through:

### STUDENT EXPERIENCE FUNDS

Help our students bridge the gap between theory and actuality, through practical, meaningful learning and growth opportunities, both inside and outside the classroom. These include conferences and professional meetings, course-based and extracurricular research projects, the Heinz Washington Program, internships and fellowships, and more.

### SCHOLARSHIPS

Secure a Heinz College education for passionate graduate students, regardless of their financial circumstances, through endowed scholarships such as:

#### W.W. Cooper Scholarship Fund

Attract academically and professionally high-achieving students by increasing the impact of our premier merit-based scholarship, named for Heinz College's founding dean.

#### Access and Affordability Fund

Encourage, empower and support highly qualified and diverse students from traditionally underrepresented populations to join Heinz College's programs.

### PROGRAM INNOVATION AND SCHOLARSHIP FUNDS

Advance the Heinz College programs that inspire you, giving them the ability to respond to emerging priorities and promising areas of inquiry, and to attract talented students with endowed scholarships.



THIS IS *where* POLICY  
AND TECHNOLOGY WITH  
MEANINGFUL IMPACT  
*are* MADE POSSIBLE.

JOIN US.  
TOGETHER, *we can make*  
THIS VISIONARY FUTURE  
*for* HEINZ COLLEGE  
**POSSIBLE.**



“The outstanding faculty and students of our Heinz College represent CMU’s strengths at the intersection of technology, policy and humanity, where so many of society’s most pressing challenges and opportunities lie. The story of this century will depend on the things that Heinz does best — going beyond obvious thinking to pose questions that no one else has thought of, and solving complex problems in unexpected ways.”

**FARNAM JAHANIAN**  
President  
Henry L. Hillman President’s Chair



# **Carnegie Mellon University**

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