


2019 NIEJELOW RODIN
GLOBAL DIGITAL FUTURES POLICY FORUM



Navigating Digital Transformations: Survive or Thrive?

FRIDAY, MAY 10, 2019 | 8:30 AM-6 PM

Italian Academy, Columbia University, New York



CONFERENCE OVERVIEW

May 10, 2019

Columbia University School of International and Public Affairs

Now in its fifth year, the newly-renamed Niejelow Rodin Global Digital Futures Policy Forum brings together leading scholars from the School of International and Public Affairs (SIPA) and Columbia University, business leaders, policymakers, entrepreneurs, academics, journalists, and others to discuss the broad challenges and opportunities created by wide-ranging digital transformations occurring in the world today.

The theme of this year's *Forum Is Navigating Digital Transformations: Survive or Thrive?* Across a full-day of keynote addresses, panel discussions, and fireside chats, scholars and experts will examine the growing impact of digital technology and data in critical areas such as speech, elections, regulation, artificial intelligence, cyber business risk, and cybersecurity. Each area will focus on governance challenges and possible policy solutions—whether from private individuals, firms, or governments.

Among the key questions that we will discuss today:


- How can open and pluralistic societies thrive in the digital future—be it with respect to elections and speech, regulating/governing the digital economy; and the AI/data/algorithmic world?
- How can we establish a roadmap towards “cyber peace” and cyber governance in the global context and financial stability in a world of increased cyber risk?

Today's event builds upon four previous annual conferences convened by SIPA's Tech and Policy Initiative. Each has focused on the potential benefits and costs arising from global digital technology changes in areas such as internet governance and cybersecurity (2015); global data governance (2016); internet fragmentation (2017); and the state of the field on digital transformations (2018). In each instance, we have sought to assess key digital technology challenges and develop possible policy approaches and solutions.

We thank our co-sponsors for this year's forum: the Columbia University Data Science Institute, Knight First Amendment Institute, Tow Center for Digital Journalism, and the Internet Society. We also are deeply grateful to the Niejelow/Rodin family for their generous support.

NIEJELOW RODIN GLOBAL DIGITAL FUTURES POLICY FORUM

- 8:30 a.m.–9:00 a.m. **Registration & Breakfast**
- 9:00 a.m.–9:05 a.m. **Welcome & Brief Introduction: Dean Merit E. Janow**
- 9:05 a.m.–9:15 a.m. **Opening Comments: Kara Swisher, Technology Business Journalist and Co-Founder of Recode**
- 9:15 a.m.–10:10 a.m. **SESSION 1: Can We De-Weaponize Social Media for Speech?**
John Battelle, Co-Founder and CEO, Recount Media
Jameel Jaffer, Director, Knight First Amendment Institute, Columbia University
Alex Macgillivray, Board Member, Data & Society, and former Deputy CTO of the U.S.
Kara Swisher, Technology Business Journalist and Co-Founder of Recode
Emily Bell, Tow Center for Digital Journalism, Columbia Journalism School (MODERATOR)
- 10:10 a.m.–11:05 a.m. **SESSION 2: Digital Technology and the Future of Elections**
Josh Benaloh, Senior Cryptographer, Microsoft Research
Renee DiResta, Mozilla Fellow, Media, Misinformation, and Trust
Mac Warner, West Virginia Secretary of State
Avril Haines, Deputy Director, Columbia World Projects (MODERATOR)
- 11:05 a.m.–11:20 a.m. **Morning Coffee Break**
- 11:20 a.m.–12:15 p.m. **SESSION 3: Can we Navigate Major Regulatory Transformations?**
Victoria Espinel, President and CEO, BSA|The Software Alliance
Eli Noam, Director, Global Institute for Tele-Information, Columbia University
Samm Sacks, Cybersecurity Policy and China Digital Economy Fellow, New America
Fred Wilson, Partner, Union Square Ventures
Tim Wu, Professor of Law, Science and Technology, Columbia Law School
Anupam Chander, Professor, Georgetown University Law Center (MODERATOR)
- 12:15 p.m.– 1:10 p.m. **SESSION 4: AI & Governance**
Ronaldo Lemos, Director, Institute for Technology and Society of Rio de Janeiro
Daniela Rus, Director, Computer Science and AI LAB, MIT
JoAnn Stonier, Chief Data Officer, MasterCard
Eric Talley, Professor, Columbia Law School
Jeannette Wing, Director, Data Science Institute, Columbia University (MODERATOR)
- 1:10 p.m.– 2:15 p.m.
(1:30 p.m.–2:10 p.m.) **Lunch Conversation**
John Battelle, Co-Founder and CEO, Recount Media
Merit E. Janow, Dean, Columbia SIPA
David Sanger, National Security Correspondent, *New York Times* (KEYNOTE)
- 2:15 p.m.– 3:10 p.m. **SESSION 5: Global Governance and Cyber Conflict**
Laura DeNardis, Professor, American University
Angela McKay, Senior Director, Cybersecurity Policy and Strategy, Microsoft
Greg Rattray, Director, Global Cyber Partnerships & Government Strategy, JPMorgan Chase & Co.
Jason Healey, Senior Research Scholar, Columbia SIPA (MODERATOR)
- 3:10 p.m.– 3:35 p.m. **Cybersecurity Fireside Chat**
Lt. Gen. John D. Bansemer (Ret.)
Greg Rattray, Director, Global Cyber Partnerships & Government Strategy, JPMorgan Chase & Co.
- 3:35 p.m.– 3:55 p.m. **Afternoon Coffee Break**
- 3:55 p.m.– 4:50 p.m. **SESSION 6: Can We Achieve Financial Stability in an Era of Growing Cyber Risk?**
Jason Healey, Senior Research Scholar, Columbia SIPA
Patricia Mosser, Senior Research Scholar, Columbia SIPA
Tom Wipf, Vice Chairman of Institutional Securities, Morgan Stanley
Katheryn Rosen, Senior Research Scholar, Columbia SIPA (MODERATOR)
- 4:50 p.m.–5:00 p.m. **CLOSING: Dean Merit E. Janow and Wrap-up**
- 5:00 p.m.–6:00 p.m. **Cocktail Reception**



SESSIONS

SESSION 1: Can We De-Weaponize Social Media for Speech?

MODERATORS / SPEAKERS

Kara Swisher, Technology Business Journalist and Co-Founder of Recode
John Battelle, Co-Founder and CEO, Recount Media
Alex Macgillivray, Board Member, Data & Society, and former Deputy CTO of the U.S.
Jameel Jaffer, Director, Knight First Amendment Institute, Columbia University
Emily Bell, Tow Center for Digital Journalism, Columbia Journalism School (MODERATOR)

Social media was meant to be an empowering leap in human communications, allowing citizens to be more connected and creative than at any time in human history. After a decade of rapid growth, global advertising platforms like Facebook and YouTube are commercially successful but civically disastrous. Social media has transformed the public sphere with reckless speed and virtually no regulation. Facebook, YouTube, Twitter and other social platforms are now battling hate speech, propaganda, misinformation and harassment daily. The problem of weaponized speech urgently needs a better response. Can the platforms provide this with technologies and better corporate governance, or do we need legal and policy remedies to safeguard democracy? A panel of policy, legal, technical and practical experts will tackle these questions and discuss what type of reforms are possible, desirable, and necessary.

SESSION 2: Digital Technology and the Future of Elections

MODERATORS / SPEAKERS

Josh Benaloh, Senior Cryptographer, Microsoft Research
Renee DiResta, Mozilla Fellow, Media, Misinformation, and Trust
Mac Warner, West Virginia Secretary of State
Avril Haines, Deputy Director, Columbia World Projects (MODERATOR)

The rise of digital technologies and data science pose new challenges for democracies around the world. Democratic elections are under threat from cyber attacks from external actors aimed at interfering with the election process and undermining public confidence in the results. In addition, social media and advancements in communication technology have made it easier to spread disinformation, with the goal of influencing voter behavior. Online manipulation and disinformation tactics, according to Freedom House, played an important role in elections in at least 18 countries from 2016 to 2017 alone, demonstrating the double-sided nature of the internet; with its potential to both enhance and undermine the integrity of our elections and our democracy. The challenges facing the United States are no less acute than in other countries around the world. According to polls, nearly two out of five voters in the United States do not believe elections are fair, and nearly half of those surveyed lacked faith that their votes would be counted accurately. Voter concerns are consistent with widespread reporting on the state of our election infrastructure, aging equipment targeted by external actors beset by a lack of sustained funding. This panel will explore how digital technologies are changing democratic systems and what we can do to address some of the challenges identified.

SESSION 3: Can We Navigate Major Regulatory Transformations?

MODERATORS / SPEAKERS

Victoria Espinel, President and CEO, BSA|The Software Alliance
Eli Noam, Director, Global Institute for Tele-Information, Columbia University
Samm Sacks, Cybersecurity Policy and China Digital Economy Fellow, New America
Fred Wilson, Partner, Union Square Ventures
Tim Wu, Professor of Law, Science and Technology, Columbia Law School
Anupam Chander, Professor, Georgetown University Law Center (MODERATOR)

The policy paradigm has shifted from simply enabling digital technology to how to regulate these technologies. Across the world, governments are passing legislation seeking to protect election and internet security. The implications of regulations may require not just minor changes to technology firms' everyday practices, but also require them to find new business models. Europe's General Data Protection Regulation (GDPR) offers both stronger data protection rules and stiffer enforcement. A German NetzDG law requires online platforms to quickly remove "illegal" content. California, home to some of the world's leading digital enterprises, enacted a broad privacy law that has suddenly prompted legislative activity in state houses across the country and even several federal bills. Faced with American law enforcement demands to access information held abroad, Congress passed the Cloud Act to manage inter-jurisdictional conflicts over data. Facebook has set aside billions of dollars to respond to an anticipated Federal Trade Communications (FTC) fine. How will companies both large and small fare in this new regulatory world? This panel will assess the opportunity as well as impact of regulation.

SESSION 4: AI and Governance

MODERATORS / SPEAKERS

Ronaldo Lemos, Director, Institute for Technology and Society of Rio de Janeiro
Daniela Rus, Director, Computer Science and AI LAB, MIT
JoAnn Stonier, Chief Data Officer, MasterCard
Eric Talley, Professor, Columbia Law School
Jeannette Wing, Director, Data Science Institute, Columbia University (MODERATOR)

AI has permeated many aspects of our daily lives—from movie recommendations, targeted advertising, facial recognition, to sentiment analysis. Increasingly, AI systems will be making decisions with wide-ranging personal and societal consequences (e.g. diagnosing disease, autonomous driving, delivering our packages, determining bail, or detecting terrorists). We will ground this panel's discussion in an understanding of what AI can do today and then proceed to its long-term effects and applications. While the success of AI and its astonishing applications are incredibly exciting, its ubiquity gives us reason to pause. There are several dimensions to policy questions including: Should AI be regulated? If so, what would it look like? Who should be involved in specifying the rules and enforcing them? Does regulation build consumer confidence in AI systems and in the companies that produce them? This session will address these fundamental questions including the use of AI in the US and China. This session will close by looking at AI and governance from a global perspective.



SESSION 5: Global Governance and Cyber Conflict

MODERATORS / SPEAKERS

Laura DeNardis, Professor, American University

Angela McKay, Senior Director, Cybersecurity Policy and Strategy, Microsoft

Greg Rattray, Director, Global Cyber Partnerships & Government Strategy, JPMorgan Chase & Co.

Jason Healey, Senior Research Scholar, Columbia SIPA (MODERATOR)

Conflict in cyberspace—primarily but not entirely between states—seems ever less able to be controlled. In the absence of coherent international law on cyberspace, the U.S. government asserts that it is one of few nations respecting norms of proper behavior. Yet John Bolton, the National Security Advisor, recently remarked that “our hands are not tied” and that the US will “take this fight to the enemy, just as we do in other aspects of conflict.” Indeed, some stakeholders would argue that the National Security Advisor’s remarks are an admission of U.S. actions all along—that the United States has not been respecting norms. The United States has sought both a secure cyberspace but not so secure that it cannot conduct significant espionage operations (as revealed by Snowden), cyber-enabled covert action (such as Stuxnet against Iranian nuclear enrichment), and at least the option for strategic and battlefield cyber offensive operations (such as the Nitro Zeus operation planned against Iran). Meanwhile, the underlying technology continues to change in fundamental ways, especially as the Internet of Things drastically increases societal and economic dependence on insecure networks and systems. Cyber attacks which, in the past, might have been ignored or worked around may soon be existential. This panel will address these questions including: What is the mix of individual and collective actions that need to be adopted as the private sector, which creates and uses these technologies, becomes caught in the middle of cyber conflicts and remains an essential partner for global governance? What should be the private sector’s priorities, such as resilience, to form a basis for global cyber agreements?

SESSION 6: Can We Achieve Financial Stability in an Era of Growing Cyber Risk?

MODERATORS / SPEAKERS

Jason Healey, Senior Research Scholar, Columbia SIPA

Patricia Mosser, Senior Research Scholar, Columbia SIPA

Tom Wipf, Vice Chairman of Institutional Securities, Morgan Stanley

Katheryn Rosen, Senior Research Scholar, Columbia SIPA (MODERATOR)

Since the financial crisis a decade ago, government authorities and the financial sector have been working to improve overall resiliency. Parallel to these efforts, governments and industry have been grappling with increasing cyber risk—increased frequency and sophistication of cyberattacks and an ever-growing reliance on digital technology. SIPA’s Cyber Risk to Financial Stability (CRFS) Project examines the gaps and strengthens the intersection of cyber and financial stability community efforts to boost resilience in the financial system. The financial sector is at the forefront of cybersecurity and industry-wide information sharing and collaboration. Over the last few years, institutions have been built to increase resilience within the financial sector—FSARC, the Department of Homeland Security’s National Risk Management Center—while research and regulatory efforts have begun to acknowledge and analyze cyber risks to financial stability—at Columbia SIPA, the Financial Stability Board, and the Treasury Department’s Office of Financial Research. However, there is more work to be done—for example, there remains a lack of globally coordinated policies and regulations, little understanding of the technology mapping of financial system processes, and how new technologies will impact markets and systems, among other areas of focus. This panel will explore several questions including: Efforts to date in areas of financial stability and cyber risk, reflecting on CRFS’ framework. Key areas to prioritize for government, industry, and academia to support efforts. And what challenges may lie ahead including prescriptions for public and private sector to act to further resiliency.

SPEAKER BIOGRAPHIES



Lt. General John D. Bansemer (Ret.)

John Bansemer served in a variety of cyber, space and intelligence positions within the U.S. Air Force before retiring recently as a Lieutenant General. His last role was serving as an Assistant Director for National Intelligence within the Office of the Director of National Intelligence supporting worldwide partner engagement efforts. Previously, he served in various operational and staff positions including on the National Security Council staff and as the director of intelligence at European Command. He continues to research and support studies in cyber and emerging technologies focusing on their national security implications.



John Battelle

Co-Founder and CEO, Recount Media
Senior Research Scholar, Columbia SIPA

John Battelle is co-founder/CEO of Recount Media, a political media platform currently in development, and serves as a Senior Research Scholar and Adjunct Professor at Columbia University/SIPA. Battelle also runs NewCo, an "inside out" conference model and media platform. He also serves as Chair of Sovrn Holdings, a publisher-first programmatic advertising and data platform that proudly serves 100,000+ sites. He has founded or co-founded more than half a dozen companies across media and technology, including Federated Media Publishing, the Web 2 Summit, Standard Media International (SMI), publisher of *The Industry Standard* and *TheStandard.com*, and *Wired* magazine. He is also a director at LiveRamp, a NYSE-listed data services business. In 2005 he authored *The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture* (Penguin/Portfolio), an international bestseller published in more than 25 languages.



Josh Benaloh

Senior Cryptographer
Microsoft Research

Josh Benaloh is Senior Cryptographer at Microsoft Research and an Affiliate Faculty Member of Computer Science and Engineering at the University of Washington. He earned his S.B. degree from the Massachusetts Institute of Technology and M.S., M.Phil., and Ph.D. degrees from Yale University where his 1987 doctoral dissertation "Verifiable Secret-Ballot Elections" introduced the use of homomorphic encryption as a means to allow individual voters to confirm that their votes have been correctly counted. Dr. Benaloh served seventeen years on the Board of Directors of the International Association for Cryptologic Research and currently serves on the Coordinating Committee of the Election Verification Network. He has been granted over fifty U.S. patents and has written and spoken extensively on cryptographic primitives and protocols, election technologies, and cryptographic policy. Dr. Benaloh is an author of the influential "Keys Under Doormats" expert report which details the damage that would be created by mandating exceptional government access to encrypted data. He is also an author of the U.S. Vote Foundation report on the viability of end-to-end verifiable Internet voting systems and recently completed service on the National Academies of Science, Engineering, and Medicine Committee on the Future of Voting whose final report "Securing the Vote—Protecting American Democracy" has been cited in numerous articles and deliberations.



Laura DeNardis

Professor, American University
Senior Research Scholar, Columbia SIPA

Dr. Laura DeNardis is globally recognized as one of the most read scholars in Internet governance. She is a tenured Professor in the School of Communication at American University in Washington, DC, where she serves as Faculty Director of the Internet Governance Lab. In 2018, she was the recipient of American University's highest faculty award, Scholar-Teacher of the Year. Her six books include *The Global War for Internet Governance* (Yale University Press 2014); *Opening Standards: The Global Politics of Interoperability* (MIT Press 2011); *Protocol Politics: The Globalization of Internet Governance* (MIT Press 2009); among others. Her new book, *The Internet in Everything: Freedom and Security in a World with No Off Switch*, is forthcoming from Yale University Press. She is an affiliated fellow of the Yale Law School Information Society Project and served as its Executive Director from 2008-2011. Her expertise and scholarship have been featured in *Science Magazine*, *The Economist*, National Public Radio (NPR), *New York Times*, *Time* magazine, *Christian Science Monitor*, *Slate* magazine, Reuters, *Forbes*, *The Atlantic*, and the *Wall Street Journal*, among others. She holds an Engineering Science degree from Dartmouth College, an MEng from Cornell University, a PhD in Science and Technology Studies from Virginia Tech, and was awarded a postdoctoral fellowship from Yale Law School.



Renee DiResta

Mozilla Fellow
Media, Misinformation, and Trust

Renee DiResta is a Mozilla Fellow in Media, Misinformation, and Trust and a Staff Associate at Columbia University Data Science Institute. Renee investigates the spread of disinformation and malign narratives across social networks, and has advised Congress and the State Department on the topic. She was the lead author on one of the Senate Intelligence Committee-commissioned reports on

Russian interference in the 2016 election. Renee is a 2019 Truman National Security Fellow, a 2017 Presidential Leadership Scholar, a Harvard Berkman-Klein affiliate, a Council on Foreign Relations term member, and a Founding Adviser to the Center for Humane Technology. She is an IDEAS contributor for Wired.



Victoria Espinel

President and CEO
BSA | The Software Alliance

Victoria Espinel is a respected authority on the intersection of technology innovation, global markets and public policy. She leads strategic efforts that help shape the technology landscape in 60 countries through work in BSA's 13 global offices. Espinel also serves as the President of Software.org: the BSA Foundation. Software.org is an independent and nonpartisan international

research organization created to help policymakers and the broader public better understand the impact that software has on our lives, our economy, and our society. Espinel served for a decade in the White House, for both Republican and Democratic Administrations as President Obama's advisor on intellectual property and, before that, as the first ever chief US trade negotiator for intellectual property and innovation at USTR. She was also a professor of international trade and intellectual property at the George Mason School of Law.



Jameel Jaffer

Director of the Knight First Amendment Institute
Columbia University

Jameel Jaffer directs the Knight First Amendment Institute at Columbia University, whose mandate is to defend the freedoms of speech and the press in the digital age through strategic litigation, research, and public education. Since its establishment three years ago, the Institute has initiated cutting-edge litigation relating to free speech on social media, surveillance, and government

secrecy, and it has launched several major research projects—most recently, a project focused on “the technology giants, monopoly power, and public discourse,” which will culminate in a symposium at Columbia University in the fall of 2019. Jaffer previously served as deputy legal director at the ACLU, where he oversaw the organization's work on free speech, privacy, technology, national security, and international human rights. Jaffer's recent writing has appeared in *The New York Times*, the *Washington Post*, the *Los Angeles Times*, the *Guardian*, and the *Yale Law Journal Forum*. He is an executive editor of Just Security, a national security blog, and his most recent book, *The Drone Memos*, was published by The New Press in the fall of 2016.



Ronaldo Lemos

Director, Institute for Technology and Society of Rio de Janeiro
Visiting Professor, Columbia SIPA

Ronaldo Lemos is an internationally respected Brazilian academic, lawyer and commentator on intellectual property, technology, and culture. Lemos is a co-founder and director of the Institute for Technology & Society of Rio de Janeiro (itsrio.org), and professor at the Rio de Janeiro State University's law school. He is a board member of various organizations, including the Mozilla Foundation,

and Access Now. Lemos was one of the creators of Brazil's Internet Law (Marco Civil da internet), enacted in April 2014, creating a comprehensive set of rights for the internet in Brazil, including freedom of speech, privacy and net neutrality. Because of its impact in favor of an open and free internet, the Marco Civil has been praised by Tim Berners-Lee “a very good example of how governments can play a positive role in advancing web rights and keeping the web open”. In July 2013, Lemos joined the MIT Media Lab as a visiting scholar. Lemos has received the Prix Ars Electronica Golden Nica in the category of digital communities. He writes weekly to *Folha de Sao Paulo*, the biggest national newspaper in Brazil, and has contributed to a number of other publications, including *Foreign Affairs*, *Harper's Bazaar*, and *Bravo!* He also hosts a weekly TV show at Canal Futura, and is a commentator on technology for Globonews.



Alex Macgillivray

Board Member, Data & Society, and former Deputy CTO of the U.S.

Alexander Macgillivray is curious about many things including ethics, law, policy, government, decision making, the Internet, algorithms, social justice, access to information, coding, and the intersection of all of those. He was United States Deputy Chief Technology Officer for the last two plus years of the Obama Administration. He was Twitter's General Counsel, and head of Corporate Development, Public Policy, Communications, and Trust & Safety. Before that he was Deputy General Counsel at Google and created the Product Counsel team. He has served on the board of the Campaign for the Female Education (CAMFED) USA, was one of the early Berkman Klein Center folks, was certified as a First Grade Teacher by the State of New Jersey, and studied Reasoning & Decision Making as an undergraduate. These days he is doing a bunch of coding, writing, and short burst projects with organizations thinking about what they should be doing next. He is also proud to be a board member at Data & Society and advisor to the Mozilla Tech Policy Fellows.



Angela McKay

Senior Director, Cybersecurity Policy & Strategy
Microsoft

Angela McKay is Senior Director of Cybersecurity Policy and Strategy within Customer Security and Trust at Microsoft. She leads Microsoft's public policy work on cybersecurity and cloud security, and helps drive the company's efforts to ensure a peaceful and stable cyberspace. Her team includes professionals working on these topics across Africa, Asia, Europe, Latin America and the

US. McKay serves as Secretary for the Coalition to Reduce Cyber Risk, on the Board of Councilors for the East West Institute, and as Microsoft's Point of Contact for the President's National Security Telecommunications Advisory Committee. Before joining Microsoft in 2008, she worked at Booz Allen Hamilton and BellSouth Telecommunications. McKay holds a bachelor's in industrial and systems engineering from the Georgia Tech.



Patricia Mosser

Senior Research Scholar
Columbia SIPA

Patricia C. Mosser is Director of the MPA Program in Economic Policy Management at Columbia University's School of International and Public Affairs and leads the school's Initiative on Central Banking and Financial Policy. Previously, Mosser was head of the Research and Analysis Center at the Office of Financial Research, U.S. Treasury Department. Mosser spent over 20 years at the Federal Reserve Bank of New York where she was a senior manager at the Fed's open market desk overseeing market analysis, monetary policy implementation including many crisis-related facilities, foreign exchange operations, and analysis of financial stability and reform. She previously served as an economist and manager in the New York Fed Research Department and as an assistant professor in the Economics Department at Columbia. Mosser has written on financial stability and monetary policy topics including financial reform, crisis policy tools, and the monetary transmission mechanism. She serves as a consultant to the Bank of England and was previously a member of the Deputies Committee of the Financial Stability Oversight Council (FSOC), the Board of the American Economic Association's Committee on the Status of Women in the Economics Profession (CSWEP) and numerous international central banking and financial policy committees. She received a BA from Wellesley College, an MSc with distinction from the LSE, and a PhD in economics from MIT.



Eli Noam

Professor, Columbia Business School
Director of the Global Institute for Tele-Information,
Columbia University

Eli Noam is Professor of Economics and Finance at the Columbia Business School since 1976, and its Garrett Professor of Public Policy and Business Responsibility. He is the Director of the Columbia Institute for Tele-Information, a research center focusing on management and policy issues in communications, internet, and media. Noam has published 30 books and over 300 articles. Recent books and projects include: *Who Owns the World's Media* (Oxford); two textbooks: *Managing Media and Digital Organizations & Media and Digital Management* (Palgrave, forthcoming); and the project: A National Initiative for Next Generation Video. Noam advisory board memberships have included the Federal government's telecommunications network, the Nexus Mundi Foundation (Chairman), the Electronic Privacy Information Center, Oxford Internet Institute, Jones International University, and several committees of the National Research Council. He received the degrees of BA, MA, PhD (Economics) and JD from Harvard University, and honorary doctorates from the University of Munich (2006) and the University of Marseilles Aix-la-Provence (2008).

**Greg Rattray**

Director of Global Cyber Partnerships & Government Strategy
JPMorgan Chase & Co.

Dr. Greg Rattray is Managing Director of Global Cyber Partnerships & Government Strategy at JPMorgan Chase, responsible for JPMorgan Chase's cybersecurity policy development, advocacy and relationships with industry partners, clients, government agencies and global organizations. Dr. Rattray led the establishment of the Financial Systemic Analysis & Resilience Center (FSARC), a private-public strategic initiative to understand and reduce risks to the financial system and enhance the level of operational collaboration. Greg joined JPMC in 2014 as the Global Chief Information Security Officer (CISO). Prior to joining JPMorgan Chase, Dr. Rattray was founding partner and CEO of Delta Risk LLC, a cybersecurity risk management consulting firm that focused on addressing advanced cyber threats. He retired from the U.S. Air Force as a Colonel after twenty three years of service including as Director for Cybersecurity in the White House and commanding the Operations Group of the Air Force Information Warfare Center responsible for cyber operations and defending cyber threats.

**Daniela Rus**

Director of the Computer Science and AI LAB
Massachusetts Institute of Technology

Daniela Rus is the Andrew (1956) and Erna Viterbi Professor of Electrical Engineering and Computer Science and Director of the Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT. Rus's research interests are in robotics and artificial intelligence. The key focus of her research is to develop the science and engineering of autonomy. Rus is a Class of 2002 MacArthur Fellow, a fellow of ACM, AAAI and IEEE, and a member of the National Academy of Engineering and of the American Academy of Arts and Sciences. She is the recipient of the Engelberger Award for robotics. She earned her PhD in Computer Science from Cornell University.

**Samm Sacks**

Cybersecurity Policy and China Digital Economy Fellow
New America

Samm Sacks is a Cybersecurity Policy and China Digital Economy Fellow at New America. Her research focuses on emerging information and communication technology (ICT) policies globally, particularly China. She leads the Charting Chinese Data Governance initiative, which publishes translation and analysis of developments related to data protection, cross border data transfer, and China's data policies in global comparative context. She has worked on China's technology policies for over a decade. Previously, she was Senior Fellow in the Technology Policy Program at Center for Strategic and International Studies (CSIS). At CSIS, she published widely cited reports and commentaries on issues ranging from China's cybersecurity standards to comparison between the EU's GDPR and China's data protection system. Before joining CSIS, Sacks launched the industrial cyber business for Siemens in Asia, focusing on energy sector cybersecurity markets in East Asia. Previously, she led China technology sector analysis at the political risk consultancy Eurasia Group. Prior to this, she worked at Booz Allen Hamilton and Defense Group Inc., where she advised senior U.S. government officials on China's science and technology (S&T) development. She reads and speaks Mandarin and is a frequent contributor to print and TV media, including, the BBC, Bloomberg, CNN, the Financial Times, New York Times, Politico, Reuters, Wall Street Journal, and The Washington Post. Her articles have appeared in the Atlantic and Foreign Affairs, among other outlets. She has testified before Congress three times in the last year on the U.S.-China technology relationship. A former Fulbright scholar in Beijing, Sacks holds an MA from Yale University in international relations and a BA from Brown University in Chinese literature.

**David E. Sanger**

National Security Correspondent
The New York Times

David E. Sanger is a national security correspondent and a senior writer. In a 36-year reporting career for *The New York Times*, he has been on three teams that have won Pulitzer Prizes, most recently in 2017 for international reporting. His newest book, *The Perfect Weapon: War, Sabotage and Fear in the Cyber Age*, examines the emergence of cyberconflict as the primary way large and small states are competing and undercutting each other, changing the nature of global power. He is also the author of two Times best sellers on foreign policy and national security: *The Inheritance: The World Obama Confronts and the Challenges to American Power*, published in 2009, and *Confront and Conceal: Obama's Secret Wars and Surprising Use of American Power*, published in 2012. For *The Times*, Mr. Sanger has served as Tokyo bureau chief, Washington economic correspondent, White House correspondent during the Clinton and Bush administrations, and chief Washington correspondent. A 1982 graduate of Harvard College, Mr. Sanger was the first senior fellow in The Press and National Security at the Belfer Center for Science and International Affairs at Harvard. With Graham T. Allison Jr., he co-teaches Central Challenges in American National Security, Strategy and the Press at the Kennedy School of Government.



JoAnn C. Stonier

Chief Data Officer
MasterCard

JoAnn Stonier is the Chief Data Officer for Mastercard, where she is responsible for the enterprise data strategy and management, including identifying and mitigating data risks across the company, as well as influencing data-driven products, overseeing data policy and governance. She advises executive management on a broad range of complex data policy and regulatory issues.

Prior to her current position, Ms. Stonier established the first Privacy Office for Mastercard in 2008, and developed the organization's Information Governance program beginning in 2013. Prior to joining Mastercard, Ms. Stonier was the Chief Privacy Officer for American Express Company. JoAnn is a recognized data and privacy expert and is sought after for her innovative and practical approach to solving problems in the digital age. In 2018 she assisted in the creation and launch of Truata, an Irish data trust enterprise, formed to ensure anonymization compliance with the EU-General Data Protection Regulation. She currently serves on their board. In addition to the Truata board of directors, she currently advises a broad range of industry and policy groups regarding data innovation and privacy including: the United Nations Global Privacy Advisory Group; the World Economic Forum's Data Driven Development Steering Committee; and the Board of Directors of the Information Accountability Foundation.



Kara Swisher

Technology Business Journalist and Co-Founder
Recode

Kara Swisher is the co-founder and editor-at-large of Recode, producer and host of the Recode Decode and Pivot podcasts, and co-executive producer of the Code Conference series. She also has a special series on MSNBC called Revolution on the impact of technology on work, society, and more, and is a contributing opinion writer for *The New York Times*. Prior to Recode, Swisher co-produced

and co-hosted the *Wall Street Journal's* "D: All Things Digital" conference series (now called the Code conference). She was also the co-executive editors of a tech and media website, AllThingsD.com, founded in 2007. Swisher worked in the *Wall Street Journal's* San Francisco bureau. For many years, she wrote the column "BoomTown," which appeared on the front page of the Marketplace section and online at WSJ.com. Previously, Swisher covered breaking news about the web's major players and Internet policy issues and also wrote feature articles on technology for the paper. She received her undergraduate degree from Georgetown University's School of Foreign Service and her graduate degree at Columbia University's School of Journalism. Swisher is also the author of *aol.com: How Steve Case Beat Bill Gates, Nailed the Netheads and Made Millions in the War for the Web*, published by Times Business Books in July 1998. The sequel, *There Must Be a Pony in Here Somewhere: The AOL Time Warner Debacle and the Quest for a Digital Future*, was published in the fall of 2003 by Crown Business Books.



Eric Talley

Professor
Columbia Law School

Eric Talley is the Isidor and Seville Sulzbacher Professor of Law and Co-Director, Millstein Center for Global Markets and Corporate Ownership. He is an expert in the intersection of corporate law, governance, and finance, and he teaches/researches in areas that include corporate law and finance, mergers and acquisitions, quantitative methods, machine learning, contract and commercial

law, game theory, and economic analysis of law. He is current Chair of the board of directors of the Society for Empirical Legal Studies (SELS) and was the SELS co-president in 2013–2014. He also serves on the board of directors of the American Law and Economics Association (ALEA). Talley is a frequent commentator in the national media, and he speaks regularly to corporate boards and regulators on issues pertaining to fiduciary duties, governance, and finance.



Mac Warner

Secretary of State
West Virginia

WV Secretary of State Mac Warner is a graduate of the United States Military Academy at West Point and the West Virginia University School of Law. He also holds two Masters Degrees in International Law from the University of Virginia. During his 23-year career in the United States Army, Secretary Warner served on four continents, deploying to military hot spots around the world while also

serving on the staff at the U.S. Army War College. Prior to being elected West Virginia's 30th Secretary of State, Lt. Colonel Warner served five years with the U.S. State Department in Afghanistan. Since taking his oath of office on January 16, 2017, Secretary Warner has been recognized throughout the country for his innovation in cybersecurity and election preparation. Under his leadership, West Virginia became the first state in the nation to offer a mobile voting application designed specifically for overseas military personnel deployed to remote areas of the world during election time. Since becoming Secretary of State, Secretary Warner has led an effort for West Virginia to secure federal funding to assist counties with more than \$12 million in new voting equipment, state of the art election technology and physical security. In addition to his duties as the state's chief elections officer, Secretary Warner also serves as the state's chief business official. Today there are more than 116,000 entities licensed to do business in the Mountain State.



Fred Wilson

Partner
Union Square Ventures

Fred Wilson has been a venture capitalist since 1987. He is a partner at Union Square Ventures and also founded Flatiron Partners. Fred has a Bachelor degree in Mechanical Engineering from MIT and an MBA from The Wharton School of Business at the University of Pennsylvania. Fred is married with three children and lives in New York City. Fred is Chairman of the NYC Department of Education's CS4All Capital Campaign and is co-Chairman of Tech:NYC.



Tom Wipf

Vice Chairman of Institutional Securities and
Chair of Treasury Market Practices Group
Morgan Stanley

Tom Wipf is Vice Chairman of Institutional Securities. In his role, Tom is responsible for assisting the President of Morgan Stanley with regulatory and other matters. Additionally, Tom leads the firm's Global Business Continuity Management Organization, which is responsible for strategic planning and risk management for potential cyber and physical disruptions. Tom is responsible for the firm's transition efforts to alternative reference rates to replace LIBOR. He is a member of the firm's Securities Operating Committee, Risk Management Committee and Asset/ Liability Management Committee. Prior to being named Vice Chairman, Tom was the Global Head of the Bank Resource Management Division where he was responsible for the firm's secured funding, securities lending, global hedging and collateral management activities. Beginning his career in the industry in 1977, Tom joined Morgan Stanley in 1986 and has been engaged in the Firm's funding, collateral and hedging activities throughout his career at the firm. Based in New York, Tom has also completed multi-year assignments in Morgan Stanley's London and Tokyo offices. In April, 2019, Tom was named Chair of the Alternative Reference Rates Committee (ARRC) by the Federal Reserve Board. The ARRC is a group of private-market participants convened to help ensure a successful transition from USD LIBOR to a more robust reference rate. Tom serves as Chair of the Treasury Market Practices Group. Sponsored by the New York Federal Reserve, this industry group is committed to supporting the integrity and efficiency of the U.S. Treasury and Agency Mortgage Securities Markets. Tom was appointed Chair of the US Commodity Futures trading Commission's Market Risk Advisory Committee (MRAC) Interest Rate Benchmark Reform Subcommittee in October, 2018. Tom serves on the board of directors of International Swaps and Derivatives Association, Inc. (ISDA). Tom was appointed to the Alternative Reference Rate Committee, sponsored by the Board of Governors of the Federal Reserve in 2014. Tom previously served on the Financial Research Advisory Committee to the US Treasury Office of Financial Research from 2012 to 2017.



Tim Wu

Professor of Law, Science, and Technology
Columbia Law School

Tim Wu is a professor at Columbia Law School, and a contributing opinion writer for the New York Times. He is best known for his work on Net Neutrality theory. He is author of the books *The Master Switch*, *The Attention Merchants* and *The Curse of Bigness* along with *Network Neutrality*, *Broadband Discrimination*, and other works. In 2013 he was named one of America's 100 Most Influential Lawyers, and in 2017 he was named to the American Academy of Arts and Sciences.

MODERATOR BIOGRAPHIES



Emily Bell

Director, Tow Center for Digital Journalism
Columbia Journalism School

Emily Bell is founding director of the Tow Center for Digital Journalism at Columbia's Graduate School of Journalism and a leading thinker, commentator and strategist on digital journalism. Established in 2010, the Tow Center has rapidly built an international reputation for research into the intersection of technology and journalism. The majority of Bell's professional career was spent at Guardian News and Media in London working as an award winning writer and editor both in print and online. As editor-in-chief across Guardian websites and director of digital content for Guardian News and Media, Bell led the web team in pioneering live blogging, podcasting, multimedia formats, data and social media, making the Guardian an internationally awarded beacon of digital transformation. Emily continues to write a regular column for the Guardian and Columbia Journalism Review, and is a contributor to *The New York Times*, CNN, the BBC, and numerous other outlets. She lives in New York City with her husband and three sons.



Anupam Chander

Professor, Georgetown University Law Center
Senior Research Scholar, Columbia SIPA

Anupam Chander is a Professor of Law at Georgetown University Law Center. Much of his scholarship focuses on the global regulation of new technologies. His book, *The Electronic Silk Road* (Yale University Press) seeks to "dismantle the logistical and regulatory barriers . . . to trade while at the same time ensuring that public policy objectives cannot easily be evaded through a simple jurisdictional sleight of hand or keystroke." A graduate of Harvard College and Yale Law School, he clerked for Chief Judge Jon O. Newman of the Second Circuit Court of Appeals and Judge William A. Norris of the Ninth Circuit Court of Appeals. He practiced law in New York and Hong Kong with Cleary, Gottlieb, Steen & Hamilton. He has been a visiting law professor at Yale, the University of Chicago, Stanford, and Cornell. Prior to joining the Georgetown faculty, he was the Director of the California International Law Center and Martin Luther King, Jr. Professor of Law at UC Davis. He is an elected member of the American Law Institute, and has previously served on the Executive Council of the American Society of International Law, where he cofounded the International Law and Technology Interest Group. He serves as a judge of the Penn-Stanford Junior International Faculty Forum. The recipient of Google Research Awards and an Andrew Mellon grant on the topic of surveillance, he has served on ICTSD/World Economic Forum expert groups on the digital economy. An affiliate of Yale's Information Society Project, he serves as a faculty advisor to Georgetown's Institute for Technology Law and Policy.



Avril Haines

Deputy Director, Columbia World Projects
Lecturer in Law, Columbia Law School

Avril Haines is a Deputy Director of Columbia World Projects, a Lecturer in Law at Columbia Law School, and a Senior Fellow at the Johns Hopkins University Applied Physics Laboratory. She was appointed by President Obama to serve as a Member of the National Commission on Military, National, and Public Service, co-chairs the U.S. Holocaust Memorial Museum's Simon Skjodt Center for the Prevention of Genocide's Advisory Group, and serves on a number of boards and advisory groups, including the Nuclear Threat Initiative's Bio Advisory Group, the Board of Trustees for the Vodafone Foundation, and the Refugees International Policy Advisory Council. Prior to joining Columbia University, Avril served as Assistant to the President and Principal Deputy National Security Advisor to President Obama. Before that, she served as the Deputy Director of the Central Intelligence Agency. Avril also held a number of senior legal positions in the government, including Legal Adviser to the National Security Council.



Jason Healey

Senior Research Scholar
Columbia SIPA

Jason Healey is a Senior Research Scholar at Columbia University's School for International and Public Affairs specializing in cyber conflict, competition and cooperation. Prior to this, he was the founding director of the Cyber Statecraft Initiative of the Atlantic Council where he remains a Senior Fellow. His was the editor of the first history of conflict in cyberspace, *A Fierce Domain: Cyber Conflict, 1986 to 2012* and co-authored the book *Cyber Security Policy Guidebook* by Wiley. His ideas on cyber topics have been widely published in over a hundred articles and essays published by the World Economic Forum, Aspen Strategy Group, Atlantic Council, and National Research Council. *A Fierce Domain* was reviewed favorably in the Economist and by numerous government leaders, including both the President of Estonia and former head of the CIA and NSA. Jason is also president of the Cyber Conflict Studies Association and previously was adjunct faculty at National Cryptologic School, Georgetown University, and Johns Hopkins School of Advanced International Studies. He is an affiliate at Stanford University's Center for International Security and Arms Control. Jason was one of the pioneers of cyber threat intelligence and has unique experience working issues of cyber conflict and security spanning fifteen years across the public and private sectors.



Merit E. Janow

Dean, School of International and Public Affairs
Columbia SIPA

Merit E. Janow is an internationally recognized expert in international trade and investment. She has extensive experience in academia, government and business, with life-long experience in the Asia-Pacific. At Columbia University, Professor Janow became Dean of Columbia University's School of International and Public Affairs (SIPA) in July 2013 after serving as a Professor at SIPA and Columbia Law School. In 2014, Janow created the Tech and Policy Initiative at SIPA to initiate new courses on data science and public policy; new efforts around digital entrepreneurship; the Global Digital Futures Forum; and research initiatives around cybersecurity and the digital economy. She has written three books and numerous articles and frequently speaks before business, policy and academic audiences around the world. She served for four years as one of the seven Members of the World Trade Organization's (WTO) Appellate Body. From 1997 to 2000, she served as the Executive Director of the first international antitrust advisory committee to the Attorney General and the Assistant Attorney General for Antitrust, US Department of Justice. Prior to joining Columbia's faculty, Professor Janow was Deputy Assistant U.S. Trade Representative for Japan and China (1989-93). She was responsible for developing, coordinating and implementing U.S. trade policies and negotiating strategies towards Japan and China. Professor Janow negotiated more than a dozen trade agreements with Japan and China. Early in her career, Professor Janow was a corporate lawyer specializing in cross-border mergers and acquisitions with Skadden, Arps, Slate, Meagher & Flom in New York. She currently serves on the boards of several tech and finance companies and non-profit organizations.



Katheryn Rosen

Senior Research Scholar
Columbia SIPA

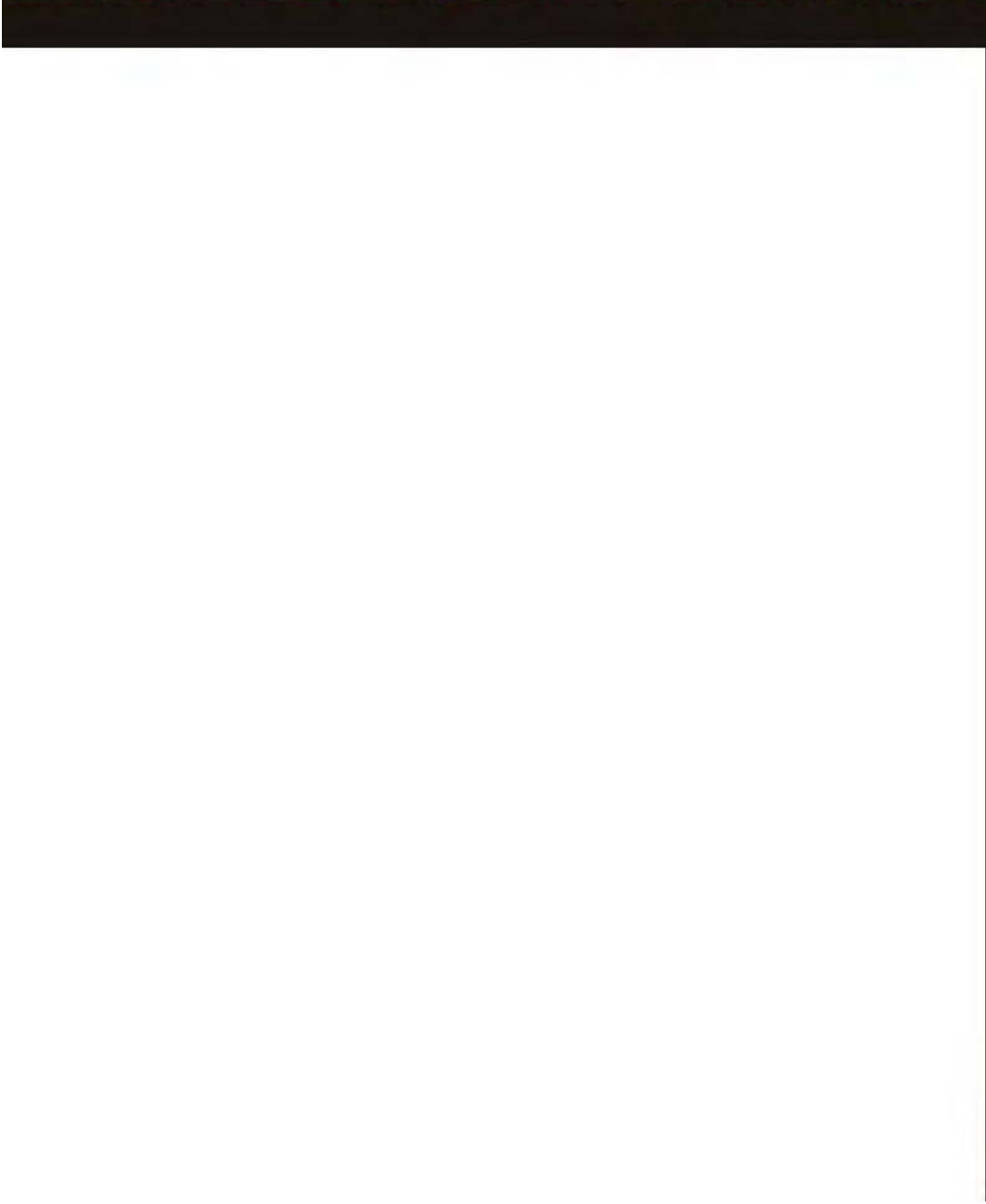
Katheryn Rosen is an Adjunct Professor at Columbia University's School of International Public Affairs focusing on cybersecurity and a non-Resident Senior Fellow at the Atlantic Council—Brent Scowcroft Center on International Security's Cyber Statecraft Initiative. Over a 25 year career, Katheryn has been active in both the public and private sectors. She served at the U.S. Department of Treasury as Deputy Assistant Secretary for Financial Institutions Policy and Senior Advisor to the Assistant Secretary of Financial Institutions. On Capitol Hill, she served as Senior Policy Advisor to House Financial Services Chairman Barney Frank, working primarily on the Dodd-Frank Act and housing finance reform. Prior to her public service, Katheryn, a Managing Director, spent 14 years at JPMorgan's Investment Bank. She led the Government Institutions Group where she was responsible for delivering the Firm's full range of services and products to Government-Sponsored Enterprises (GSEs), US-based multilateral-lending institutions, and the US government. Most recently at BlackRock, Katheryn was a senior leader of the Financial Markets Advisory team where she focused on the impact of regulation, policy, and official sector actions on clients' businesses across banks, GSEs, central counterparties, and official institutions.



Jeanette Wing

Avanessians Director, Data Science Institute and
Professor of Computer Science
Columbia University

Jeannette M. Wing is Avanessians Director of the Data Science Institute and Professor of Computer Science at Columbia University. From 2013 to 2017, she was a Corporate Vice President of Microsoft Research. She is Adjunct Professor of Computer Science at Carnegie Mellon where she twice served as the Head of the Computer Science Department and had been on the faculty since 1985. From 2007-2010 she was the Assistant Director of the Computer and Information Science and Engineering Directorate at the National Science Foundation. She received her SB, SM, and PhD degrees in Computer Science, all from the Massachusetts Institute of Technology. Professor Wing's general research interests are in the areas of trustworthy computing, specification and verification, concurrent and distributed systems, programming languages, and software engineering. Her current interests are in the foundations of security and privacy, with a new focus on trustworthy AI. She was or is on the editorial board of twelve journals, including the Journal of the ACM and Communications of the ACM. She is currently a member of: the National Library of Medicine Blue Ribbon Panel; the Science, Engineering, and Technology Advisory Committee for the American Academy for Arts and Sciences; the Board of Trustees for the Institute of Pure and Applied Mathematics; the Advisory Board for the Association for Women in Mathematics; and the Alibaba DAMO Technical Advisory Board.



LEARN MORE AT:

sipadigitalfutures.org
sipa.columbia.edu/ideas-lab/techpolicy