



The 49th Research Conference on Communications, Information and Internet Policy September 22-24, 2021

Held Virtually
All times shown are Eastern Time

Hosted by American University Washington College of Law
Washington, DC

Wednesday, September 22, 2021

10:15 am	Welcome to a Virtual Conference, Nicol Turner Lee, <i>Brookings Institution, TPRC Chair</i>
10:30 am	Paper Sessions outlined in grid
11:30 am	Coffee Break and Networking
12:00 pm	Paper Sessions outlined in grid
1:00 pm	Coffee Break and Networking
1:30 pm	Plenary Session, Doreen Bogdan-Martin , <i>ITU</i> and Chike Aguh , <i>U.S. Department of Labor</i>
2:30 pm	Panel Discussion: Radio Frequency Spectrum Efficiency – New Developments and Trends Moderator: Dale Hatfield , <i>University of Colorado Boulder</i> Poster Session
3:30 pm	Town Hall Discussion - The information Society: Restoring the Future
4:30 pm	Closing followed by networking

Thursday, September 23, 2021

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10:30 am	Paper Sessions outlined in grid
11:30 am	Coffee Break and Networking
12:00 pm	Paper Sessions outlined in grid
1:00 pm	Coffee Break and Networking
1:30 pm	Plenary Session: Student Paper Award Presentations with introductory comments from Adrienne Furniss , <i>Benton Institute for Broadband & Society</i> <ul style="list-style-type: none">• Detecting effects of misinformation through emotion and trace behavior, Kristen Sussman, <i>University of Texas at Austin</i>• Title "Zero": Ending the infinite loop of classifications for broadband via a technology agnostic definition, Matthew Chung, <i>University of California Berkeley School of Law</i>, Harrison Geron, <i>University of California Berkeley School of Law</i>, David Fang, <i>University of California Berkeley School of Law</i> and Walter Mostowy, <i>University of California Berkeley School of Law</i>• Wanted: Spectrum Bounty Hunters, Wilson Scarbeary, <i>University of Colorado Law School</i>
2:30 pm	Panel Discussion: Here Comes the Quantum ARPANET , Moderator: Jane Bambauer , <i>University of Arizona Law</i>

3:30 pm Poster Session
Panel Discussion: **Global cyber governance issues in a multi-polar world**, Moderator, **Milton Mueller**, *Georgia Institute of Technology*
4:30 pm Closing followed by networking

Friday, September 24, 2021

10:15 am Welcome to a Virtual Conference, Nicol Turner Lee, *Brookings Institution*, *TPRC Chair*
10:30 am Paper Sessions outlined in grid
11:30 am Coffee Break and Networking
12:00 pm Paper Sessions outlined in grid
1:00 pm Coffee Break and Networking
1:30 pm Fireside Chat: Acting Chairwoman **Jessica Rosenworcel**, FCC and **Nicol Turner Lee**, Brookings Institution
2:30 pm Panel Discussion: **The Technical and Policy Considerations of using Machine Learning tools in Content Moderation**, Moderator, Dhanaraj Thakur, *Center for Democracy & Technology*
Poster Session
3:30 pm Closing Plenary Panel: **What COVID taught us about the future of technology and TPRC?**
4:30 pm Closing followed by networking

For complete details and descriptions, please see our website, www.tprcweb.com.

Conference Information

The 49th Annual Telecommunications Policy Research Conference will be held virtually this year due to travel restrictions caused by the global pandemic. Each registrant will be sent a link to our scheduling tool, SCHED, which will allow you access to each of the sessions. Sessions will be recorded and archived for future viewing. While we look forward to exchanging ideas online, we hope to see you in person in September 2022 to celebrate our 50th anniversary! Please contact Laura Verinder, laura.verinder@gmail.com with any questions.

Conference Registration

Online registration is available at <https://www.tprcweb.com/>.

Conference Fees

	Before Aug. 31	After Sept. 1
Student	\$ 35	\$ 55
Authors/Co-Authors	\$ 75	\$100
Academic	\$ 95	\$120
Government	\$110	\$135
Not for profit	\$ 95	\$120
Industry	\$145	\$250

Registration fees cover all conference sessions and access to

recorded sessions.



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TPRC2021 September 22-24, 2021
September 17, 2021 – Program Subject to Change

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For additional information on sponsorship opportunities, contact Syd Verinder at syd.verinder@gmail.com.

TPRC2021 September 22-24, 2021
September 17, 2021 – Program Subject to Change

Paper Sessions Wednesday, September 22

	1. Broadband-Mobile	2. Law & Economics-EU Regulation	3. Tech-Equity	4. Privacy-Empirical Assessments	5. Security-Data Breach
	Moderator: Peter Stenberg, George Mason University	Moderator: Jennifer Huddleston, American Action Forum	Moderator: Silvia Elaluf-Calderwood, Florida International University	Moderator: Pam Dixon, World Privacy Forum	Moderator: Marjory Blumenthal, Carnegie Endowment for International Peace
10:30 am ET	<p>Next-G Wireless: Learning from 5G Techno-economics to Inform Next Generation Wireless Technologies Edward Oughton, <i>George Mason University</i> and William Lehr, <i>Massachusetts Institute of Technology</i></p> <p>Impact of mobile Internet use cases on socio-economic wellbeing of individuals in Bangladesh and Ghana Leon Gwaka, <i>University of Pennsylvania</i>, Muge Haseki, <i>University of Pennsylvania</i>, Himani Mehta, <i>University of Pennsylvania</i> and Christopher Yoo, <i>University of Pennsylvania</i></p> <p>Cardinality bundling under oligopoly – a simulation model Petrus H. Potgieter, <i>University of South Africa</i> and Bronwyn Howell, <i>Victoria University of Wellington</i></p>	<p>Platforms Within the AVMSD Regulatory Architecture: a VSPs Governance Model Ivana Kostovska, <i>Vrije Universiteit Brussel</i> and Sally Broughton Micova, <i>University of East Anglia</i></p> <p>The Effect of Hatespeech Regulation in German Twitter Raphaela Andres, <i>ZEW - Leibniz Centre for European Economic Research</i> and Olga Slivko, <i>Rotterdam School of Management of Erasmus University</i></p> <p>EU competence creep in the field of national security: Implications for mass surveillance of online communication Sarah Eskens, <i>Vrije Univ j ersiteit Amsterdam</i></p>	<p>Digital Inclusion Alchemy by Internet Backpack: ICT Policy Implications of Edge Computing & Cyber-Physical Infrastructure for Education Lee McKnight, <i>Syracuse University</i>, Danielle Taana Smith, <i>Syracuse University</i>, Wednaud Ronelus, <i>New York City Schools & Alchemists Club</i>, Prasanta Ghosh, <i>Syracuse University</i> and Ryan Ondocin, <i>Syracuse University</i></p> <p>Sharing Unfairly: Racial Bias on Airbnb and the Role of Comments Floor Fiers, <i>Northwestern University</i> and Nathan Walter, <i>Northwestern University</i></p> <p>Creating a Digital Bridge: Lessons and policy implications from a technology access and distribution program for low-income job seekers Stacey Wedlake, <i>University of Washington</i>, Kathleen Carson, <i>Seattle Jobs Initiative</i> and Yvette Iribe Ramirez, <i>University of Washington</i></p>	<p>Antitrust & Privacy: It's Complicated James Cooper, <i>George Mason, Antonin Scalia Law School</i> and John Yun, <i>George Mason, Antonin Scalia Law School</i></p> <p>Value of Personal Health/Medical Data and Potential of the Personal Health/Medical Data Market Atsushi Ozu, <i>Ministry of Internal Affairs and Communications Japan Center for Economic Research</i> and Teppei Koguchi, <i>Shizuoka University</i></p> <p>Worse Than Human? Derek Bambauer, <i>University of Arizona</i> and Michael Risch, <i>Villanova University</i></p>	<p>Enterprise Risk Management: Understanding the Role of Cyber Risk Sasha Romanosky, <i>RAND Corporation</i> and Elizabeth Petrun-Sayers, <i>RAND Corporation</i></p> <p>Do Data Breaches Damage Reputation? Evidence from 45 Companies Between 2002 and 2018 Christos Makridis, <i>Arizona State University</i></p> <p>What Works? Measuring the Efficacy of Cyber Policy Interventions with Quasi-Experiments Karl Grindal, <i>Georgia Institute of Technology</i></p>

6. Broadband-Rural	7. Law & Economics-China	8. Tech-Equity 2	9. Privacy-Ethics	10. Security-Geopolitics
Moderator: James Prieger, Pepperdine University	Moderator: Rob Strayer, ITIC	Moderator: Alan S. Inouye, American Library Association	Moderator: Peter Winn, Department of Justice	Moderator: Hannah Price, CSIS

12:00pm	<p>Deploying Fiber in Appalachia: A study of fiber deployment, challenges, funding, and the impacts of broadband connectivity in Eastern Kentucky Udayan Das, Loyola University Chicago and Keith Gabbard, People Rural Telephone Cooperative (PRTC)</p> <p>Remote and Indigenous Broadband: A Comparison of Canadian and US Regulatory Initiatives Heather Hudson, University of Alaska Anchorage, Rob McMahon, University of Alberta and Bill Murdoch, Clear Sky Connection</p> <p>The Effects of Broadband Deployment in Rural Areas: Evaluating the Connect America Fund Program Luisa Nazareno, Georgia State University and Justina Jose, Georgia State University</p>	<p>Regulation of platform market access by the U.S. and China: Neo-mercantilism in digital services Milton Mueller, Georgia Institute of Technology, Karim Farhat, Georgia Institute of Technology</p> <p>Three delusions and a new path: the political economy of the Chinese food traceability system Blue Miaoran Dong, Carleton University</p> <p>Telecom’s Road to 2030: “What if We Were to Do Nothing?” Richard Taylor, Penn State University</p>	<p>Disparate impacts of new technologies on women and minorities: The case of broadband in the U.S. Peter Wang, University of Florida and Mark Jamison, University of Florida</p> <p>COVID-19 and African E-Learning Systems: Structural and Institutional Strategies for Resilience and Antifragility Patience Akpan-Obong, Arizona State University</p> <p>Spatial Patterns of Purposeful Social Networking and Socioeconomic Influences: Towards a Mature, Inclusive Networked Society in the U.S. Avijit Sarkar, University of the Redlands, James Pick, University of the Redlands and Tridev Raut, University of the Redlands</p>	<p>Social Media as Contractual Networks: A Bottom Up Check on Content Moderation Niva Elkin-Koren, Tel Aviv University, Giovanni De Grigorio, University of Oxford – Centre for Socio-Legal Studies, Maayan Perel, Netanya Academic College</p> <p>Privacy Tradeoffs: Who Should Make Them, and How? Jane Bambauer, University of Arizona</p> <p>The view from above: Framing of digital privacy in post-Cambridge Analytica congressional hearings Dmitry Epstein, The Hebrew University of Jerusalem and Rotem Medzini, The Hebrew University of Jerusalem</p>	<p>A Comparative analysis of Cyber Sovereignty Policies in China and the EU Yik Chan Chin, Beijing National University and Ke Li, Beijing National University</p> <p>“Everyone Had to be Part of This” Social Media and Uprising Participation Decisions Carolyn Gideon, Tufts University and Abigail Kukura</p> <p>A Systematic Approach to Reduce Digital Waste Steven Weber, University of California Berkeley</p>
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Plenary Session

Wednesday, September 22, 1:30 pm ET

Moderator: Roslyn Layton, Aalborg University



Doreen Bogdan-Martin, Director of the Telecommunication Development Bureau of the *International Telecommunication Union*, the Secretariat of ITU-D

Ms. Bogdan-Martin is Director of the Telecommunication Development Bureau of the [International Telecommunication Union](#), the Secretariat of [ITU-D](#). She was elected at the 2018 ITU Plenipotentiary Conference in Dubai, and was named as the first woman in the 153-year history of the ITU to hold an elected office. Previously, Bogdan-Martin was Chief of Strategic Planning and Membership from 2008-2018. Bogdan-Martin also serves as the Executive Director of the [Broadband Commission for Sustainable Development](#), Co-Founder of the [EQUALS](#) partnership to bridge the digital divide, Co-creator of the [GIGA](#) school connectivity program with UNICEF, and creator of the [Generation Connect](#) initiative. As Director, she has focused on delivering new partnerships, global initiatives on connectivity, innovation, digital transformation and youth engagement.



Chike Aguh, CInO, U.S. Department of Labor

On January 20, 2021, Chike Aguh (Chee-kay Ah-Goo) was sworn in as Chief Innovation Officer (CInO) at the United States Department of Labor, appointed by President Joe Biden. Reporting to the Deputy Secretary and also serving as the Senior Advisor for Delivery, he leads efforts to use innovative technologies, partnerships and practices to accelerate the Department's mission of delivering a future of work that includes and dignifies every American.

Panel Session

Wednesday, September 22, 2:30 pm ET

Radio Frequency Spectrum Efficiency – New Developments and Trends

Moderator: Dale Hatfield, University of Colorado Boulder

Panelist:

Mariam Sorond, Chief R&D Officer, *CableLabs*

Tom Sawanobori, CTO, *CTIA*

Frederick D. Moorefield, Jr., *Deputy Chief Information Officer for Command, Control, and Communications, Office of the Secretary of Defense, Chief Information Officer*

Charles Cooper, Office of Spectrum Management, *NTIA*

Giulia McHenry, FCC

Spectrum efficiency is an important pillar of spectrum management given the rapid growth in the needs for more spectrum. It is an ideal topic for expert discussion, and it is an excellent graduate school research topic. Spectrum efficiency can be quite controversial at times when major spectrum-using entities disagree on the definition, metrics, and service rules for spectrum usage. TPRC has convened a panel of spectrum management experts to cover current controversies or high-profile developments associated with improvements or new policies seeking to achieve more efficient use of increasingly scarce spectrum. Panelist will provide updates on these issues along with their view of current knowledge gaps where further research is needed to better understand how to address these challenges.

Poster Session

Wednesday, September 22, 2:30 pm ET

- **THE CASE OF 6G AND BEYOND**
Patrick Fiati, *Bluecrest University, Ghana*
- **Home is Where the High Speed Is: Household Determinants of Broadband Internet Subscription**
Michael Martin, *United States Census Bureau*
- **The Effect of Paid Peering Fees on Broadband Prices and Consumer Surplus**
Ali Nikkhah, *University of California, Irvine* and Scott Jordan, *University of California, Irvine*
- **A Study of Promoting Sustainable Mobile Broadband Adoption. - Focusing on Developing Countries for Achieving SDGs -**
Sobee Shinohara, *KDDI Research*
- **Simulating and Estimating Structural Spectrum Auction Parameters: An Application to the C-Band Auction**
Yong Paek, *The Brattle Group* and Ezra Frankel, *The Brattle Group*

TPRC Town Hall

Wednesday, September 22 3:30 pm - 4:30 pm ET

The Information Society: Restoring the Future

Facilitators:

Eli Noam, Columbia University

Johannes Bauer, Quello Center, Michigan State University

Comments by:

The Honorable **Ro Khanna**, U.S. Representative

Sherry Turkle, Massachusetts Institute of Technology

Robin Mansell, London School of Economics

Pamela Samuelson, University of California, Berkeley

Session Topics

- The Information Society: promise and reality
- Is the scholarship of the information sector inherently off-base, and why?
- Is the Information Society a happy society?
- What do we do next to advance a happier information society?
- How to deal with market power?
- How to deal with AI and algorithms?
- How to spend the billions of new infrastructure money?

Paper Sessions Thursday, September 23

	11. Broadband-State/Local Policy	12. Law & Economics-Platform Regulation	13. Law and Economics: Network Dynamics 1	14. Spectrum
	<i>Moderator: Randy May, Free State Foundation</i>	<i>Moderator: Tarleton Gillespie, Microsoft</i>	<i>Moderator: Christos Makridis, Arizona State University</i>	<i>Moderator: Grace Koh, Nokia</i>
10:30 am	<p>Do ‘Dig Once’ and Permitting Policies Improve Fiber Availability? Christina Biedny, <i>Oklahoma State University</i>, Brian Whitacre, <i>Oklahoma State University</i> and Roberto Gallardo, <i>Purdue University</i></p> <p>A program evaluation of state broadband grant programs William Rinehart, <i>Center for Growth and Opportunity</i></p> <p>Effects of Market Structure on Broadband Quality in Local U.S. Residential Service Markets Kenneth Flamm, <i>University of Texas at Austin</i> and Pablo Vargas, <i>University of Texas at Austin</i></p>	<p>Universal Digital Ad Transparency Laura Edelson, <i>New York University</i>, Jason Chuang, <i>Mozilla</i> and Erika Franklin Fowler, <i>Wesleyan University</i>, Michael Franz, <i>Bowdoin College</i>, Travis N. Ridout, <i>Washington State University</i></p> <p>Too Hot to Handle?: Native Advertising and the Firestone Dilemma Eliezer Silberberg, <i>University of Minnesota Law School</i></p> <p>Rethinking Product Liability Rules for Online Marketplaces: A Comparative Perspective Christoph Busch, <i>University of Osnabrueck</i></p>	<p>The Risks and Rewards in Weaponizing Spectrum Planning at the International Telecommunication Union Rob Frieden, <i>Penn State University</i></p> <p>Incentives and optimal time of investment in New Zealand’s building-blocks regulation of its FTTH open-access network Fernando Beltran, <i>University of Auckland</i></p> <p>Smart Contracts, Real-Virtual World Convergence and Policy Implications William Lehr, <i>Massachusetts Institute of Technology</i></p>	<p>IMT-2020 Standardization: Lessons from 5G and Future Perspectives for 6G Mohamed El-Moghazi, <i>NTRA</i> and Jason Whalley, <i>Northumbria University</i></p> <p>Novel-Infrastructure Bidders' Impact on Cost-Based Subsidy Auctions: Evidence from RDOF Phase I Jonathan Lee, <i>The Brattle Group</i> and Coleman Bazelon, <i>The Brattle Group</i>, Paroma Sanyal, <i>The Battle Group</i></p> <p>Rivalrous Regulators: An Historical Analysis of the Dual Agency Approach to Spectrum Management Jeffery Westling, <i>R Street</i></p>

15. Broadband-Measurement

Moderator: Hernan Galperin,
University of Southern
California

16. Law & Economics-Platform Regulation 2

Moderator: Jonathan Levy

17. Law and Economics: Network Dynamics 2

Moderator: Jane Coffin,
Internet Society

18. Global Network Policy

Moderator: Stuart Brotman,
University of Tennessee
Knoxville

19. Spectrum-Rights

Moderator: Mohamed El-Moghazi,
National Telecom
Regulatory Authority of
Egypt

12:00pm

Measuring Library Broadband Networks to Address Knowledge Gaps and Data Caps

Colin Rhinesmith, *Simmons University*, Chris Ritzo, *Measurement Lab*, Jie Jiang, Malana Krongelb, Caroline Cocossa, Peter Dutilloy, Susan Kennedy

Is remote working a privilege? A spatial Durbin approach of digital infrastructure and workplace mobility change during the COVID-19 pandemic in the U.S. Ryan Wang, *Penn State University*

Measurement, Meaning and Purpose: Exploring the M-Lab NDT Dataset

David Clark, *Massachusetts Institute of Technology* and Sara Wedeman, *Massachusetts Institute of Technology*

Safeguarding Public Values in Cooperation with Big Tech Companies: The Case of the Austrian Contact Tracing App Stopp Corona

Valerie Steinkogler,
EMJMD DCLead

A Comparative Lens on Prominence Regulation and Its Implications for Media Pluralism. a Working Paper Eleonora Maria Mazzoli, *London School of Economics and Political Science*

Into the Next Generation of Online Video: OTT Video 3.0

Eli Noam, *Columbia University*

The Importance of National Data Infrastructure in Low- and Middle-income Countries.

Sharada Srinivasan, *University of Pennsylvania* and *The World Bank Group*, Niccolo Comini, *The World Bank Group* and Michael Mingos, *ICT Data*

From Substitutes to Complements: The Changing Dynamics of Wired and Wireless Networks Coleman Bazelon, *The Brattle Group*, Paroma Sanyal, *The Battle Group*

Internet Interconnection, Ecosystem Fragmentation — Towards a Conceptual Foundation of Generalized Virtual Networks Volker Stocker, *Weizenbaum TU Berlin*, Günter Knieps, *University of Freiburg* and Christoph Dietzel, *Max-Planck-Institute for Informatics and DE-CIX*

Challenges in measuring the Internet for the public Interest

Kc Claffy, *University of California San Diego* and David Clark, *Massachusetts Institute of Technology*

A Framework for Expressing Registration Data Directory Services (née Whois) Rules Steve Crocker, *Edgemoor Research Institute*

The Diffusion of National Domain Name Dispute Resolution Policies: A Network Approach. Ryan Wang, *Penn State University*, Yang Bai, *Penn State University*, Jenna Grzeslo, *Penn State University* and Krishna Jayakar, *Penn State University*

On the Coexistence of Disparate Spectrum Users: A Property Rights Mismatch approach

Martin Weiss, *University of Pittsburgh*, Ilia Murtazashvili, *University of Pittsburgh* and Prashant Krishnamurthy, *University of Pittsburgh*

A Macroeconomic Model of Federal and Commercial Spectrum Usage. Carolyn Kahn, *The Mitre Corporation*, Jack McQueston, *The Mitre Corporation*, Susan Hanson, *The Mitre Corporation*, Zekarias Hussein, *The Mitre Corporation* and Dan Brown, *The Mitre Corporation*, Haeme Nam, *The Mitre Corporation*

Spectrum Rights in an Adaptive & Reconfigurable Wireless World. Rohit Singh, *Carnegie Mellon University* and Doug Sicker, *University of Colorado Denver*

Plenary Session

Thursday, September 23, 1:30 pm ET

Comments from **Adrienne Furness**, *Benton Institute for Broadband & Society*

Student Paper Presentations and Awards

- **Detecting effects of misinformation through emotion and trace behavior**, Kristen Sussman, *University of Texas at Austin*
- **Title "Zero": Ending the infinite loop of classifications for broadband via a technology agnostic definition**, Matthew Chung, *University of California Berkeley School of Law*, Harrison Geron, *University of California Berkeley School of Law*, David Fang, *University of California Berkeley School of Law* and Walter Mostowy, *University of California Berkeley School of Law*
- **Wanted: Spectrum Bounty Hunters**, Wilson Scarbeary, *University of Colorado Law School*

Panel Session

Thursday, September 23, 2:30 pm ET

Here Comes the Quantum ARPANET

Moderator: Jane Bambauer, *University of Arizona, Law*

Saikat Guha, *University of Arizona, Optical Sciences*

Dirk Englund, *MIT, Electrical Engineering & Computer Science*

Ines Montano, *Northern Arizona University, Applied Physics*

Christopher Yoo, *University of Pennsylvania, Law*

Scientists around the world are quickly learning to leverage the power of quantum physics to supercharge digital technologies. Quantum Computing is the most well-known application, and its development is likely to enable many benefits (i.e. pattern recognition) as well as risks (i.e. breaking public encryption). But researchers are also making fast progress in the development of Quantum Networking. Quantum networks take advantage of the mysterious-but-predictable properties of superposition and entanglement by sending particles prepared as “qubits” in a quantum-entangled state through a specialized communications architecture. These quantum networks, and the quantum Internet that they will eventually form, are likely to bring another sea change to communications policy. They will enable quantum-based data encryption, they will facilitate networks of quantum sensors, and they will create the infrastructure for blind quantum computing and a robust Internet of Things.

This panel will convene academic researchers who are actively developing the components, protocols, and educated workforce for Quantum networking technologies. Panelists will explain how quantum communications differ from classical communications, describe the current state of development, and discuss the challenges to researchers, industry, and regulators as we create and prepare for these new, transformational technologies.

Poster Session

Thursday, September 23, 2:30 pm ET

- **Deficiencies in the Disclosures of Privacy Policies and in User Choice**
Scott Jordan, *University of California, Irvine*, Siddharth Narasimhan, *University of California, Irvine* and Jina Hong, *University of California, Irvine*

- **Intended and unintended impacts of machine learning for education**
Rediet Abebe, *University of California, Berkeley*, Tolani Britton, *University of California, Berkeley*, Lydia T. Liu, *University of California, Berkeley* and Serena Wang, *University of California, Berkeley*
- **Impact of Interference from Millimeter-Wave Cellular Deployments on Weather Satellites**
Andreea Palade, *RWTH Aachen University*, Andra Voicu, *RWTH Aachen University*, Ljiljana Simić, *RWTH Aachen University*, and Petri Mähönen, *RWTH Aachen University*
- **Ethical Artificial Intelligence in the context of the European Union: gamification of policy-making and simulating decision processes**
Davor Ljubenkov, *imec-SMIT-VUB*
- **Safeguarding Public Values in Cooperation with Big Tech Companies: The Case of the Austrian Contact Tracing App Stopp Corona**, Valerie Steinkogler, *EMJMD DCLead*
- **Simplifying License Information through the use of a Knowledge Graph**
Udayan Das, *Loyola University Chicago*, Vaishali Nagpure, *Illinois Institute of Technology* and Cindy Hood, *Illinois Institute of Technology*

Panel Session

Thursday, September 23, 2:30 pm ET

Global cyber governance issues in a multi-polar world

Moderator:

Milton Mueller, *Georgia Institute of Technology and Director, Internet Governance Project*

Panelists:

Tatiana Tropina, Assistant Professor in Cybersecurity Governance at the *Institute of Security and Global Affairs at Leiden University*

Konstantinos Komaitis, Senior Director, Policy Strategy and Development at the *Internet Society*.

Alex Engler, Rubenstein Fellow in Governance Studies at *The Brookings Institution*

Jackie Grace Schneider, Hoover Fellow at the *Hoover Institution*

This panel addresses some of the most pressing global ICT governance issues posed by the increasing importance of the internet, data and software applications. Topics covered include cybersecurity and privacy, including Europe's new Network and Information Security proposal (NIS2), International Cooperation on AI regulation, threats of fragmentation of governance or technical compatibility, and the prospects of a so-called digital Cold War.

Paper Sessions Friday, September 24

	20. Law & Economics- Big Questions	21. Security- Infrastructure	22. Law & Economics- Platform Competition	23. Tech-User Studies
	<i>Moderator: Armand Musey, Summit Ridge Group</i>	<i>Moderator: Lisa Folkes, FCC</i>	<i>Moderator: Jeff Prince, Indiana University</i>	<i>Moderator: Keyla Hernandez-Ulloa, FCC</i>
10:30am	<p>Is Speed Enough? Examining the Definition of Broadband and Its Implications for Public Policy David Reed, <i>University of Colorado Boulder</i></p> <p>Mapping the 5G Leadership Landscape: The Impact of Global Telecommunications Standard Setting on U.S. Strategy and Policy Alexandra Bruer, <i>ITIF</i> and Doug Brake, <i>ITIF</i></p> <p>Social Media and Privacy Laws and Regulations in Mongolia. Undrah Baasanjav, <i>Southern Illinois University Edwardsville</i></p>	<p>Toward Grading Cybersecurity & Resilience Posture for Cyber Physical Systems Rohit Singh, <i>University of Colorado Boulder</i>, Shaun T. Hutton, <i>Baylor University</i>, Michael J. Donahoo, <i>Baylor University</i> and Doug Sicker, <i>University of Colorado Denver</i></p> <p>Identifying Critical Infrastructure in a World with Supply Chain and Network Cybersecurity Risk Christos Makridis, <i>Arizona State University</i> and Deven Desai, <i>Georgia Tech</i></p> <p>The Networked Politics of Incident Response: Practices and Pressure Points Louise Marie Hurel, <i>London School of Economics and Political Science</i> and Laurin Weissinger, <i>Tufts University</i></p>	<p>Effects of Big Tech Acquisitions on Start-up Funding and Innovation Tiago Sousa Prado, <i>Michigan State University</i></p> <p>Big Tech, Big Data, and Competition Policy: Favoring Dynamic Over Static Competition David Teece, <i>University of California Berkeley</i> and Nicolas Petit, <i>European University Institute</i></p> <p>Anticompetitive Effects in Platform (and Non- Platform) Markets Thomas Nachbar, <i>University of Virginia School of Law</i></p>	<p>Characterizing User Comprehension in the STIR/SHAKEN Anti- Robocall Standard Imani Sherman, <i>University of Florida</i>, Daniel Delgado, <i>University of Florida</i>, Juan Gilbert, <i>University of Florida</i>, Jaime Ruiz, <i>University of Florida</i> and Patrick Traynor, <i>University of Florida</i></p> <p>A comparative study of local broadcasters' Twitter utilization in different market conditions Sangyong Han, <i>University of Pennsylvania Law School</i></p> <p>The Clickwrap as Platform Governance: Assessing the Frequency of Exploitative Interface Designs During Digital Service Sign-Up Jonathan Obar, <i>York University</i> and Lior Magalashvili, <i>Ryerson University</i></p>

	24. COVID	25. Security-Policy Assumptions	26. Law & Economics – New Topics	27. Tech-AI	28. Tech-Novel research
	<i>Moderator: Andrea O’Sullivan, The James Madison Institute</i>	<i>Moderator: Paul Matzko, Cato Institute</i>	<i>Moderator: Tom Vartanian, Financial Technology & Cybersecurity Center</i>	<i>Moderator: Ryan Hagemann, IBM Policy Lab</i>	<i>Moderator: Petrus Potgieter, University of South Africa</i>
12:00pm	<p>An analysis of State Level COVID-19 Related Legislation Related to Internet Governance, Access, and Infrastructure Ian Dunham</p> <p>Community Media in a Pandemic: Facilitating Local Communication, Collective Resilience and Transitions to Virtual Public Life in the U.S. Patricia Aufderheide, <i>American University</i>, Antoine Haywood, <i>University of Pennsylvania</i> and Mariana Sanchez Santos, <i>American University</i></p> <p>Changes in Mobile Broadband Infrastructure in Rural Georgia During the Covid-19 Pandemic Ellen Zegura, <i>Georgia Tech University</i>, Luisa Nazareno, <i>Georgia State University</i> and Cathy Liu, <i>Georgia State University</i></p>	<p>Covenants Without the Sword: Market Incentives for Cybersecurity Investment Vaibhav Garg, <i>Comcast Cable</i></p> <p>Answering the Cyber Oversight Call Amy C. Gaudion, <i>Penn State Dickinson Law</i></p> <p>Cybersecurity in Working from Home: An Exploratory Study Mary Bispham, <i>Kings College London</i>, Sadie Creese, <i>Oxford University</i>, William Dutton, <i>GCSCC</i>, Patricia Esteve-Gonzalez, <i>GCSCC</i> and Goldsmith Michael, <i>Oxford University</i></p>	<p>Regulating Cryptocurrencies: mapping economic objectives and technological feasibilities Petrus H. Potgieter, <i>University of South Africa</i> and Bronwyn Howell, <i>Victoria University of Wellington</i></p> <p>In Banks we Trust: Banks as Custodians of Personal Data in Open Banking Ecosystems Ine van Zeeland, <i>imec-SMIT, Vrije Universiteit Brussel</i> and Jo Pierson, <i>imec-SMIT, Vrije Universiteit Brussel</i></p> <p>Compulsory Trade Secret Licenses David Levine, <i>Elon Law</i></p>	<p>Tech Trek: Gauging Residents’ Comfort Levels with Smart Technologies through a “Datawalk” Gwen Shaffer, <i>California State University Long Beach</i></p> <p>Smart Cities and Ethical Policies: The Challenges of Public Cameras and AI Sharon Strover, <i>University of Texas at Austin</i> and Tiancheng Cao, <i>University of Texas at Austin, Maria Esteva, University of Texas at Austin, Soyoun Park, University of Texas at Austin</i></p> <p>Acceptance and Effective Use of Virtual Assistants Janice Hauge, <i>University of North Texas</i> and Ezei Ogbo, <i>North Carolina Central University</i></p>	<p>Aligning Legal Definitions of Personal Information with the Computer Science of Identifiability Scott Jordan, <i>University of California, Irvine</i></p> <p>Explaining Public Attitudes about Facial Recognition Technology Paul Brewer, <i>University of Delaware</i>, James Bingaman, <i>University of Delaware</i>, Wyatt Dawson, <i>University of Delaware</i>, Ashley Paintsil, <i>University of Delaware</i> and David Wilson, <i>University of Delaware</i></p> <p>Smart Household Devices and the Negotiation of Public and Private Spaces Sara Gandrén, <i>inTehrity i Karlstad AB</i>, Nicklas Berild Lundblad, <i>Stockholm University</i></p>

Plenary Session

Friday, September 24, 1:30 pm ET

Fireside Chat

Introduction by **David Don**, Senior Vice President, Public Policy, Comcast



Conversation with Acting Chairwoman **Jessica Rosenworcel**, FCC and **Nicol Turner Lee**, Brookings Institution, Senior Fellow, Governance Studies and Director, Center for Technology Innovation

Federal Communications Commission Acting Chairwoman **Jessica Rosenworcel** believes that the future belongs to the connected. She works to promote greater opportunity, accessibility, and affordability in our communications services in order to ensure that all Americans get a fair shot at 21st century success. She believes strong communications markets can foster economic growth and security, enhance digital age opportunity, and enrich our civic life.

From fighting to protect net neutrality to ensuring access to the internet for students caught in the Homework Gap, Jessica has been a consistent champion for connecting all. She is a leader in spectrum policy, developing new ways to support wireless services from Wi-Fi to video and the internet of things. She also is responsible for developing policies to help expand the reach of broadband to schools, libraries, hospitals, and households across the country.

Dr. Nicol Turner Lee is a senior fellow in Governance Studies, the director of the Center for Technology Innovation, and serves as Co-Editor-In-Chief of [TechTank](#). Dr. Turner Lee researches public policy designed to enable equitable access to technology across the U.S. and to harness its power to create change in communities across the world. Her work also explores global and domestic broadband deployment and internet governance issues. She is an expert on the intersection of race, wealth, and technology within the context of civic engagement, criminal justice, and economic development.

Panel Session

Friday, September 24, 2:30 pm ET

The Technical and Policy Considerations of using Machine Learning tools in Content Moderation

Moderator: Dhanaraj Thakur, Research Director at the *Center for Democracy & Technology*

Panelists:

Anima Anandkumar, Professor, Dept. of Computing + Mathematical Sciences, Caltech; and Director of Machine Learning Research at NVIDIA

Casey Fiesler, Assistant Professor, College of Media, Communication and Information, UC Boulder

Caitlin Vogus, Deputy Director of the Free Expression Project at the Center for Democracy & Technology

The sheer scale of uploaded user generated multimedia content has increased dramatically in recent years, leading to an explosion in the research and use of automated techniques to analyze and moderate it. These include two main categories of these techniques: matching tools (e.g., cryptographic hashing and perceptual hashing), and prediction tools (e.g., computer vision and computer audition techniques).

This panel features experts from academia, civil society, and industry, who will discuss the capabilities and limitations of automated tools for analyzing online multimedia content. We will examine the human rights risks that need to be considered when using machine learning techniques in content moderation, and speakers will offer suggestions for safeguards that can help mitigate against these risks and limitations. This discussion can contribute to an increased and shared understanding of the role and impacts of ML tools used in content moderation systems for both large and small online platforms.

Poster Sessions

Friday, September 24, 2:30 pm

- **Productivity of the use of Information and Communication Technologies in middle and higher education: The case of Mexican states.**
Diana L. Becerra-Peña, *University of Guadalajara*, Javier Gonzalo Rodríguez Ruiz, *University of Guadalajara* and Patricia Gutiérrez Moreno, *University of Guadalajara*
- **Taking the Plunge: Factors That Influence Rural Households When Choosing a Broadband Service**
Eric Frederick, *Connected Nation, Inc.* and Chris MCGovern, *Connected Nation, Inc.*
- **Connecting Across the Digital Divides through Story Maps: Agriculture, Education, Domestic & International**
John Ignosh, *Virginia Tech & Extension*, Dylan Pearson, *Virginia Tech*, Matt Booher, *Virginia Cooperative Extension*, Venkat Sridhar, *Virginia Tech*, Thomas Archibald, *Virginia Tech* and Brian Benham, *Virginia Tech*
- **Communicating Impact: the Global Cybersecurity Capacity Centre**
Carolyn Weisser Harris, *Global Cyber Security Capacity Centre (GCSCC)*, Elizabeth Orembo, *Global Cyber Security Capacity Centre (GCSCC)* and William H. Dutton, *Global Cyber Security Capacity Centre (GCSCC)*
- **Constructive Outcomes of Internet Adoption in Older Adult Households**
Michel Mersereau, *University of Toronto*
- **Impacts of Broadband Availability in Arkansas Public Schools During the Covid-19 Pandemic on Virtual Learning Decisions**
Jacob Manlove, *Arkansas State University* and Alexis Schrubbe, *University of Texas at Austin*
- **The Internet at 50: The Best of Times, the Worst of Times?**
Prabir Neogi, *Carleton University*, Arthur Cordell, *Carleton University* and Don Maclean

Closing Panel Session

Friday, September 24 3:30 pm ET

What COVID taught us about the future of technology and TPRC?

Nicol Turner Lee, TPRC Board Chair, and Senior Fellow, Governance Studies and Director, Center for Technology Innovation, Brookings Institution

Caitlin Chin, Research Associate and Past Winner of the TPRC Student Paper Competition

Tom Hazlett, Clemson University

Roberto Gallardo, Director, Purdue Center for Regional Development, Purdue University

Roslyn Layton, TPRC Program Committee Chair, Visiting Researcher, Aalborg University Center for Communication, Media, and Information Technologies
Dominique Harrison, Joint Center for Political and Economic Studies, Inc
Scott Wallsten, President, Technology Policy Institute

The past year has revealed why having updated and effective regulation, legislation, and collaborative partnerships are to managing through universal broadband access, fair and ethical artificial intelligence systems, and productive international governance policies. The global pandemic not only challenged traditional norms and assumptions about the tech ecosystem, but quickly emerged citizens and policymakers into spaces where the reliance on digital technologies were the lifeline for civic participation, commerce, and access to government services. The pandemic also revealed that emerging technologies had costs on privacy, existing industries and institutions, and human, as well as civil rights. In this closing plenary, please join an interdisciplinary, multi-generational panel on the future of technology and the role of organizations like TPRC in navigating the future.