


Institute for Cyber Law, Policy, and Security

2021 Year in Review



Some photos in this publication were taken prior to the COVID-19 pandemic and do not necessarily reflect current health and safety guidelines.



Dear friends,

It has been my privilege to return to the University of Pittsburgh Institute for Cyber Law, Policy, and Security in 2021, following a leave of absence to serve as staff director and senior counsel to the House Select Subcommittee on the Coronavirus Crisis.

The technology challenges we face—as a world, as institutions, as communities, and as individuals—are near constant and overwhelming. They are impossible to disentangle from every other big societal challenge. And of course technology often holds simultaneously the promise of solutions and the threat of perils.

This is precisely why Pitt Cyber and other like-minded institutions are so critical to our world. Our work at the intersection of technology, law, and policy is vital to ensuring the equity and security of the technologies that increasingly shape our realities. We continue to innovate and collaborate across Pitt and beyond.

The focus, ambition, and most of all compassion with which our team across the University takes on these issues never cease to energize me. We never forget that it is people who matter and that it is people who develop and use technology.

Please join me in celebrating Pitt Cyber's impact in 2021. We are grateful for your continued partnership.

Sincerely,

A handwritten signature in blue ink, appearing to read "David Hickton". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

David Hickton
Founding Director

Mission

Pitt Cyber provides a unique transdisciplinary environment for tackling cyber challenges. We bring the breadth of one of the world's leading public research universities to bear on the critical questions of networks, data, and algorithms, with a focus on the ever-changing gaps among law, policy, and technology. Our collective of legal, policy, and technical researchers engages with policymakers and industry to create both actionable proposals to address current demands and fundamental insights to understand the future as it arrives.





Our Work and Impact

Pitt Disinformation Lab

The Pitt Disinformation Lab (PDL) launched in June 2021 to counter the disinformation that threatens our health, undercuts our security, and undermines our democracy.

PDL takes a novel approach to fighting disinformation, going beyond passive detection and reporting to develop a community-centered ecosystem for warning, understanding, and response.

PDL is grateful for support from the Hillman Foundation and the Year of Data and Society.

The Team

Michael Colaresi, director, Pitt Disinformation Lab; colead, Southwest PA Civic Resilience Initiative; William S. Dietrich II Chair, Department of Political Science, Kenneth P. Dietrich School of Arts and Sciences; research and academic director, Institute for Cyber Law, Policy, and Security; affiliate scholar, Intelligent Systems Program, School of Computing and Information, University of Pittsburgh

Lara Putnam, colead, Southwest PA Civic Resilience Initiative; University Center for International Studies Research Professor and professor, Department of History, Kenneth P. Dietrich School of Arts and Sciences, University of Pittsburgh

Malihe Alikhani, assistant professor, Department of Computer Science, School of Computing and Information, University of Pittsburgh

Dimitriy Babichenko, clinical associate professor, Department of Informatics and Networked Systems, School of Computing and Information, University of Pittsburgh

Jessica Ghilani, associate professor of communication, University of Pittsburgh at Greensburg

Sara Goodkind, associate professor, School of Social Work; associate professor, Department of Sociology and Gender, Sexuality, and Women's Studies Program, Kenneth P. Dietrich School of Arts and Sciences, University of Pittsburgh

Max Goplerud, assistant professor, Department of Political Science, Kenneth P. Dietrich School of Arts and Sciences, University of Pittsburgh

Bob Gradeck, project director, Western Pennsylvania Regional Data Center

Adriana Kovashka, assistant professor, Department of Computer Science, School of Computing and Information, University of Pittsburgh

Prashant Krishnamurthy, professor, Department of Informatics and Networked Systems, School of Computing and Information, University of Pittsburgh

Yu-Ru Lin, associate professor, Department of Informatics and Networked Systems, School of Computing and Information, University of Pittsburgh

Sera Linardi, associate professor of economics, Graduate School of Public and International Affairs, University of Pittsburgh

Michael Madison, professor and John E. Murray Faculty Scholar, School of Law, University of Pittsburgh

Amin Rahimian, assistant professor, Department of Industrial Engineering, Swanson School of Engineering, University of Pittsburgh

Rachel Rubin, associate university librarian for research and learning, University Library System, University of Pittsburgh

Beth Schwanke, executive director; Institute for Cyber Law, Policy, and Security; University of Pittsburgh

Jeffrey Shook, associate professor, School of Social Work, University of Pittsburgh

Jaime Sidani, assistant professor of medicine; Center for Research on Behavioral Health, Media, and Technology; University of Pittsburgh

Jonathan Woon, professor and associate dean for graduate studies, Department of Political Science, Kenneth P. Dietrich School of Arts and Sciences, University of Pittsburgh

Vladimir Zadorozhny, professor, Department of Informatics and Networked Systems, School of Computing and Information, University of Pittsburgh

Research Associates

Beth Hoffman, PhD student, behavioral and community health sciences, School of Public Health, University of Pittsburgh

Minsu Jang, PhD student, political science, Kenneth P. Dietrich School of Arts and Sciences, University of Pittsburgh

Elizabeth Monk, research specialist, University Center for Social and Urban Research, University of Pittsburgh

Jacob Otto, PhD student, political science, Kenneth P. Dietrich School of Arts and Sciences, University of Pittsburgh

Aparna Ramani, Ambassadors for Civic Engagement fellow, Elsie Hillman Civic Forum, Institute of Politics, University of Pittsburgh

Elise Silva, PhD student; English composition, digital studies, and methods; Kenneth P. Dietrich School of Arts and Sciences; University of Pittsburgh

Partners and Affiliates

Center for Informed Democracy & Social - cybersecurity (IDeaS) | Carnegie Mellon University

Collaboratory Against Hate | University of Pittsburgh and Carnegie Mellon University

Community Engagement Center in Homewood | University of Pittsburgh

Institute of Politics | University of Pittsburgh

University Library System | University of Pittsburgh

Western Pennsylvania Data Regional Center | University of Pittsburgh



“The illusion that social media is separable from our real-world interactions is not only false but dangerous. Just as the disruption of online disinformation is driven by all-too-human material and social incentives, the potential for societal resilience and problem solving resides within the core of our common human experiences on the ground. Pairing the data sets of disinformation with the social settings of evidence and arguments provides us our best chance against algorithmically empowered disinformation and for the identification of common causes and shared goals in an age of accelerating polarization.”

—PDL Director Michael Colaresi

Pittsburgh Task Force on Public Algorithms

Pitt Cyber launched the Pittsburgh Task Force on Public Algorithms in 2020 to study the use of automated decision systems by city and county government and to provide independent recommendations on oversight and accountability. The task force will release its recommendations in 2022.

Pitt Cyber is grateful for the support of The Heinz Endowments and the Hillman Foundation for this work.



Rachel Berger, chief, Child Advocacy Center, UPMC Children’s Hospital of Pittsburgh; director, child abuse research, Safar Center for Resuscitation Research, University of Pittsburgh; professor of pediatrics, School of Medicine, University of Pittsburgh

Esther Bush, president, Urban League of Greater Pittsburgh

Alexandra Chouldechova, assistant professor of statistics and public policy, Heinz College of Information Systems and Public Policy, Carnegie Mellon University

David Danks, professor of data science and philosophy, University of California San Diego

Chris Deluzio, policy director; Institute for Cyber Law, Policy, and Security; University of Pittsburgh

Ángel Díaz, lecturer; School of Law; University of California, Los Angeles

Courtney Ehrlichman, CEO, The Ehrlichman Group

Rosta Farzan, associate professor and associate dean for diversity equity and inclusion, Department of Informatics and Networked Systems, School of Computing and Information, University of Pittsburgh

Sara Goodkind, associate professor, School of Social Work; associate professor, Department of Sociology and Gender, Sexuality, and Women’s Studies Program, Kenneth P. Dietrich School of Arts and Sciences; University of Pittsburgh



Ellen Goodman, professor of law; School of Law; Rutgers, the State University of New Jersey

David Harris, Sally Ann Semenko Endowed Chair and professor, School of Law, University of Pittsburgh

Yu-Ru Lin, associate professor, Department of Informatics and Networked Systems, School of Computing and Information, University of Pittsburgh

Sharon McDaniel, founder, president, and CEO, A Second Chance

Michelle McMurray, vice president of program and community engagement, The Pittsburgh Foundation

Mark A. Nordenberg, chair, Institute of Politics; Distinguished Service Professor of Law, School of Law; chancellor emeritus, University of Pittsburgh

Beth Schwanke, executive director; Institute for Cyber Law, Policy, and Security; University of Pittsburgh

LaTrenda Sherrill, lead consultant, Common Cause Consultants; former deputy chief (education), Office of the Mayor, City of Pittsburgh

Michael Skirpan, executive director, Community Forge; special faculty, Department of Philosophy, Dietrich College of Humanities and Social Sciences, Carnegie Mellon University

Nyssa Taylor, criminal justice strategic litigation and policy counsel, ACLU of Pennsylvania

Frederick Thieman, Henry Buhl Jr. Chair for Civic Leadership, Buhl Foundation; assistant treasurer and member of the Finance, Audit, and Facilities Committee, Community College of Allegheny County Board of Trustees; former U.S. attorney for the Western District of Pennsylvania

Task Force members are serving in their individual capacity.

Government Advisory Panel

The task force is served by an advisory panel composed of designees from Allegheny County and the City of Pittsburgh.

Chris Belasco, project manager, Department of Innovation and Performance, City of Pittsburgh

Erin Dalton, director, Department of Human Services, Allegheny County

T. Matthew Dugan, chief public defender, Allegheny County Office of the Public Defender

Joanne Foerster, director of performance and analytics, Allegheny County

Heath Johnson, manager, crime analysis, Pittsburgh Bureau of Police

Laura Meixell, enterprise data architect, Department of Human Services, Allegheny County

Shatara Murphy, assistant director, community affairs, Department of Public Safety, City of Pittsburgh



“Increasingly, algorithms are being used to facilitate efficient government. We need to ensure that historical discrimination and existing inequities are not reinforced. Pittsburgh should lead the way in effective and fair oversight of these systems. We can be a national model, ensuring algorithmic accountability and equity for all residents.”

*—Pitt Cyber Founding Director
David Hickton*

Protecting Democracy and Securing Our Elections: A Series

Building on our work with the Blue Ribbon Commission on Pennsylvania’s Election Security, Pitt Cyber hosted a series of events that discussed state-level approaches to election security, accessibility, and preparations for the 2022 elections—and what those approaches meant for American democracy.

Michigan Secretary of State Jocelyn Benson joined Pitt Cyber and the Institute of Politics to discuss the importance of maintaining faith and trust in American democracy; and what steps should be taken to continue to ensure the security of our elections.

Protecting Democracy and Securing Our Elections

October 18 | 12:30 PM

Featuring Michigan Secretary of State Jocelyn Benson in Conversation with Pitt Cyber Founding Director David Hickton

Secretary Benson and Director Hickton will discuss state-level approaches to election security, accessibility, and preparations for the 2022 elections – and what it means for American democracy.

The event is hybrid - *in-person attendees will receive a boxed lunch.* Visit cyber.pitt.edu/benson for registration details.

University of Pittsburgh
Sponsored by the Institute for Cyber Law, Policy and Security and the Institute of Politics

“Democracy prevailed in 2020 because people on both sides of the aisle did the right thing. And we have a lot to do to ensure democracy prevails again.”

*—Michigan Secretary of State
Jocelyn Benson*

Protecting Democracy and Securing Our Elections: A Series

Georgia Secretary of State Brad Raffensperger joined Pitt Cyber and the Institute of Politics to discuss election security, the future of democracy in America, and ways that citizens who disagree politically can have open and constructive conversations.



Pitt Cyber convened a panel of elections experts about the challenges facing Pennsylvania's elections and the opportunities looking forward. They discussed post-election audits, trust in elections and democracy, and other election-related issues facing the commonwealth.

Protecting Democracy and Securing Our Elections

Pennsylvania's Elections: Threats, Strengths, and What Might Lie Ahead

NOVEMBER 17 | 12:30 PM

Join Pitt Cyber for a discussion with election experts to discuss post-election audits, trust in elections and democracy, and other elections issues facing the Commonwealth and the country.

 Kathy Boockvar Center for Internet Security	 Alexa Grant Common Cause Pennsylvania	 Liz Howard Brennan Center for Justice	 David Thornburgh Committee of Seventy	 Chris Deluzio (moderator) Pitt Cyber
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Pitt Cyber Institute for Cyber Law, Policy, and Security



Students attending summer programming at Pitt's Community Engagement Center in the Hill District joined the Cyber Camp.

Air Force Association CyberPatriot Camp

Pitt Cyber hosted its fifth annual Air Force Association Cyber Camp for high school students in summer 2021 in partnership with Pitt Information Technology and with support from AT&T, EQT Foundation, The Grable Foundation, Microsoft, and UPMC Women in IT.

The camp is a pillar of Pitt Cyber's efforts to expand an inclusive pipeline for future technologists and is free for all students.

The camp inspires students to take an interest in cybersecurity and other STEM fields. The interactive curriculum is focused on cyber ethics, systems security, and network security. Students also heard from speakers like Jim Eckart, chief security advisor at Microsoft; David Odom, chief information security officer at the Naval Nuclear Laboratory; and Bindu Sundaresan, director at AT&T Cybersecurity.

In 2021, our second virtual camp, saw 100 students from across Pittsburgh joining us and instructors from regional high schools, the University of Pittsburgh, and corporate volunteers. For the first time in 2021, Pitt Cyber partnered with Pitt's Community Engagement Centers in the Hill District and Homewood to offer camp classrooms as part of the centers' summer programming.

“Cyber Camp helped me understand the importance of cybersecurity in our world today and exposed me to different career paths.”

—2021 Cyber Camp student



Pitt Cyber Accelerator Grants

We launched the Pitt Cyber Accelerator Grants (PCAG) program in 2018 to provide initial funding for novel and innovative projects that advance Pitt Cyber's mission: to bring the breadth of one of the world's leading public research universities to bear on the critical questions of networks, data, and algorithms, with a focus on the ever-changing gaps among law, policy, and technology.

PCAG funding is used to advance projects that establish and extend key intellectual infrastructures, such as research and teaching in methods with broad application and utility across disciplines and projects that bring together researchers across fields of interest.

2021 Recipients

Influencing Detection through Multimodal Discourse and Vividness Analysis

Malihe Alikhani, assistant professor, Department of Computer Science, School of Computing and Information

Jeffrey Cohn, professor, Department of Psychology, Kenneth P. Dietrich School of Arts and Sciences

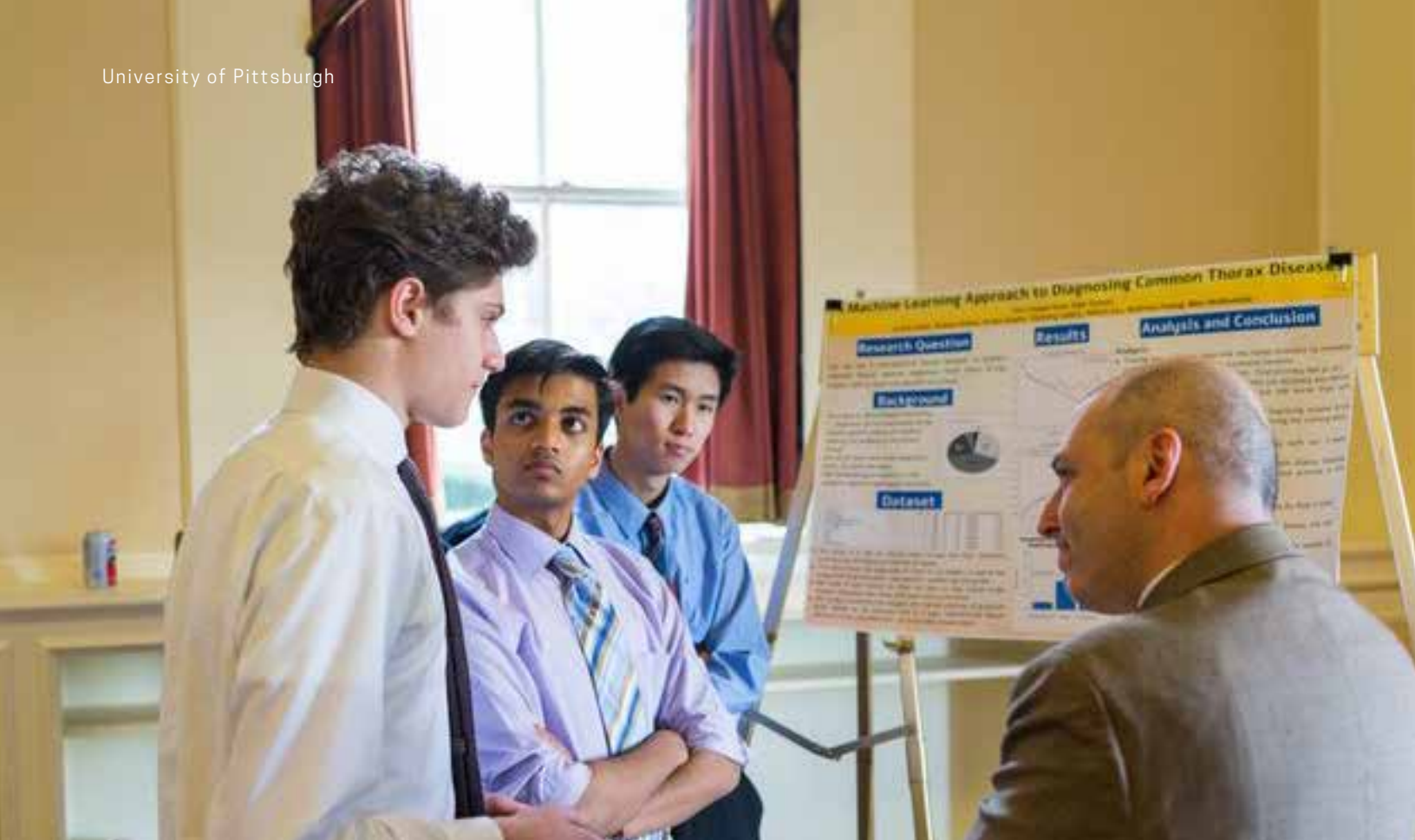
Rebecca Hwa, professor, Department of Computer Science, School of Computing and Information

Adriana Kovashka, assistant professor, Department of Computer Science, School of Computing and Information

Yu-Ru Lin, associate professor, Department of Informatics and Networked Systems, School of Computing and Information

Diane Litman, professor, Department of Computer Science, School of Computing and Information

Tessa Provins, assistant professor, Department of Political Science, Kenneth P. Dietrich School of Arts and Sciences



2021 Recipients, continued

The Pittsburgh Data Jam: Increasing Data Science Education in High Schools

Thomas Akiva, associate professor, Department of Health and Human Development, School of Education

Judy Cameron, professor, Department of Psychiatry, School of Medicine

Bryan Nelson, assistant instructor, Department of Statistics, Kenneth P. Dietrich School of Arts and Sciences

Framework for Qualitative Research into Social Media and Misinformation

Rosta Farzan, associate professor and associate dean for diversity, equity and inclusion, School of Computing and Information

Mehr Latif, postdoctoral research associate, Department of Sociology, Kenneth P. Dietrich School of Arts and Sciences

Lara Putnam, University Center for International Studies Research Professor, Department of History, Kenneth P. Dietrich School of Arts and Sciences

Modeling the Effect of Disinformation on COVID-19 Vaccination Discourse in Online Social Networks

Malihe Alikhani, assistant professor, Department of Computer Science, School of Computing and Information

Dmitriy Babichenko, clinical associate professor, Department of Informatics and Networked Systems, School of Computing and Information

Kar-Hai Chu, associate professor, Department of Behavioral and Community Health sciences, School of Public Health

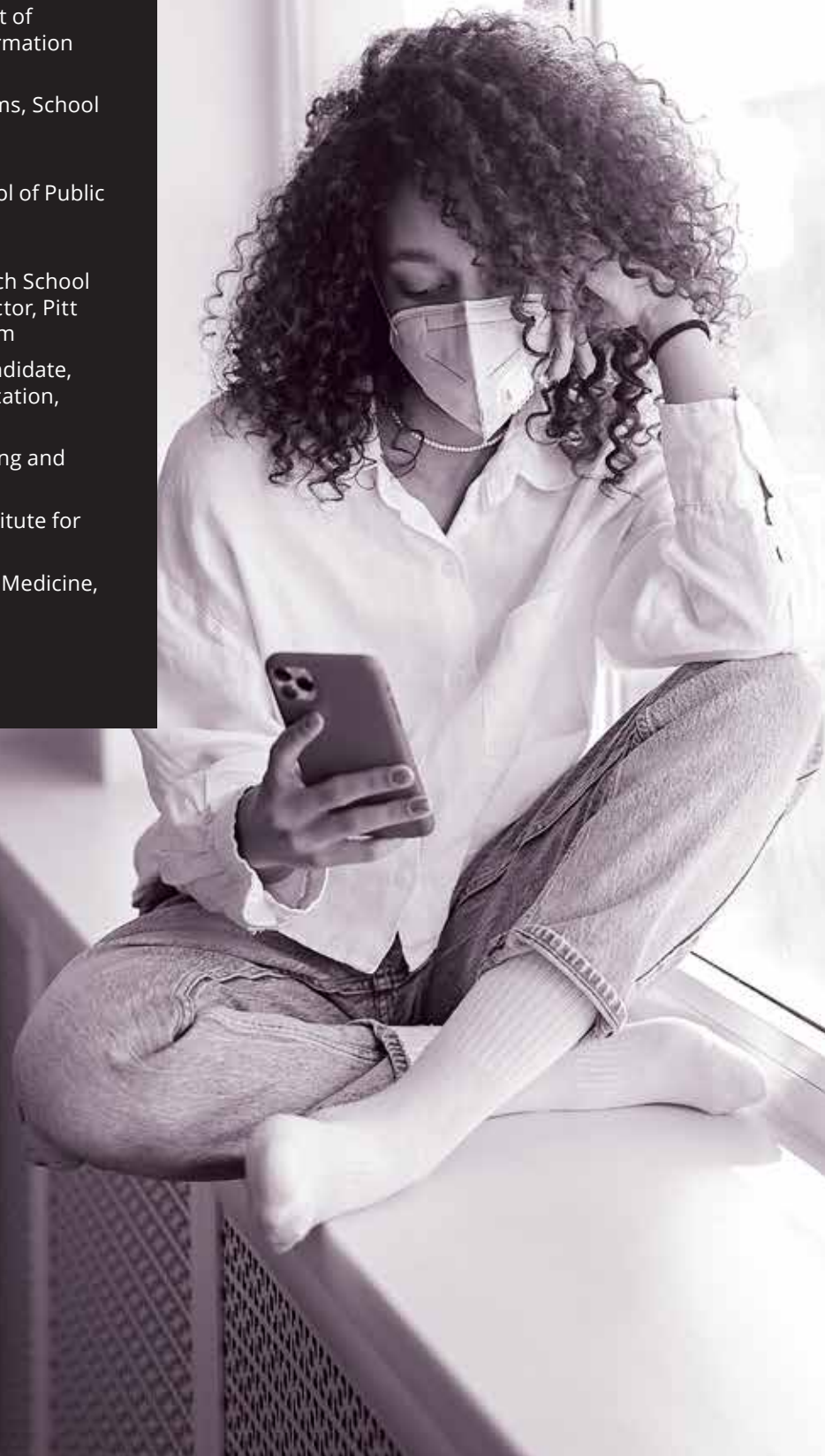
Michael Colaresi, William S. Dietrich II Professor, Department of Political Science, Kenneth P. Dietrich School of Arts and Sciences; research and academic director, Pitt Cyber; affiliate scholar, Intelligent Systems Program

Jason Colditz, research project manager, PhD candidate, and instructor, Institute for Clinical Research Education, School of Medicine

Patrick Healy, PhD candidate, School of Computing and Information

Beth Hoffman, graduate student researcher, Institute for Clinical Research Education, School of Medicine

Jaime Sidani, assistant professor, Department of Medicine, School of Medicine



2021 Recipients, continued

PCAG Spotlight: Allegheny County Policing Project

In 2020, Pitt Cyber provided a PCAG grant to Sera Linardi, associate professor, Graduate School of Public and International Affairs (GSPIA), and Yu-Ru Lin, associate professor, School of Computing and Information, to support the development of a project called Digitally Mediated Transparency for Police-Community Relations.

This effort ultimately grew into the Allegheny County Policing Project at the Center for Analytical Approaches in Social Innovation at GSPIA and its Grief to Action effort. The participants developed a platform to help the public understand police-government-citizen interactions. The platform includes a searchable library of nearly 100 police contracts, an interactive map of Allegheny County's more than 100 police departments, and a guide to help residents navigate filing misconduct complaints.

The project has attracted more than 180 volunteers, from community members to students to faculty, was created using a cycle of continuous community and student engagement, and is ongoing today at griefftoaction.org.

“Being able to collect data on local police departments will be helpful for our organizing and mobilizing efforts. In addition, it helps that the focus is on the county and not just Pittsburgh. There is an overwhelming need to focus on more of these small departments, especially from a data standpoint.”

—Fawn Montgomery, cofounder and executive director, Take Action Mon Valley



Honors and Awards

Scholarship and teaching achievements by Pitt Cyber affiliate scholars continued to receive recognition across the University and beyond. Here are some highlights.

Affiliate scholars

Malihe Alikhani, School of Computing and Information, received an honorable mention at the Association for Computing Machinery International Conference on Intelligent Virtual Agents for her and her colleague's paper, "Towards Designing Enthusiastic AI Agents," and a Best Short Paper Award at the International Conference on Natural Language Generation for her and her colleagues' paper, "Examining Covert Gender Bias: A Case Study in Turkish and English Machine Translation Models."

Ahmed Ibrahim, School of Computing and Information, was selected as a Pitt Seed Grant recipient to build a Pitt Cyber Range, a sandboxed environment to simulate real attacks and defenses for students, educators, and community groups.

Sera Linardi, Graduate School of Public and International Affairs, received the Association for Computing Machinery Conference on Equity and Access in Algorithms,

Mechanisms and Optimization's New Horizon Award, recognizing those who successfully bridge research and practice, for the project 412Connect: Bridging Students and Communities with her collaborators Alex DiChristofano, Michael L. Hamilton, and Mara F. McCloud.

Nora Mattern, School of Computing and Information, was selected to chair Pitt's Year of Data and Society.

Leona Mitchell, School of Computing and Information, was selected as a Pitt Seed Grant recipient for her project, Creating a Diverse Cybersecurity Workforce, with **Alexa Bakalarski** and affiliate scholar **Ahmed Ibrahim**. The project aims to increase qualified candidates in the cybersecurity field by creating a series of asynchronous boot camps, making cybersecurity education more accessible while helping to address the skills shortage in the industry.

Audrey Murrell, Joseph M. Katz Graduate School of Business, received the 2021 Sheth Distinguished Faculty Award for International Achievement, recognizing her lifetime contributions to furthering international education.

Amin Rahimian, Swanson School of Engineering, received the Most Inspiring Research Paper Award at the Association for Computing Machinery Collective Intelligence Conference in 2021 for his and colleagues' paper, "Algorithmically Mediating Communications to Enhance Collective Decision Making in Online Social Networks." Rahimian also was a finalist for Facebook Research's 2021 Statistics for Improving Insights, Models, and Decisions for his proposal, "Data Acquisition and Social Network Intervention CoDesign: Privacy and Equity."

Martin Weiss and colleagues received a \$25 million five-year grant from the National Science Foundation's Spectrum Innovation Initiative for their effort, SpectrumX, to develop spectrum policy and technical innovations.

Publications

Pitt Cyber's affiliate scholars published widely in 2021.

“Perceived Facilitators of and Barriers to Implementation of a Decision Support Tool for Adolescent Depression and Suicidality Screening: Focus Group and Interview Study”

September 2021 | Ana Radovic, Nathan Anderson, Megan Hamm, Brandie George-Milford, Carrie Fascetti, Stacey Engster, Oliver Lindhiem; JMIR Mental Health

“Automation Impacts on China's Polarized Job Market”

July 2021 | Haohui Caron Chen, Xun Li, Morgan Frank, Xiaozhen Qin, Weipan Xu, Manuel Cebrian, Iyad Rahwan; Journal of Computational Social Science

“Developing China's Workforce Skill Taxonomy Reveals Extent of Labor Market Polarization”

July 2021 | Weipan Xu, Xiaozhen Qin, Xun Li, Haohui Chen, Morgan Frank, Alex Rutherford, Andrew Reeson, Iyad Rahwan; Nature Humanities and Social Sciences Communications

“Experience of Peer Bloggers Using a Social Media Website for Adolescents with Depression or Anxiety: Proof-of-Concept Study”

July 2021 | Sana Karim, Kimberly Hsiung, Maria Symonds, Ana Radovic; JMIR Form Res.

Algorithmically Mediating Communication to Enhance Collective Decision Making in Online Social Networks

June 2021 | Jason Burton, Ulrike Hahn, Abdullah Almaatouq, Amin Rahimian; ACM Collective Intelligence Conference

“Housing Prices and the Skills Composition of Neighborhoods”

May 2021 | Shahad Althobaiti, Saud Alghumayjan, Morgan Frank, Esteban Moro, Ahmad Alabdulkareem, Alex Pentland; Frontiers in Big Data

“You Have People Here to Help You, People Like Me”: A Qualitative Analysis of a Blogging Intervention for Adolescents and Young Adults with Depression or Anxiety

May 2021 | Julia Marie Bickerstaff, Sana Karim, Rachel Kallem Whitman, Alyssa Cypher, Susan Wiener, Ana Radovic; Journal of Technology in Behavioral Science

“Universal Resilience Patterns in Labor Markets”

March 2021 | Morgan Frank, Esteban Moro, Alex Pentland, Alex Rutherford, Manuel Cebrian, Iyad Rahwan; Nature Communications

“Covert Action, Espionage, and the Intelligence Contest in Cyber Space”

March 2021 | Michael Poznansky; War on the Rocks

“The Republic of Letters and the Origins of Scientific Knowledge Commons,” a book chapter in Governing Privacy as Knowledge Commons

March 2021 | Michael J. Madison; Cambridge University Press

“Fair Play: Notes on the Algorithmic Soccer Referee”

February 2021 | Michael J. Madison; Vanderbilt Journal of Entertainment and Technology Law

Education

A range of cyber-related courses continued to be offered throughout the University of Pittsburgh in 2021, including those offered as part of graduate certificates in cyber law, policy, and security.

Pitt Cyber Founding Director **David Hickton** taught **Cyber Policy, Crime, and National Security at the School of Law**. The course explores the theoretical and practical aspects of nation-state legal issues concerning cyberspace, with a particular focus on computer-related crime, espionage, war, and international governance. The course reflects on the roles of national and international governments, the legal and ethical dimensions of cybersecurity, the relationship between the public and private sectors, and the increasing tensions between privacy and national security.

Pitt Cyber Affiliate Scholar **Adam Lee** taught **Applied Cryptography and Network Security to graduate and undergraduate students at the School of Computing and Information**. The course provides the necessary conceptual background and hands-on experience to understand the most common cryptographic algorithms and protocols and how to use them to secure computers networks and distributed applications. Topics included cryptographic algorithms for data confidentiality, authentication,

and integrity; user authentication methods (secure tokens and biometrics); internet security protocols; security in local area networks; firewalls; and intrusion detection systems.

Pitt Cyber Policy Director **Chris Deluzio** taught **Cybersecurity, Privacy, and American Democracy at the School of Law**. The course explores the intersection of cybersecurity issues and American democracy and how the proliferation of technology in the cyber age has not only collided with existing norms and laws around privacy but also stressed American democracy in profound ways. By first exploring the legal framework around cybersecurity and privacy, students have grounding to examine these complex issues facing American democracy.

Pitt Cyber Affiliate Scholar **Lisa Nelson** taught **Ethics and Policy in Cyberspace at the Graduate School of Public and International Affairs**. The course explores how information technology and the information that it generates has increasingly become part of our daily lives shaping our practices, discourses, and institutions in fundamental ways. The growing reliance on personal

information not only challenges long-standing demarcations between public and private institution in terms of responsibilities, obligations, and limits but also calls for a reconsideration of how to ensure the protection of long-standing civil liberties and civil rights. The course considers the impact of emerging technologies within existing constitutional, statutory, and international guidelines and then explores a range of policy solutions for managing the use of personal information in our public and private sectors.

Pitt Cyber Research and Academic Director **Michael Colaresi** taught **Introduction to Computational Science** at the Kenneth P. Dietrich School of Arts and Sciences. The course serves as the overall introduction to computational social science. It showcases why computational social science is needed and distinct and introduces students to cutting-edge applications of computational social science across topics that range from climate change and public health to cybersecurity. The course is part of the new bachelor's degree program in computational social science at the University.

Programming and Events

Pitt Cyber hosted and participated in a range of programming in 2021.

Gov 2025 Jam with Pitt Cyber Founding Director David Hickton, Protecting Critical Systems, hosted by IBM

2021 Symposium on Biometric Ethics, featuring Pitt Cyber Executive Director **Beth Schwanke**, hosted by the **Duquesne University Carl G. Grefenstette Center for Ethics in Science, Technology, and Law**

Free Movement in the Time of COVID: The Economics and Ethics of Digital Vaccine Passports, hosted by the **European Studies Center and Pitt Cyber**



David Hickton (left), founding director of Pitt Cyber, with Valdis Dombrovskis

Trade, Technology, and the Transatlantic Relationship, featuring European Commission Executive Vice President Valdis Dombrovskis, hosted by the **European Studies Center, Pitt Cyber, the Jean Monnet in the U.S.A. Network, the European Union Studies Association**, and the **Center for International Legal Education** at the University of Pittsburgh School of Law

Stanford Infodemic Conference, featuring Pitt Disinformation Lab researcher **Jessica Ghilani**

Today's Electronic Voting Machines: An Examination of the Use and Security of Ballot Marking Devices, featuring Pitt Cyber Policy Director **Chris Deluzio**, hosted by **Free Speech for the People**

Cyberbullying Among Youth, featuring Pitt Cyber Affiliate Scholar Candice Biernesser, hosted by **Pitt Information Technology**

Disrupting Disinformation, featuring Pitt Cyber Policy Director **Chris Deluzio**, hosted by **Sagely**

Battling the Infodemic: Covid-19 Mis- and Disinformation, hosted by **Pitt Cyber**

Global Privacy Law and Conflict, featuring Pitt Cyber Affiliate Practice Scholar **John Kropf**, hosted by the **Center for International Legal Education** at the University of Pittsburgh School of Law

Pitt Honors Data Privacy Day 2021, hosted by **Pitt Honors, Pitt Cyber**, and the **Sara Fine Institute** at the School of Computing and Information

Cybersecurity for Your Business, featuring Pitt Cyber Founding Director **David Hickton** and Policy Director **Chris Deluzio**, hosted by the **African American Chamber of Commerce of Western Pennsylvania**

The Ransomware Threat, featuring Pitt Cyber Founding Director **David Hickton** and Policy Director **Chris Deluzio**, hosted by the **Pennsylvania State Mayors' Association**

The flyer is for an event titled "Trade, Technology, and the Transatlantic Relationship" held on Thursday, September 30, 2021, at 11:00 a.m. EST. It is a hybrid event with a physical location at the WPU Lower Lounge and a virtual Zoom session. The event features Valdis Dombrovskis, Executive Vice-President for an Economy that Works for People, as the guest speaker. The flyer includes the University of Pittsburgh logo, the Jean Monnet in the USA logo, and a registration link for the Zoom session. It also mentions the "Year of Recovering Europe" and provides contact information for the event organizers.

Forbes Corridor Colloquia

Hosted by Pitt Cyber, the Institute for Writing Excellence in the Kenneth P. Dietrich School of Arts and Sciences, and the Sara Fine Institute in the School of Computing and Information and led by Pitt Cyber Affiliate Scholars Jen Keating and Nora Mattern, the Forbes Corridor Colloquia bring together faculty and students from across disciplines at the University of Pittsburgh and Carnegie Mellon University to consider the short- and long-term influences of advancing technology on our local and global communities.

The colloquia build bridges across domain areas and institutions to discover our common interests locally and meet key thinkers from outside our community to generate new directions for our shared work. In 2021, participants explored the themes of responsibility and trust.

Sessions on Responsibility

Responsibility Creating Human-Robot Interactions

Henny Admoni, A. Nico Habermann
Assistant Professor, Robotics
Institute, Carnegie Mellon University

Towards Responsible and Trustworthy Interactive Language Technologies

Malihe Alikhani, assistant
professor, Department of Computer
Science, School of Computing and
Information, University of Pittsburgh

Responsible AI: How Can We Make Artificial Intelligence Work for Everyone?

James Foulds, assistant professor,
Department of Information Systems,
University of Maryland, Baltimore
County

Sessions on Trust

Ethics and AI in Medicine: Transparency about What?

Alex London, Clara L. West Professor
of Ethics and Philosophy, Carnegie
Mellon University, and Lisa Parker,
Dickie, McCamey & Chilcote Professor
of Bioethics; director of the Center
for Bioethics and Health Law; and
professor, Department of Human
Genetics, Graduate(?) School of Public
Health, University of Pittsburgh
City of Pittsburgh, Autonomous
Vehicles, and Public Trust
Erin Clark, policy analyst, and
Kimberly Lucas, acting director,
Department of Mobility and
Infrastructure, City of Pittsburgh

City of Pittsburgh, Autonomous Vehicles, and Public Trust

Erin Clark, policy analyst, and
Kimberly Lucas, acting director,
Department of Mobility and
Infrastructure, City of Pittsburgh

In the News

Coverage of Pitt Cyber and affiliate scholars' work in 2021 included the following.

"Cyberattack on Butler College Part of Growing Trend; Experts Urge Vigilance to Thwart Hackers" | TribLive

Pennsylvania's Former Top Voting Official Debunks Misinformation in Real Time at Election Forum | WESA

What Would a Partisan Election Review Look Like for Pennsylvania? | City & State Pennsylvania

David Hickton Appears on Maddow to Discuss Pegasus Implications | "The Rachel Maddow Show"

Editorial: County Leaders Should Reject Baseless Call for Third-party Election Probe | The Tribune-Democrat

"After Backlash, Predictive Policing Adapts to a Changed World" | The Wall Street Journal

Senate Republican's Request for 3 Counties' Election Records Draws Quick Criticism | CNHI News

David Hickton of the New Pitt Disinformation Lab Explains How Disinformation Is Being Spread Online in an Effort to Divide the Public | "The Confluence," WESA

"New Pitt Lab to Combat Digital Disinformation" | TribLive



"Is Trump Still President? Are Aliens in Cahoots with NASA? New Pitt Lab to Fight Disinformation" | Pittsburgh Post-Gazette

"Amid Wave of Private Sector Hacks, Feds Face Pressure to Aid Businesses on Cybersecurity Response" | Pittsburgh Post-Gazette

FBI: Ransomware Attacks Are on the Rise and Criminals Are Getting Bolder | KDKA

"Experts Say Pa.'s 2021 Primary Was Typical, But GOP Lawmakers Are Seizing on Issues" | Spotlight PA

"Pitt Cyber Expert Says Critical U.S. Infrastructure Is Vulnerable" | TribLIVE

Millions of Pittsburgh Parking App Users Hit by Major Data Hack | WTAE

"Election Code Proposals Trigger Debate in Harrisburg as Hearings Progress" | TribLive

Editorial: What Part of 'Permanent' Don't State Election Rulemakers Understand? | TribLive

"Pennsylvania Mail-in Ballot Registry Isn't as Permanent as the Word Implies" | TribLive

"False Narratives Seeped in through Multiple Channels to Fuel Violence at the Capitol" | TribLive

"Facial Recognition Use Spiked After the Capitol Riot. Privacy Advocates Are Leery" | Public Source

Op-Eds

Pennsylvania's Election Audit Moves Follow the Partisan Playbook | Chris Deluzio for The Hill

Private Companies Need Federal Support to Protect Our Critical Infrastructure | David Hickton for The Hill

Misremembering a Summer of Protest: Comparing the Capitol Riot to the Racial Justice Movement Cements a False History | Lara Putnam for Public Source

People

Institute Staff

David Hickton, founding director; professor of law

Beth Schwanke, executive director

Michael Colaresi, research and academic director; William S. Dietrich II Chair of Political Science

Chris Deluzio, policy director

Sarah Barca, administrative director

Kate Ulreich, IT consultant, with thanks and appreciation for the generosity of Pitt Information Technology

We said goodbye this year to our resident scholar **Kirsten Todt** as she joined the U.S. Department of Homeland Security's Cyber and Infrastructure Security Agency.

Affiliate Scholars

Pitt Cyber's affiliate scholars are faculty members drawn from across the University.

Kevin C. Abbott, adjunct professor, School of Law

Malihe Alikhani, assistant professor, School of Computing and Information

Kevin D. Ashley, professor, School of Law

Amy Babay, assistant professor, School of Computing and Information

Dmitriy Babichenko, clinical associate professor, School of Computing and Information
Elena A. Baylis, professor, School of Law

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Mostafa Bedewy, assistant professor, Swanson School of Engineering

Candice Biernesser, postdoctoral scholar, School of Medicine

Ronald A. Brand, Mark A. Nordenberg University Professor; John E. Murray Faculty Scholar; and academic director, Center for International Legal Education, School of Law

Matt Burton, lecturer, School of Computing and Information

Bruce R. Childers, associate dean for strategic initiatives and professor, School of Computing and Information

William W. Clark, professor, Swanson School of Engineering

Dan Cole, associate professor and director, Stephen R. Tritch Nuclear Engineering Program, Swanson School of Engineering

Mary Crossley, professor, School of Law

Stephanie Dangel, executive director, Innovation Practice Institute, School of Law

Rosta Farzan, associate professor and associate dean for diversity, equity and inclusion, School of Computing and Information

Morgan R. Frank, assistant professor, Department of Informatics and Networked Systems, School of Computing and Information

Lindsey French, visiting assistant professor, Department of Studio Arts, Kenneth P. Dietrich School of Arts and Sciences

Wei Gao, associate professor, Swanson School of Engineering

Michael Goodhart, professor, Department of Political Science, Kenneth P. Dietrich School of Arts and Sciences

Max Goplerud, assistant professor of political science, Department of Political Science, Kenneth P. Dietrich School of Arts and Sciences

Joel M. Haight, associate professor, Swanson School of Engineering

David A. Harris, Sally Ann Semenko Endowed Chair and Professor of Law, School of Law

Harry Hochheiser, associate professor, School of Medicine

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Jingtong Hu, assistant professor, Swanson School of Engineering

M. Zia Hydari, assistant professor, Joseph M. Katz Graduate School of Business and College of Business Administration

Alex Jones, professor and associate director, National Science Foundation Center for Space, High Performance, and Resilient Computing, Swanson School of Engineering

Kate Joranson, head librarian, University Library System

James Joshi, professor, School of Computing and Information

Michael Kenney, professor; Posvar Chair in International Security Studies; and director, Matthew B. Ridgway Center for International Security Studies, Graduate School of Public and International Affairs

Mario Khreiche, postdoctoral researcher, Department of History, Kenneth P. Dietrich School of Arts and Sciences

Maria Kovacs, Distinguished Professor of Psychiatry and Psychology, Department of Psychiatry, School of Medicine

Prashant Krishnamurthy, professor, School of Computing and Information

Affiliate Scholars, continued

Howard A. Kuhn, adjunct professor, Swanson School of Engineering

John R. Lange, assistant professor, School of Computing and Information

Alison Langmead, clinical professor and director, Visual Media Workshop, Department of History of Art and Architecture, Kenneth P. Dietrich School of Arts and Sciences and School of Computing and Information

Adam J. Lee, associate dean for academic programs and associate professor, School of Computing and Information

Stephen Lee, assistant professor, School of Computing and Information

Yu-Ru Lin, associate professor, School of Computing and Information

Sera Linardi, assistant professor, Graduate School of Public and International Affairs

Michael J. Madison, faculty director, Innovation Practice Institute, and professor, School of Law

Eleanor Mattern, teaching assistant professor and director, Sara Fine Institute, School of Computing and Information

Lucas Mentch, assistant professor, Department of Statistics, Kenneth P. Dietrich School of Arts and Sciences

Daniel Mosse, professor, School of Computing and Information

Audrey J. Murrell, associate dean and director, David Berg Center for Ethics and Leadership, Joseph M. Katz Graduate School of Business and College of Business Administration

Lisa S. Nelson, associate professor, Graduate School of Public and International Affairs

Mary L. Ohmer, associate professor, School of Social Work

Balaji Palanisamy, professor, School of Computing and Information

Jennifer Petrie, assistant director, David Berg Center for Ethics and Leadership, Joseph M. Katz Graduate School of Business and College of Business Administration

Lara Putnam, University Center for International Studies Research Professor, Department of History, Kenneth P. Dietrich School of Arts and Sciences

Cassie F. Quigley, associate professor of science education, School of Education

Stephen Quigley, visiting lecturer, Department of English, Kenneth P. Dietrich School of Arts and Sciences

Ana Radovic, assistant professor of pediatrics, School of Medicine

Amin Rahimian, assistant professor, Swanson School of Engineering

Gregory Reed, director, Center for Energy and Energy Grid Institute, Swanson School of Engineering

Anthony Rodi, interim associate dean, College of Business Administration, and clinical associate professor, Joseph M. Katz Graduate School of Business and College of Business Administration

Julia M. Santucci, senior lecturer and director, Johnson Institute for Responsible Leadership and the Frances Hesselbein Leadership Forum, Graduate School of Public and International Affairs

Jaime E. Sidani, assistant professor of medicine and assistant director, Center for Research on Behavioral Health, Media, and Technology, School of Medicine

Jonathan Silverstein, chief research informatics officer, Health Sciences and Institute for Precision Medicine, and professor of biomedical informatics, School of Medicine

David Tipper, professor, School of Computing and Information

Albert C. To, William Kepler Whiteford Professor; director, Modeling & Optimization Simulation Tools for Additive Manufacturing Consortium; and director, ANSYS Additive Manufacturing Research Laboratory, Swanson School of Engineering

Annette Vee, assistant professor, Department of English, Kenneth P. Dietrich School of Arts and Sciences

Götz Vesper, Nickolas DeCecco Professor and associate director, Center for Energy, Swanson School of Engineering

Brian Vidic, director of partnerships, Office of Economic Partnerships

Martin B.H. Weiss, chair, Department of Informatics and Networked Systems, and professor, School of Computing and Information

Phil Williams, professor and director, Matthew B. Ridgway Center for International Security Studies, Graduate School of Public and International Affairs

Christopher E. Wilmer, assistant professor, Swanson School of Engineering

Lingfei Wu, assistant professor, School of Computing and Information

Bo Zeng, assistant professor, Swanson School of Engineering

Taieb Znati, chair, Department of Computer Science, and professor, School of Computing and Information

Affiliate Practice Scholars

Pitt Cyber's Affiliate Practice scholars are drawn from across the industry and policy worlds.

Lieutenant Colonel Diana Bishop (ret.), former Detachment 730 commander and professor, aerospace studies, Air Force ROTC

Michael A. Comber, partner, Farrell & Reisinger, LLC

Akshana Dassanaik-Perera, CEO and cofounder, Steel City Codes

Christopher A. Geary, unit chief, Cyber Initiative and Resource Fusion Unit, FBI Cyber Division

Brian Geffert, global chief information security officer, KPMG International

Bob Gradeck, project manager, Western Pennsylvania Regional Data Center

James T. Kitchen, counsel, Jones Day

John Kropf, corporate privacy executive, Northrop Grumman

Martin Lindner, managing principal consultant, SecureWorks

Keith Mularski, advisory executive director of cybersecurity, Ernst & Young LLP

David Odom, chief information security officer, Naval Nuclear Laboratory

Harvey Rishikof, director of cybersecurity, Applied Research Laboratory for Intelligence and Security, University of Maryland

Claire Shao, chief financial officer, Steel City Codes

Lieutenant Colonel James J. Straub Jr., Air Force ROTC Detachment 730 commander

Sean Sweeney, senior director and chief security advisor, Microsoft Cybersecurity Solutions Group

Josh Zhou, chief operating officer and cofounder, Steel City Codes

With Gratitude

Pitt Cyber is a truly University-wide effort. We are grateful for collaborations from across the University. Pitt Cyber owes a particular debt of gratitude to the Office of the Chancellor, Office of the Provost, Office of University Counsel, Pitt Information Technology, and the School of Law. We also are grateful for the constant support of the Office of University Communications and Marketing and the Division of Philanthropic and Alumni Engagement.



University of
Pittsburgh

Institute for Cyber Law, Policy, and Security

2516 Cathedral of Learning
4200 Fifth Avenue
Pittsburgh, PA 15260

cyber.pitt.edu