

# quello center

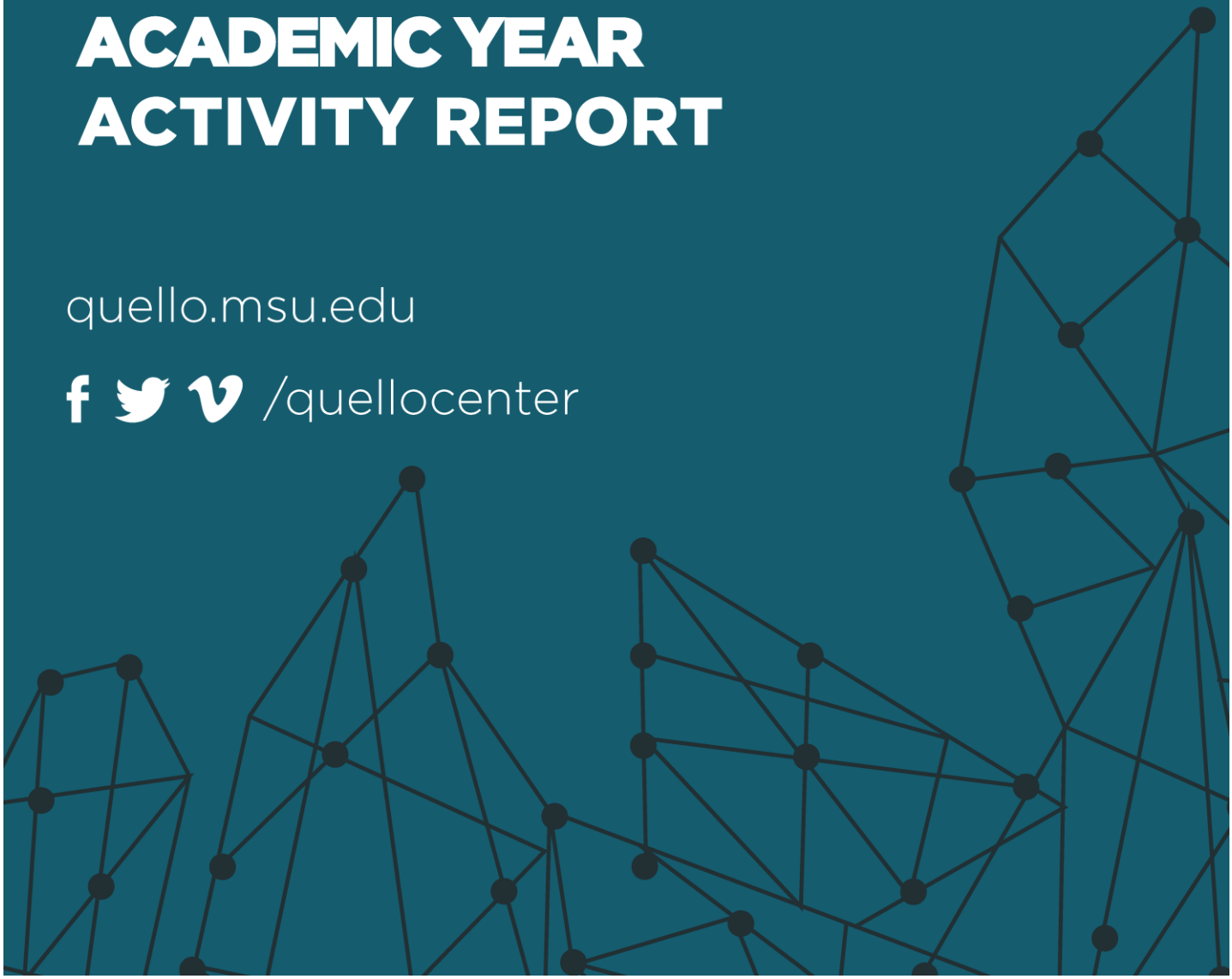
MEDIA & INFORMATION POLICY

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## 2022-2023 ACADEMIC YEAR ACTIVITY REPORT

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## Mission

Named after the late James H. and Mary B. Quello, the Quello Center is one of the leading U.S. academic centers in communication, media, and information policy. Our work examines the interactions between technology, policy, and society at the level of individuals, communities, and society. We collaborate with practitioners to translate rigorous academic research into the design and implementation of better information policy and governance. The Center's interdisciplinary research draws from multiple empirical methods and multi-disciplinary theoretical perspectives. The Center is based in the Department of Media and Information at Michigan State University (MSU). It consists of a core set of researchers, complemented by research associates across MSU as well as other U.S. and international universities and research centers.

## Research Areas

	<b>ICTs &amp; society</b>	Interactions of ICTs and society, e.g., social media use and self-esteem; information seeking and COVID-19 beliefs and knowledge formation during COVID-19.
	<b>Digital equity and inclusion</b>	Several projects focus on broadband access and quality, digital skills, and barriers to use, across rural and urban communities, to inform decisions aimed at narrowing digital divides.
	<b>Digital innovation</b>	Roles of policy in harnessing the benefits of emerging technologies, public interest innovation, responsible innovation.
	<b>Platform and Internet policy</b>	Our work covers a range of themes related to renewed efforts to design policy frameworks for digital platforms, to revisit Section 230, and to address the market power of big tech.
	<b>Information security</b>	With researchers in computer science and criminal justice we explore the economic, legal, behavioral, technical and policy aspects of cybersecurity.
	<b>Foundations</b>	Work in this area develops foundational knowledge informing policy responses to challenges such as digital platform power, privacy, surveillance, data ethics, and the governance of AI.

## Advisory Board

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## CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>8</b>
<b>1. SPEAKER SERIES AND POLICY DISCUSSIONS.....</b>	<b>9</b>
1.1. Speaker Series.....	9
1.2. Panel Discussions, Webinars, Workshops.....	9
<b>2. ONGOING PROJECTS.....</b>	<b>10</b>
2.1. Broadband Policy Assessment and Design.....	10
2.2. MOON-Light.....	11
2.3. The COVID-19 Pandemic and Rural Digital Inequities in Educational Attainment, Student Performance, and Psychological Wellbeing .....	11
2.4. Political and Health Information Seeking.....	12
2.5. Policies to Support Digital Innovation .....	13
2.6. Broadband and Educational Achievements .....	14
2.7. Spatial Inequality in the Digital Economy .....	14
<b>4. MATURE AND COMPLETED PROJECTS.....</b>	<b>15</b>
4.1. Cybersecurity Capacity Building.....	15
4.2. Social Tolerance and Communication Technologies .....	16
4.3. Threats from Ideologically Motivated Cyber Attackers .....	16
4.4. Improving the Quality of Broadband Data .....	16
4.5. Quello Search Project .....	17
4.6. Broadband to the Neighborhood in Detroit.....	17
<b>5. COMMUNITY AND OUTREACH.....</b>	<b>17</b>
5.1. Outreach and Public Service.....	17
5.2. Quello Center Policy Briefs.....	17
5.3. In the Media.....	17
5.4. Video Library .....	17
5.5. Online Presence.....	17
5.6. SSRN E-Journal .....	18
<b>6. SELECTED PUBLICATIONS AND PRESENTATIONS .....</b>	<b>18</b>

<b>6.1. Journal Articles and Conference Proceedings.....</b>	<b>18</b>
<b>6.2. Books and Chapters .....</b>	<b>20</b>
<b>6.3. Book Reviews .....</b>	<b>21</b>
<b>6.4. Technical Reports .....</b>	<b>21</b>
<b>6.5. Recent and Upcoming Presentations.....</b>	<b>22</b>
<b>6.6. Work in Progress .....</b>	<b>24</b>

## EXECUTIVE SUMMARY

With the increasing attention to high-speed connectivity and digital equity across the country, these topics continued to be a strong focus of our work in the past year, shaping research and outreach efforts. Our work was published in top-peer reviewed journals and book chapters. It was presented at professional conferences, shared online, and in-person workshops. Our findings have become part of widely shared knowledge, are referenced in media, and cited in public policy documents, state government websites, and in federal documents, such as the 2022 Economic Report of the President.

The 2022-2023 academic year started with the official announcement of a \$10.5 million award by the National Telecommunications and Information Administration (NTIA) to MSU and Merit Network for Project [MOON-Light](#). Quello Center Director Johannes M. Bauer and Dr. Melissa Woo, MSU Executive Vice President for Administration, are co-Principal Investigators of the award.

The Center was a founding member of Opportunity Broadband and of the Broadband Policy Research Consortium (BPRC). Opportunity Broadband is a national organization established to help realize the full benefits of high-speed digital connectivity. BPRC was established with researchers at the University of Texas at Austin, Oklahoma State University, and the University of Southern California. It has since expanded to include collaborations with researchers at Cornell University, the University of California at Santa Barbara, and the University of California, Berkeley. At MSU, the Center initiated the formation of the Digital Equity Consortium that brings together researchers and practitioners from across the university.

A new research grant obtained in the spring of 2022 allowed conducting a follow-up study with the schools that participated in our 2019-2020 study of broadband and educational outcomes. Data is being analyzed, and we expect a first report to be released early in 2023. A second grant to Dr. Jean Bohaczek explores a user-centric approach to broadband. We continued our work related to digital platform regulation and policies in support of digital innovation.

We participated in national and international webinars for professional audiences and in several events for practitioners related to our work on broadband. The Center also organized and co-sponsored a well-attended session on broadband policy at the 50th Research Conference for Communication, Information, and Internet Policy (TPRC50), and will be involved in the upcoming TPRC51 as well as other international conferences, such as the ITS Conference in Madrid and the ICA in Toronto.

Center researchers published several articles in high-quality peer-reviewed publications, including the *Social Science Computer Review*, *Telecommunications Policy*, and *Information Economics and Policy*. Additional articles are in revision and under review. Several book chapters, technical reports, and policy briefs complement the portfolio of publications. As in past years, we used the Quello Center *SSRN E-Journal* to disseminate working papers prior to publication.

One of our goals is to translate rigorous research into actionable insights. In pursuit of that goal, we gave numerous presentations at practitioner workshops and training programs at the local, national, and international levels. Our outreach work in the State of Michigan was recognized by MSU with the 2022 Distinguished Partnership Award.



## 1. SPEAKER SERIES AND POLICY DISCUSSIONS

Part of our mission is to stimulate discussion of important and controversial issues, based on detailed examination of historical experiences and rigorous analyses of forward-looking policy options. Depending on the topic and the speaker, we conduct some discussions following Chatham House rules, record others for time-delayed release in our video archive (<https://vimeo.com/quellocenter>) or stream them live to a national and global audience (streamed talks are also placed in our video archive). Notable Center and co-sponsored events in the recent past include:

### 1.1. Speaker Series

- **Jonathan Obar**, York University, *Privacy Protective Behavior and “The Biggest Lie on the Internet”* (April 2023)
- **Milton Mueller**, Georgia Institute of Technology, *Digitization and Social Control: Toward a Cybernetic Political Economy* (February 2023)
- **Morgan Vigil-Hayes**, Northern Arizona University, *The Future is Multinetworked: Lessons for Broadband Networking from Rural Places* (February 2023)
- **David Clark**, MIT, *Dealing with the (In)security of the Internet* (November 2022)
- **Rachel Kowert**, Research Director of Take This Keynote, *Toxic, Schmoxic? Societal Repercussions for the Normalization of Hate in Gaming Spaces* (October 2022)
- **Amy S. Bruckman**, Georgia Institute of Technology, *Should You Believe Wikipedia? Social Epistemology, Virtue Epistemology, and the Practice of Internet Research* (September 2022)
- **Fernando Maestre**, Department of Computer Science & Engineering, University of Minnesota, *Living with HIV in Rural Areas: Addressing Healthcare* (April 2022).
- **Sandra Braman**, Texas A&M University, *“Because Technology” and other Legal Imaginaries of COVID-19* (March 2022)
- **Natascha Just, Alena Birrer, & Danya He**, Media & Internet Governance Division, Department of Communication and Media Research, University of Zurich, *Media-Concentration Control in Times of Platformization – Findings from a Cross-National Study* (February 2022).
- **Brianna B. Posadas**, Virginia Tech, *Big Data in Agriculture: Applications and Policy* (January 2022), cosponsored with the Rural Computing Research Consortium (RCRC) at MSU.

All Quello Center talks are archived at <https://vimeo.com/quellocenter>.

### 1.2. Panel Discussions, Webinars, Workshops

- **Annabelle Gawer** (University of Surrey), **Herbert Hovenkamp** (University of Pennsylvania), **Shane Greenstein** (Harvard University), *Innovation and Competition in the Digital Economy Part I: Big Tech, Competition & Innovation in the Digital Economy*, Joint Event Co-hosted by the Quello Center and the Weizenbaum Institute, Berlin, Moderated by Johannes M. Bauer and Volker Stocker, February 2, 2023.
- **Johannes M. Bauer**, *The return of the state to the digital economy*. Presentation at the CITI/IMMAA online seminar, Columbia University, January 5, 2023.
- **Johannes M. Bauer**, *The Digital Opportunities Compass: Metrics to Monitor, Evaluate, and Guide State Broadband Policy*. Presentation at the Broadband Leaders Summit, Miami, FL, December 9, 2022.

- **Johannes M. Bauer**, *An Information-Economic Perspective on Platform Governance*, presentation at the online symposium of the Weizenbaum Institute, Berlin, on New Perspectives on the Digital Economy: Sharing, Platforms & Regulation, December 2, 2022.
- **Johannes M. Bauer**, *Escaping the digital equality/digital inequality cycle*. Presentation at the Connect 313 Digital Inclusion Week Research Symposium, Wayne State University, Detroit, MI, October 4, 2022.

## 2. ONGOING PROJECTS

### 2.1. Broadband Policy Assessment and Design

With funding authorized by the Infrastructure, Investment and Jobs Act 2021 (IIJA), the federal government, states, and communities will have a window of opportunity to develop first steps toward long-term, sustainable approaches to improve digital connectivity. The scale and diversity of current federal, state, and local broadband and digital equity policy initiatives also entails a responsibility to the public to assure the responsible use of public funds. Multiple models exist and will be used across the nation to achieve the transformative impact for community development, but not all of them will be equally effective. Building a spatially differentiated knowledge base in parallel with the implementation of programs and initiatives will help to learn from successes and failures. It will facilitate learning from experience in various locations, allow improvements of ongoing initiatives, and assist in the development of sustainable, forward-looking programs that can harness the benefits of advanced digital technologies more fully.

Two proposals are currently under review and others are in development. If funded, these projects will address four overarching research questions, each relevant for U.S. broadband policy and designed to be translated into actionable policy knowledge. (1) What is the impact of the programs authorized by IIJA 2021 on broadband development at a national, state, and community level? (2) How are the programs established by the IIJA affecting digital equity at a national, state, and community level as well as for specific populations and groups? (3) How are the programs adopted at the national, state, and local levels contributing to community social and economic development? (4) What lessons can be drawn from the early experience with IIJA and from prior broadband policy programs to improve the overall effectiveness of current and future initiatives? These efforts are developed collaboratively with researchers from across the country.

#### Conference and Workshop Presentations

Bauer, J.M. (2023). Federal-Local Realignment of Broadband Policy and Digital Equity in the United States. Prepared for presentation at the 2023 Urban Affairs Association Conference, Nashville, TN, April 26-29, 2023. Quello Center Working Paper 3/23. Michigan State University, East Lansing, Michigan.

Rhinesmith, C., Dagg, P.R., Bauer, J.M., Byrum, G., & Schill, A. (2023). Digital opportunities compass: Metrics to monitor, evaluate, and guide broadband and digital equity policy. Working paper, Ann Arbor, MI: Merit Network, Inc. and East Lansing, MI: Quello Center.

## 2.2. MOON-Light

Merit Network and Michigan State University are joint recipients of a \$10.5 million National Telecommunications and Information Administration (NTIA) Broadband Infrastructure Program Grant that will connect Michigan’s many disparate Internet pathways.



This program, named the Michigan Open Optical Network – Leveraging Innovation to Get High-Speed Technology (MOON-Light), will help address critical infrastructure gaps by enabling technologically advanced, middle-mile fiber optic infrastructure across the state. It will allow interconnecting local Internet service providers (ISPs) to bring affordable, robust, high-speed broadband Internet to homes and businesses in Michigan’s underserved/unserved population areas.

This project leverages funding from the National Telecommunications and Information Administration’s Broadband Infrastructure Program (BIP), one of the recent infrastructure programs. BIP was a precursor to the Infrastructure Investment and Jobs Act (IIJA), which was signed into law by President Biden on November 15, 2021. MOON-Light deploys state-of-the equipment on a statewide scale and requires no additional middle-mile fiber construction. Implementation is expected to take 12 months. Entire regions across Michigan lack high-performance fiber optical connections to the Internet through mainline attachments (“middle-mile” infrastructure), and many residents remain unserved with approximately 380,000 lacking any connectivity to their homes and businesses (“last mile” infrastructure).

Unlike closed (private) infrastructure networks that offer services from a single service provider to residents, the MOON-Light network will provide regional connectivity through an open-access network approach. Open-access networks (OANs) are high-performance networks that are open to multiple providers that leverage the infrastructure to offer high-capacity broadband services to residents and businesses.

Recording of the event is available [here](#).

## 2.3. The COVID-19 Pandemic and Rural Digital Inequities in Educational Attainment, Student Performance, and Psychological Wellbeing

This research, led by Keith N. Hampton and Johannes M. Bauer, will study the role of digital inequality on change in rural student’s academic performance, educational aspirations, and psychological wellbeing due to the COVID-19 pandemic. Utilizing existing survey and student record data from a 2019 sample of rural students will be paired with student records from standardized exams (2019-2022), and information on student internet during the pandemic. This work will answer the question of whether students with no or poor Internet access, and those with lower digital skills, experienced declines in academic performance, educational aspirations, or psychological wellbeing? And if

initiatives by schools to “fill the gap” in the missing infrastructure for rural Internet access (e.g., deploying cell phone hotspots) was successful at preventing negative consequences to student performance, educational aspirations, and psychological wellbeing due to preexisting digital inequalities?

## **2.4. Political and Health Information Seeking**

This project, partially funded by a grant from the *John S. and James L. Knight Foundation*, seeks to understand information seeking and how different practices influence knowledge about matters of public importance during periods of dynamic change. Such situations, exemplified but not limited to the coronavirus pandemic, necessitate that individuals and organizations make decisions based on incomplete and changing information, often complicated by deliberately misleading information. Using the unfolding coronavirus pandemic as a case to study the broader phenomenon of information seeking and verification under conditions of uncertainty and rapidly changing information, the research project examines the interplay between political and health information seeking. Controlling for socioeconomic and other factors, we are particularly interested in how sources and channels used to obtain, verify, and update information influence individuals’ mental models and factual knowledge about the pandemic and appropriate responses.

A team of researchers from Michigan State University, University of North Carolina Charlotte, Oxford University, and Clemson University conducted two nationally representative surveys in the United States and the United Kingdom. We are currently examining four research questions pertaining to theories of information seeking, information verification, and trust in different information sources: (1) What online media, offline media, and other information sources do American and British Internet users rely on and trust during the COVID-19 pandemic, and how do socio-demographic factors influence these choices? (2) (How) Do people update and verify information to deal with incomplete information and uncertain knowledge? (3) How do socio-demographic factors, information sources, and the updating rules used by individuals relate to their perceptions and knowledge about political and health topics related to COVID-19? (4) How do socio-demographic factors, information sources, and the updating rules used by individuals influence behavioral intentions?

### Publications, Conference Papers, and Policy Briefs

- Bauer, J.M.; Knittel, M.; Ma, W.; Shillair, R.J.; Blank, G. (2023). Formation and fragmentation of mental models in heterogeneous media ecosystems during times of complex crisis. 73rd Annual Conference of the International Communication Association-Media Sociology Post-conference.
- Muqaddam, A.A., Argyris, Y.A., Blank, G., Bauer, J.M., Knittel, M., & Cotten, S. (2022). Media Use, Misinformation, and COVID-19 Vaccination Intentions: A Study of the United States and the United Kingdom. Under peer review.
- Blank, G., & Reisdorf, B.C. (2021). Digital inequalities and public health during COVID-19: Media dependency and vaccination. Paper presented at the 72nd Conference of the International Communications Association (ICA), Paris, France.
- Robertson, C.T., Knittel, M., Blank, G., Bauer, J.M., & Shillair, R. (2021). The influence of news media, politicians, and experts as information sources on COVID-19 attitudes and beliefs: A US–UK comparison. Paper presented at the 72nd Conference of the International Communications Association (ICA), Paris, France.

- Reisdorf, B.C., Blank, G., Cotten, S., Argyris, A., Robertson, C.T., Knittel, M., & Bauer, J.M. (2021). Overcoming COVID-19 Vaccine Hesitancy. *Quello Center Policy Brief* 02/21.
- Reisdorf, B.C., Blank, G., Bauer, J. M., Cotten, S., Robertson, C.T., & Knittel, M. (2021). Information Seeking Patterns and COVID-19 in the United States. *Journal of Quantitative Description: Digital Media*, 1. [DOI](#)

## 2.5. Policies to Support Digital Innovation

This multi-year research initiative seeks to inform policies toward advanced ICT service and applications in the United States, with a current emphasis on 5G wireless services, platform ecosystems, and systemic types of innovation (e.g., smart mobility). Many of the topics addressed will also apply to emergent technologies, including 6G and sub-THz services as well as the Internet of Intelligence (IoI). 5G, 6G and sub-THz wireless services will constitute an integral part of the future gigabit communication network infrastructure. Platform ecosystems have been the focus of much criticism but the drivers of innovation in these markets, and positive and negative effects of digital platforms, are only poorly understood.

Projects in this area will examine how policy choices affect innovation outcomes. The \$100,000 gift from Facebook has helped launch work in this family of projects. Additional proposals are in preparation.

### Publications and Working Papers

- Bauer, J.M., Stocker, V., & Pourdamghani, A. (2023). Innovation Dynamics in the Internet Ecosystem and Digital Economy Policy. Prepared for presentation at the European Conference of the International Telecommunications Society, Madrid, Spain, June 18-19, 2023.
- Bauer, J.M. & Prado, T.S. (2023). Digital Innovation: An Information-Economic Perspective. In D. R. Raban & J. Włodarczyk (Eds.), *The Elgar companion to information economics*. Edward Elgar.
- Prado, T.S. (2022). Emerging Policy and Regulatory Regimes for Digital Platforms: Lessons for U.S. Competition Policy. Paper to be presented at the 31<sup>st</sup> European Regional Conference of the International Telecommunications Society (ITS) and the 50<sup>th</sup> Research Conference on Communication, Information, and Internet Policy (TPRC50).
- Prado, T.S., & Bauer, J.M. (2022). Big Tech Platform Acquisitions of Start-ups and Venture Capital Funding for Innovation. *Information Economics and Policy*. <https://doi.org/10.1016/j.infoecopol.2022.100973>.
- Bauer, J.M. (2022). Toward new guardrails for the information society. *Telecommunications Policy*, 102350. Published online April 6, 2022. <https://doi.org/10.1016/j.telpol.2022.102350>.
- Bauer, J.M. & Bohlin, E. (2021). Regulation and innovation in 5G markets. *Telecommunications Policy*, 102260, <https://doi.org/10.1016/j.telpol.2021.102260>.
- Knieps, G. & Bauer, J.M. (2021). Internet of things and the economics of 5G-based local industrial networks. *Telecommunications Policy*, 102261, <https://doi.org/10.1016/j.telpol.2021.102261>.
- Bauer, J.M. and Prado, T.S., Digital Platforms and Innovation: Lessons for Innovation Policy and Regulation (December 15, 2020). Available at: [SSRN](#) or [DOI](#).

## 2.6. Broadband and Educational Achievements

Initiated in 2019, this study was designed to understand the repercussions of absent or poor home Internet connectivity on student performance and the associated costs to society. The focus was on Internet connectivity outside of school among middle and high school students enrolled in rural and small-town schools. Inequalities related to income and race are often used to explain why some people still do not have Internet or broadband access at home. Often overlooked in this discussion is the role of geography and varying levels of infrastructure access. Our study allowed us to disentangle these factors.

The report published in March 2020 was widely read by policymakers and stakeholders. Building on the experience with the Broadband Gap project, we helped Merit Network to develop a toolkit that facilitates a highly granular assessment of the availability and quality of broadband connectivity. During the past year, the approach has been used by several counties across Michigan, including Washtenaw County, Berrien County, and Ottawa County, to assess the state of connectivity among their residents and to develop appropriate responses to overcome gaps and discrepancies. It was also used by several large organizations, including Wayne State University, to identify and help overcome connectivity gaps among students and faculty. The approach is scalable and applicable to state and national level information collection.

### Publications and Working Papers

- Hampton, K.N., & Shin, I. (2022). Disconnection is More Problematic for Adolescent Self-Esteem Than Heavy Social Media Use: Digital Inequality, Restrictive Parenting, and the Relationship to Time Rural Youth Spend with Friends and Family. 2022 Hybrid Conference of the International Communication Association (ICA), Paris, France.
- Hampton, K.N., Robertson, C.T., Fernandez, L., Shin, I. & Bauer, J.M. (2021). How variation in Internet access, digital skills, and media use are related to rural student outcomes: GPA, SAT, and educational aspirations. *Telematics and Informatics* 63, 101666, <https://doi.org/10.1016/j.tele.2021.101666>.
- Bauer, J.M., Hampton, K.N., Fernandez, L., & Robertson, C.T. (2020). *Overcoming Michigan's homework gap: The role of broadband Internet connectivity for student success and career outlooks*. Quello Center Working Paper No. 06-20.
- Hampton, K.N., Fernandez, L., Robertson, C.T., & Bauer, J.M. (2020). *Broadband and Student Performance Gaps*. James H. and Mary B. Quello Center, Michigan State University. March. <https://doi.org/10.25335/BZGY-3V91>.

## 2.7. Spatial Inequality in the Digital Economy

A joint initiative with researchers at the Oxford University, the Humboldt Institute for Internet and Society (HIIG) in Berlin, the University of Copenhagen, and Linköping University, this project seeks to understand the forces that drive inclusion and exclusion of regions and nations in the global digital economy. Building on strands of work in development economics and on digital entrepreneurship, we hypothesize that the digital development of nations can be measured as a network of technologies and the relations between them. Global inequalities in digital development can then be understood as differences in the positions of countries in the “technology space.” Using data from Stack Overflow, the world's largest question and answer website for programming related topics, we describe this

technology space as a network. We believe that this perspective has the potential to result in a better understanding of persistent inequalities in the development of the digital economy. We obtained funding from programs at Oxford University to carry out project development work. Several presentations were made at international conferences and a publication in a peer-reviewed journal is in preparation.

#### Conference Presentations

- Fabian Braesemann, Alexandra Rottenkolber, Ole Teutloff, and Johannes M. Bauer (2023). The Global Digital Technology Space and Its Relations to Digital Inequalities. Pre-conference on New Frontiers in Global Digital Inequalities Research. 73<sup>rd</sup> Conference of the International Communications Association, Toronto, 25 May 2023.
- Braesemann, F., Krell, T., Friederici, N., Bauer, J.M., & Teutloff, O. (2022). The technology space conditions the digital development of nations. Paper presented at the Conference of the Society for the Advancement of Socio-Economics (SASE), Amsterdam, June 9-11.

## **4. MATURE AND COMPLETED PROJECTS**

Data collection and analysis for the following projects has been concluded but additional articles and book chapters are under review and in preparation. For a list of publications please check <https://quello.msu.edu/publications>.

### **4.1. Cybersecurity Capacity Building**

William Dutton continues his role as chair of the Social and Cultural Dimension of the Oxford Martin Institute's Global Cybersecurity Capacity Center at the University of Oxford. He is working on the specific notion of a cybersecurity 'mindset' with papers of his own and with Ruth Shillair. The research on the impact of cyber security capacity, based on a comparative analysis of 120 nations, is featured in a chapter of the 2<sup>nd</sup> edition of *Society and the Internet* by Oxford University Press. In addition, several journal articles and many conference presentations have come out of the project. This work is supported by the Foreign and Commonwealth Office in the UK, along with partners from other nations.

#### Publications

Shillair, R., Esteve-González, P., Dutton, W.H., Creese, S., Nagyfejeo, E., Von Solms, B. (2022). National Level Evidence-Based Results, Challenges, and Promise, *Computers & Security*, <https://doi.org/10.1016/j.cose.2022.102756>.

Creese, S., Dutton, W.H., Esteve-Gonzalez, P. & Shillair, R. (2021). Cybersecurity Capacity Building: Cross-National Benefits and International Divides. *Journal of Cyber Policy*, 6(2), 214-235. <https://doi.org/10.1080/23738871.2021.1979617>.

## 4.2. Social Tolerance and Communication Technologies

This project focuses on how the use of new communication technologies, such as social media and mobile phones, affects the durability of relationships, including intergenerational ties (e.g., child-parent-grandparent relations), exposure to other people's opinions and background, and how this exposure is related to outcomes such as social tolerance. This work tests a new theory in the study of community, that modern technologies facilitate persistent contact and pervasive awareness of social ties. Due to persistence, relationships may be less transitory than in the recent past. This research expands our understanding of how the use of innovative technologies is related to the supportive nature of people's communities, the communication of diverse information, and interaction that could help counter the loss of social capital in contemporary communities. These processes and trends can increase social cohesion and tolerance, thus improving the well-being of individuals and society. Keith Hampton is leading this project, with funding from the NSF.

## 4.3. Threats from Ideologically Motivated Cyber Attackers

This research project led by Tom Holt (Criminal Justice), Arun Ross (Computer Science), Ruth Shillair (Quello Center), and Johannes M. Bauer (Quello Center) at Michigan State University and a team of collaborators at Arizona State University is examining an extensive data set documenting cyberthreats posed by politically motivated attackers. Ideologically driven attackers do not follow the monetary logic of financially motivated cybercriminals. Whereas there is rich research in the economics of cybercrime on profit-seeking cybercriminals, the strategies of politically motivated attackers are poorly understood, and defenses are often weak. We go beyond the prevailing machine learning approaches and develop a better system to identify such attacks and prevention strategies. The project is funded by contracts with Arizona State University and the Department of Homeland Security (DHS). We were invited to submit an additional round of funding. Additional funding will be sought from the National Science Foundation (NSF). The project has generated several conference presentations and two papers are currently under review at peer-reviewed venues.

### Publications

- Banerjee, S.; Swearingen, T.; Shillair, R.; Bauer, J.M.; Holt, T.J.; & Ross, A. (2021). Using machine learning to examine cyberattack motivations on web defacement data. *Social Science Computer Review*. Published online on 23 February 2021, DOI.
- Holt, T.J.; Lee, J.R.; Freilich, J.D.; Chermak, S.M.; Bauer, J.M.; Shillair, R. & Ross, A. (2020) An exploratory analysis of the characteristics of ideologically motivated cyberattacks, *Terrorism and Political Violence*, DOI: [10.1080/09546553.2020.1777987](https://doi.org/10.1080/09546553.2020.1777987).

## 4.4. Improving the Quality of Broadband Data

This project started with comments submitted to the National Telecommunications and Information Administration (NTIA) in July 2018, in collaboration with Merit Network seeking input on improved methods for measuring broadband availability and quality. We proposed to use a crowd-sourcing inspired mechanism to collect individual level data and to combine it with complementary methods to reach the unconnected. From these comments, Merit developed a measurement framework consisting of an online speed test, a survey instrument, and a second information gathering channel to obtain information from the unconnected.



## **4.5. Quello Search Project**

This study examined public political opinions by asking Internet users how they use search, social media, and other important media, for political information, and what difference it makes for them. Led by William H. Dutton, the research team conducted an online survey of stratified random samples of Internet users in seven nations, including Britain, France, Germany, Italy, Poland, Spain, and the United States. For a full list of publications related to this project see <https://quello.msu.edu/research/quello-search-project/>.

## **4.6. Broadband to the Neighborhood in Detroit**

This project investigated the degree that neighborhoods in Detroit are disconnected from the Internet and what could be done to increase digital equity. Working in collaboration with the Wayne State University Center for Urban Studies, we conducted 525 telephone surveys with residents across three Detroit neighborhoods and conducted three focus groups. The team completed data collection in December of 2017 and has since published several articles based on the research.

# **5. COMMUNITY AND OUTREACH**

## **5.1. Outreach and Public Service**

We were involved in numerous outreach activities at the local, state, and national level, including the Ingham County Broadband Task Force, working groups by the U.S. Department of Education, and Opportunity Broadband, an emerging national coalition promoting digital inclusion and innovation. We have intensified our collaboration with the Pew Charitable Trust and several research centers across the country, including the University of Southern California, the University of Texas at Austin, and Carnegie-Mellon University.

## **5.2. Quello Center Policy Briefs**

In March 2020, we launched Quello Center Policy Briefs, a series of brief documents synthesizing longer research contributions intended for decision makers. See <https://quello.msu.edu/policy-briefs/>.

## **5.3. In the Media**

In response to increasing coverage in news and other online events, we added a new page to our website. See <https://quello.msu.edu/in-the-media/>.

## **5.4. Video Library**

We have steadily grown our library of archived talks and short interviews with our speakers, archived on Vimeo (see <https://vimeo.com/quellocenter>) and YouTube (<https://www.youtube.com/channel/UCeGcQFBPA0wb-OmoYwgUfEQ>).

## **5.5. Online Presence**

If you have not already done so, please:

- Check out the Quello Center website at <https://quello.msu.edu/>.
- Like our Facebook page at <https://www.facebook.com/QuelloCenter/>.

## 5.6. SSRN E-Journal

In addition, we have an online working paper archive on the Social Science Research Network (SSRN), currently featuring more than 100 working papers and reports. See: <https://www.ssrn.com/link/Quello-Center-PUB.html>

## 6. SELECTED PUBLICATIONS AND PRESENTATIONS<sup>1</sup>

### 6.1. Journal Articles and Conference Proceedings

**Bauer, J.M.** (2023). Federal-Local Realignment of Broadband Policy and Digital Equity in the United States. 2023 Urban Affairs Association Conference, Nashville, TN, April 26-29, 2023.

**Blank, G., & Reisdorf, B.** (2023), Digital inequalities and public health during COVID-19: Media dependency and vaccination, published online on 12 January 2023, *Information Communications and Society*. <https://doi.org/10.1080/1369118X.2023.2166356>.

**Bauer, J.M.** (2022). Toward new guardrails for the information society. *Telecommunications Policy*, 102350. Published online April 6, 2022. <https://doi.org/10.1016/j.telpol.2022.102350>.

**Hampton, K.N. & Shin, I.** (2022). Disconnection More Problematic for Adolescent Self-Esteem than Heavy Social Media Use: Evidence from Access Inequalities and Restrictive Media Parenting in Rural America, *Social Science Computer Review*, published online August 5, 2022. Download at <https://doi.org/10.1177/08944393221117466>.

**Prado, T.S. & Bauer, J.M.** (2022). Big Tech Platform Acquisitions of Start-ups and Venture Capital Funding for Innovation. *Information Economics and Policy*. 59, June, 100973. <https://doi.org/10.1016/j.infoecopol.2022.100973>.

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Creese, S., **Dutton, W.H.**, Esteve-Gonzalez, P. & **Shillair, R.** (2021). Cybersecurity Capacity Building: Cross-National Benefits and International Divides. Forthcoming in the *Journal of Cyber Policy*. <https://doi-org.proxy1.cl.msu.edu/10.1080/23738871.2021.1979617>.

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<sup>1</sup> In reverse chronological order within each subsection.

- Shin, I., & Hampton, K.N.** (2021). New Media Use and the Belief in a Just World: Awareness of Life Events and the Perception of Fairness for Self and Injustice for Others. *Information, Communication & Society*, 1-17. <https://doi.org/10.1080/1369118X.2021.1950804>.
- Hampton, K.N., Robertson, C.T., Fernandez, L., Shin, I. & Bauer, J.M.** (2021). How variation in Internet access, digital skills, and media use are related to rural student outcomes: GPA, SAT, and educational aspirations. *Telematics and Informatics* 63, 101666, <https://doi.org/10.1016/j.tele.2021.101666>.
- Reisdorf, B.C., Blank, G., Bauer, J. M., Cotten, S., Robertson, C.T., & Knittel, M.** (2021). Information Seeking Patterns and COVID-19 in the United States. *Journal of Quantitative Description: Digital Media*, 1. <https://doi.org/10.51685/jqd.2021.003>
- Prado, T.S. & Bauer, J.M.** (2021). Improving broadband policy design using market data: A general framework and application to Brazil, *Telecommunications Policy*, 45(5), 102111, [DOI](https://doi.org/10.1016/j.telpol.2021.101988).
- Banerjee, S.; Swearingen, T.; **Shillair, R.; Bauer, J.M.**; Holt, T.J.; & Ross, A. (2021). Using machine learning to examine cyberattack motivations on web defacement data. *Social Science Computer Review*. Published online on 23 February 2021, [DOI](https://doi.org/10.1016/j.telpol.2021.101988).
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- Feijóo, C.; Kwon, Y.; **Bauer, J.M.**; Bohlin, E; Howell, B.; Jain, R.; Potgieter, P.; Vu, K.; Whalley, J.; & Xia, J. (2020). Harnessing AI to increase wellbeing for all: The case for a new technology diplomacy, *Telecommunications Policy*, 44(6), 101988, <https://doi.org/10.1016/j.telpol.2020.101988>.
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- Reisdorf, B., Fernandez, L., Hampton, K.N., Shin, I., & Dutton, W.H.** (2020). Mobile Phones will not Eliminate Digital and Social Divides. *Social Science Computer Review*, published online March 2020. <https://doi.org/10.1177/0894439320909446>.
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## 6.2. Books and Chapters

- Bauer, J.M.** & Latzer, M. (2024). Co-evolution: Applications and Implications for Governance Research in Media and Communication Studies. In: R. Mansell, M. Puppis, & H. van der Bulck (eds.), *Handbook of Media and Communication Governance*. Cheltenham, UK & Northampton, MA: Edward Elgar.
- Bauer, J.M., & Prado, T.S.** (2023). Digital innovation: An Information-Economic Perspective. In D. R. Raban & J. Włodarczyk (eds.), *The Elgar Companion to Information Economics*. Edward Elgar
- Bauer, J.M.** (2022). A framework for 5G and 6G market design. In E. Bohlin & F. Cappelletti (eds.), *Europe's future connected: Policies and challenges for 5G and 6G networks* (pp. 20-30), Brussels, Belgium: European Liberal Forum.
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### 6.3. Book Reviews

- Bauer, J. M.** (2022). Review of Christopher Ali, *Farm Fresh Broadband: The Politics of Rural Connectivity*, MIT Press, 2021. *Journal of Digital Media & Policy*, 13(1), 143-146. [https://doi.org/10.1386/jdmp\\_00099\\_5](https://doi.org/10.1386/jdmp_00099_5).
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### 6.4. Technical Reports

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- Bauer, J.M.** (2023). US leadership in digital platform policy. AEI Digital Platforms and American Life Project. Washington, DC, American Enterprise Institute. <https://platforms.aei.org/author/jbauer/>
- Reisdorf, B.C., Blank, G., Cotten, S., Argyris, A., Robertson, C.T., Knittel, M., & Bauer, J.M.** (2021). Overcoming COVID-19 Vaccine Hesitancy. *Quello Center Policy Brief* 02/21.

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**Hampton, K. N., Fernandez, L.H., Robertson, C.T., & Bauer, J. M. (2020).** Broadband and Student Performance Gaps. James H. and Mary B. Quello Center, Michigan State University. 3 March 2020, DOI.

## 6.5. Recent and Upcoming Presentations

**Bauer, J.M., Stocker, V., & Pourdamghani, A. (2023, June).** Innovation Dynamics in the Internet Ecosystem and Digital Economy Policy. Prepared for presentation at the European Conference of the International Telecommunications Society, Madrid, Spain.

**Prado, T.S. (2023, June).** Assessing the Market Power of Digital Platforms: An Experimental Investigation of the Online Video Market. Prepared for presentation at the European Conference of the International Telecommunications Society, Madrid, Spain.

**Bauer, J.M.; Knittel, M.; Ma, W.; Shillair, R.J.; & Blank, G. (2023, May).** Formation and fragmentation of mental models in heterogeneous media ecosystems during times of complex crisis. 73rd Annual Conference of the International Communication Association-Media Sociology Post-conference.

**Braesemann, F.; Rottenkolber, A.; Teutloff, O.; & Bauer, J.M. (2023, May).** The Global Digital Technology Space and Its Relations to Digital Inequalities. Pre-conference on New Frontiers in Global Digital Inequalities Research. 73rd Conference of the International Communications Association, Toronto.

**Prado, T.S. (2022, August).** Safeguarding Competition in Digital Markets: A Comparative Analysis of Emerging Policy and Regulatory Regimes. Presented at the 50th Research Conference on Communication, Information, and Internet Policy (TPRC 50) Available at SSRN: <https://ssrn.com/abstract=4137588> or <http://dx.doi.org/10.2139/ssrn.4137588>.

**Hampton, K.N., & Shin, I. (2022, May).** Disconnection is More Problematic for Adolescent Self-Esteem Than Heavy Social Media Use: Digital Inequality, Restrictive Parenting, and the Relationship to Time Rural Youth Spend with Friends and Family. Presented at the 72nd Annual Conference of the International Communication Association. Hybrid Conference. Paris.

**Prado, T.S. (2022).** Safeguarding Competition in Digital Markets: A Comparative Analysis of Emerging Policy and Regulatory Regimes. Presented at the Conference of the International Telecommunications Society 2022. Gothenburg, Sweden.

**Knittel, M. (2022, January).** How an Online Health Support Community Responded to the COVID-19 Crisis," Paper to be presented at the Hawaii International Conference on System Sciences (HICSS) 2022.

**Hampton, K.N., & Bauer, J.M. (2021, November).** The Social Side of Building Fiber: Implications for Middle and High School Students Academic Performance and Self-Esteem. Michigan Universities Network Research Collaboration Summit. Merit Networks. Ann Arbor, MI.

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- Hampton, K.N.; Robertson, C.T.; Fernandez, L.H.; Shin, I.; & Bauer, J.M.** (2021, May). Beyond Equitable Access: Everyday Use and Digital Skills for Rural Students' Academic Outcomes. IEEE International Workshop on Communications Quality and Reliability. Virtual Conference.
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## **6.6. Work in Progress**

**Prado, T.S. & Bauer, J.M.** (in progress). Emerging Policy and Regulatory Regimes for Digital Platforms: Lessons for U.S. Competition Policy.