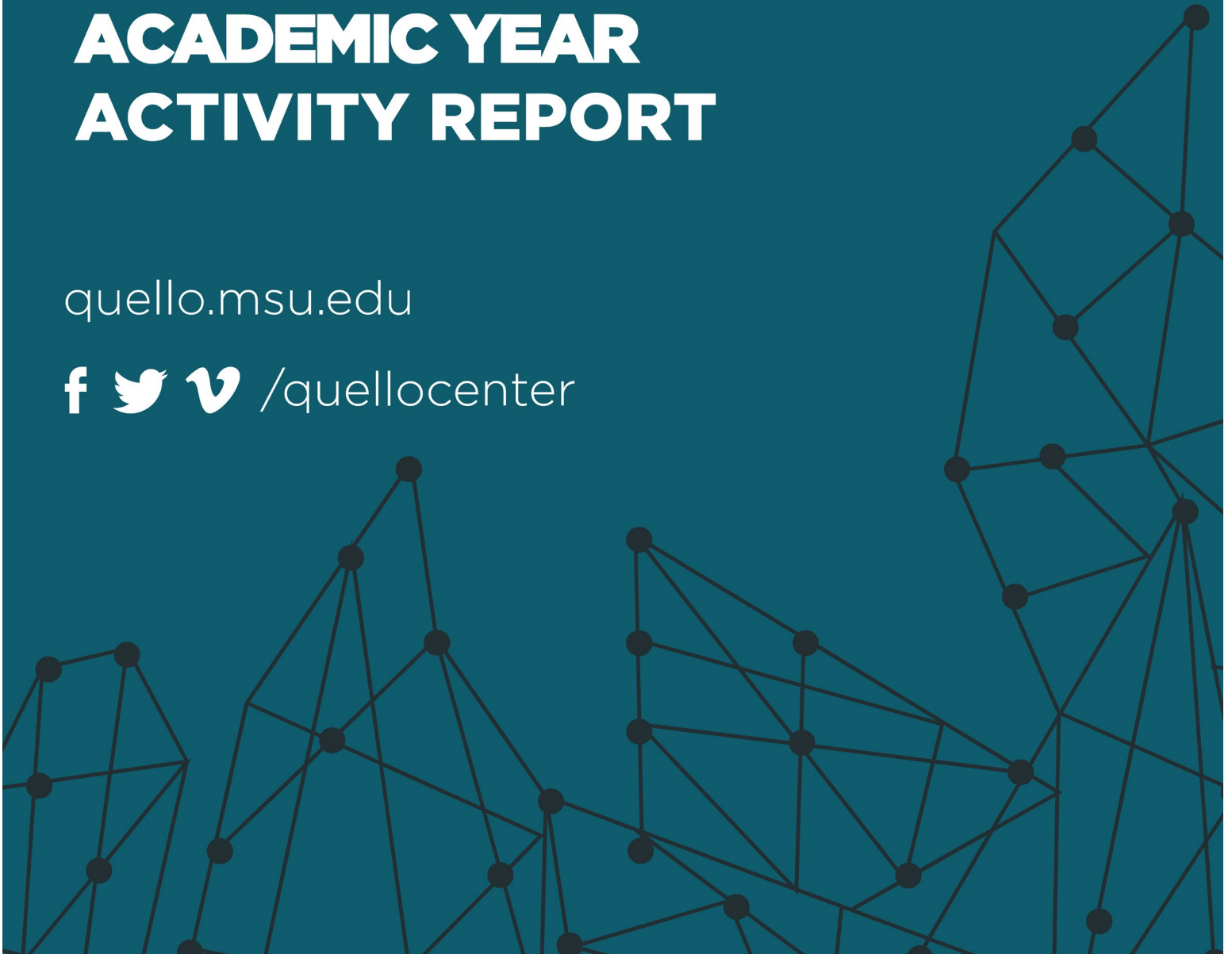# quello center

MEDIA & INFORMATION POLICY

2019-2020
ACADEMIC YEAR
ACTIVITY REPORT

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Mission

The James H. and Mary B. Quello Center, founded in 1998, is among the top five U.S. academic centers working in the area of communication, media and information policy. It serves as a non-partisan research and outreach center with the goal to stimulate and inform public debate. Our work critically examines the role of technology, policy and regulation for citizens, communities, and society. The Center is affiliated with the Department of Media and Information and the College of Communication Arts and Sciences at Michigan State University.

Research Programs

	ICTs & Society	Projects critically examine the effects of ICTs on society, pressing issues faced by citizens, and how these issues translate to societal changes. We analyze the role of social media on political opinions and viewpoints or on tolerance.
	Digital Inequalities	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.
	Digital Innovation	Projects address principles of sound 5G policy that will help harness the tremendous potential of next-generation wireless innovation for business, government, and society.
	Digital Futures	Work in this area contributes to the development of appropriate policy responses to current and emerging challenges, including digital platform power, privacy, surveillance, data ethics, and the governance of AI.
	Internet Governance	Research projects in this program currently focus on behavioral and economic aspects of cybersecurity (e.g., ideologically motivated attackers), network neutrality, and foundations of Internet governance.
	Cybersecurity	Together with researchers in computer science and criminal justice we explore the economic, legal, behavioral, technical and policy aspects of cybersecurity, cybercrime, and cyberterrorism.

Leadership Team

Director, Johannes M. Bauer

Director of Academic Research, Keith N. Hampton

Quello Center Advisory Board

Marjory S. Blumenthal, *Senior Policy Researcher, RAND Corporation*

Vincent Curren, *Principal, Breakthrough Public Media Consulting*

Roderick S. Coy, *Of Counsel, Clark Hill*

William H. Dutton, *Professor Emeritus at the University of Southern California, Senior Fellow, Oxford Internet Institute (OII) and former Quello Center Director*

Prabu David, *Dean, College of Communication Arts and Sciences, MSU*

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Laura DeNardis, *Professor and Interim Dean, School of Communication, American University*

David L. Donovan, *President and Executive Director, New York State Broadcasters Association, Inc.*

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Brian F. Fontes, *Chief Executive Officer for the National Emergency Number Association (NENA)*

Richard D. McLellan, *McLellan Law Offices PLLC and Trustee MSU College of Law*

Michael R. Nelson, *Senior Fellow and Director, Technology and International Affairs Program, Carnegie Endowment for International Peace*

Eli M. Noam, *Professor of Economics and Finance, Columbia Business School; Paul Garrett Chair in Public Policy and Business Responsibility and Director, Columbia Institute for Tele-Information (CITI)*

Robert M. Pepper, *Head of Global Connectivity Policy and Planning, Facebook*

Karole White, *President and CEO, Michigan Association of Broadcasters*

Steven S. Wildman, *Professor Emeritus, Michigan State University, and former Director of the Quello Center*

Richard E. Wiley, *Chairman Emeritus, Wiley*

CONTENTS

EXECUTIVE SUMMARY

The *Broadband Gap and Student Performance* report, released in March 2020, was widely distributed and read. We are developing follow-up work together with the MSU College of Education and our external partners. Since the last Advisory Board meeting, the grant from the Knight Foundation, to study information seeking, updating and verification from traditional and online media sources, has been awarded.

In addition, we received a generous gift from Facebook to study innovation in digital platform ecosystems. Several additional proposals to foundations have been submitted and are in preparation. We placed three papers in top journals in the field and several others are under review. In the fall, with continuing constraints on travel and in-person interactions, we will launch the *Digital Futures Workshop* in an online, virtual format.

Quello Center affiliates continued to disseminate work developed from grant and contract-supported research. Notable peer-reviewed publications during the past six months include articles in *Telecommunications Policy*; the *Journal of Management and Information Systems*; *Information, Communications and Society*; and *The International Journal of Press/Politics*. Several book chapters and presentations to professional audiences such helped disseminate our work to practitioner groups. A second research report, part of the MAPPR grant, that focuses on measures to overcome the broadband gap and its consequences for educational outcomes was completed over the summer and will be disseminated shortly.

The COVID-19 constraints forced us to postpone several planned talks to the fall semester and to an online format. With the indefinite suspension of all but essential travel by Michigan State University, we expect most of our activities during the 2020-2021 fiscal year to take place online. We will resume our speaker series in October and also convene sessions of the Digital Futures Workshop online. This is in line with our efforts to also network more strongly with major national and international centers in our field.

We have continued to work on several initiatives to further increase the visibility and relevance of our work. Building on the experience with the Broadband Gap project, we have helped Merit Network to develop a tool that greatly facilitates a highly granular assessment of the availability and quality of broadband connectivity. The approach has been used in a project by Washtenaw County and is currently applied by Wayne State University to help overcome digital divides among its students. The approach is scalable and applicable to state and national level information collection. We have disseminated aspects of our work in online panel discussions, webinars, and training sessions for national and international experts.

Following through on plans discussed in May, we have established collaborations with the Oxford Internet Institute (OII), the Weizenbaum Institute in Berlin, Germany (the former German Internet Institute). We are working on similar collaborative agreements with centers in the United States and other parts of the world. This will support our goals of addressing policy issues with an international or global perspective (e.g., the current discussions about responding to the market power of digital platforms) with experts from other regions.

1. SPEAKER SERIES AND POLICY DISCUSSIONS

One of our missions is to stimulate discussion of important and controversial issues. 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 (quello.msu.edu/tag/video), or stream them live to a national and global audience (streamed talks are also placed in our video archive). Notable Center and co-sponsored talks and events since the last advisory board meeting include:

- **Karen Mossberger**, Arizona State University (upcoming, October 2020)
- **Lanier Holt**, Ohio State University. Is there anything that can be done? Examining the effect media messages have on race and perception.
- **Amy Gonzalez**, UC Santa Barbara. Importance of Access to Digital Technology for Building and Maintaining Social Capital and Quality of Life.
- **Edward Oughton**, Oxford University, Spatial data analytics for 5G assessment.
- **Nick Couldry**, London School of Economics and **Ulises A. Mejias**, Oswego State University of New York Colonized by Data: The Costs of Connection.

2. PROJECTS IN EARLY STAGES OF DEVELOPMENT

2.1. Misinformation, Incomplete Knowledge and Polarization

This project builds on the Quello/Google information seeking project and expands it with questions that arise in the context of the COVID-19 pandemic. The dynamics and novelty of the crisis necessitate that individuals and organizations make choices based on incomplete, changing and often deliberately misleading information. The goal of this project is to model how, under these conditions, individuals seek and verify political and health information. Moreover, we are interested in understanding the interplay between (mis)information, incomplete knowledge, and affective polarization. We propose to examine these issues empirically with representative survey data collected in the United States and the United Kingdom.

The project examines 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 about political and health topics related to COVID-19? (4) Do socio-demographic factors, information sources, and the updating rules used by individuals influence affective polarization?

We are currently working with the Knight Foundation on grant support for this project. Proposals seeking funding have also been sent to public and private foundations.

2.2. Policies to Facilitate Innovation in 5G and Platform Ecosystems

This multi-year project seeks to inform policies toward advanced ICTs in the United States, with an emphasis on 5G wireless services and platform ecosystems. 5G wireless services will constitute an integral part of the future gigabit communication network infrastructure. Platform ecosystems, which overlap with many areas of 5G services, have been the target of much criticism but the drivers of innovation in these markets are only poorly understood. Projects in this area will build

upon the research on complementary innovation, innovation ecosystems, and systemic innovations to examine how policy choices affect innovation outcomes. A project proposal to the National Science Foundation was returned for revisions and will be re-submitted in August 2020. A second grant proposal was sent in March 2020 to a private foundation. A third proposal to the Sloan Foundation is in preparation, together with researchers in the Economics Department at MSU and a project partner at MIT.

2. ONGOING PROJECTS

3.1. Broadband Gap and Student Performance

Launched 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 to disentangle these factors.
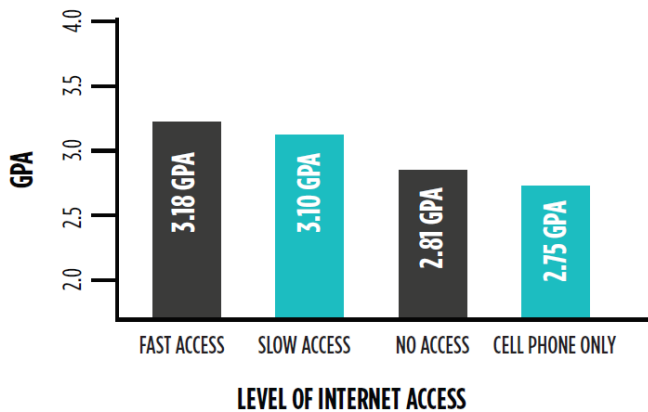
Independently of socio-demographic factors, students who do not have access to the Internet from home or are dependent on a cell phone for access perform lower on a range of metrics, including digital skills, homework completion, and grade point average. They are also less likely to intend on attending college or university. A deficit in digital skills compounds many of the inequalities in access and contributes to students performing lower on standardized tests such as the SAT, and being less interested in careers related to science, technology, engineering, and math. Thus, students without high-speed access experience short-term and long-term disadvantages.

Data for this project are based on a survey of students in grades 8-11 from fifteen predominately rural Michigan school districts. Between May and June 2019, 3,258 students from fifteen school districts in twenty-one schools across 173 classrooms completed the project survey; they represented 70.6% of students aged 13 and older in grades 8-11 in the participating districts. Following the survey, classroom teachers assigned students an optional homework assignment that consisted of an online speed test. Eight of the school districts that participated in this project also provided de-identified standardized student test scores that were matched with students' responses to the project survey.

Hampton, K. N., Fernandez, L., Robertson, C. T., & Bauer, J. M. *Broadband and Student Performance Gaps*. James H. and Mary B. Quello Center, Michigan State University. March 2020. https://doi.org/10.25335/BZGY-3V91.

Bauer, J. M., Hampton, K. N., Fernandez, Z., & 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.

More information at https://quello.msu.edu/broadbandgap

3.2. 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 and survey framework consists of an online speed test and survey as well as a second information gathering channel, operating as a paper or phone survey, to obtain information from the unconnected. In addition, complementary analytical services are available that allow a geographically highly granular assessment of the availability and adoption of broadband.

The framework was tested in two pilots, the Performance Gap project mentioned above and a second project in Washtenaw County. The measurement approach that can be scaled to reach populations across and beyond Michigan middle and high school students. Based on these two pilots, a generic framework is being developed. Considering that any source of data will have strengths and weaknesses, strategically using multiple sources of data can advance the quality of data to inform decision making. Our approach has the potential to be scaled up and sustained, possibly with the guidance and oversight of a National Advisory Group that will include federal agency representatives, industry, and current data source representatives. As the FCC is seeking to improve data collection and the verification of information, our framework offers a practical and open source approach to improve broadband connectivity data.

Quello Center and Merit Network (2018, July). *Citizen Enabled Advances in Broadband Availability Data*. Submitted July 16, 2018, to the U.S. Department of Commerce National Telecommunications and Information Administration (NTIA), Docket No. 180427421–8421–01 RIN 0660–XC042.

2.3. Understanding 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 possible 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.

Thomas J. Holt, Lee, Jin Ree, Freilich, Joshua D., Chermak, Steven M., Bauer, Johannes M., Shillair, Ruth & Ross, Arun (2020) An exploratory analysis of the characteristics of ideologically motivated cyberattacks, *Terrorism and Political Violence*, DOI: [10.1080/09546553.2020.1777987](10.1080/09546553.2020.1777987).

2.5. 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 new technologies facilitate persistent contact and pervasive awareness of social ties. As a result of persistence, relationships may be less transitory than in the recent past. This research expands our understanding of how the use of new 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 have the potential to increase social cohesion and social tolerance, thus improving the well-being of individuals and society. Keith Hampton is leading this project, with funding by the NSF.

3. MATURE PROJECTS

Data collection and analysis for the following projects has largely been concluded but additional articles and book chapters are under review and in preparation.

3.1. Quello/Google 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.

Numerous papers and presentations have resulted from this work including: papers that review broad themes related the project; studies focused on trust in different sources of information about politics and policy; cross-national comparative analysis of search, seeking to explain cross-national differences; a study of the role of search in our evolving media ecology; analysis of the role of search and the Internet in populist attitudes; analysis of democratic digital inequalities that would examine how education and motivation are related to searching for and sharing political news; and analysis of democratic digital inequalities that would examine how education and motivation are related to searching for and sharing political news.

For a full list of publications related to this project see https://quello.msu.edu/research/quello-google-search-project/.

3.2. Digital Inequalities: 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. In February, this work was presented at a Martin Luther King Day public forum hosted by the University of Michigan Detroit Center. Findings were also presented in September 2019 at the *47th Annual Research Conference on Communications, Information, and Internet Policy* in Washington D.C. and in August at the 2019 Annual Meeting of the *American Sociological Association*. A paper entitled 'Urban Myths and Realities: A Detroit Case Study' has been published in the journal *Information, Communication and Society*. Additional papers are currently under review.

3.3. ICTs and the Prisoner Reentry Process

With seed funding from the MSU S3 and MSU LAP grants, this project investigated if and how information and communication technologies currently feature in the prisoner reentry process. The project examines to what extent parolees are currently using ICTs and for what purposes, as well as how ICTs could potentially improve the reentry process for parolees and parole officers alike. Together with colleagues from the School of Criminology and Criminal Justice and the School of Social Work at MSU, the research team has conducted focus groups with parolees between April and June 2018. The goal of the study is to develop a framework in which ICTs could be used to improve reentry outcomes for parolees. The findings will inform a larger grant proposal to the National Science Foundation (NSF) and the National Institute of Justice (NIJ).

3.4. Cybersecurity Capacity Building

Bill 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. Their research on the impact of cyber security capacity, based on a comparative analysis of 120 nations, and is featured in a chapter of the 2nd edition of *Society and the Internet* by Oxford University Press, another article is currently under review at *Journal of Information Policy*. This work is supported by the Foreign and Commonwealth Office in the UK, along with partners from other nations.

4. COMMUNITY AND OUTREACH

4.1. Quello Center Policy Briefs

In March 2020, we launched the inaugural Quello Center Policy Brief, a series of brief documents synthesizing longer research contributions that is intended for decisionmakers. See https://quello.msu.edu/policy-briefs/.

4.2. In the News

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-news/.

4.3. Live Streams

We stream featured lectures in addition to making archive videos available. See an example here: http://quello.msu.edu/laura-denardis-the-internet-in-everything-video/

4.4. Video Library

We have steadily grown our library of archived talks and short interviews with our speakers. See an example here: https://www.youtube.com/watch?v=4GVZYpuL6HI&feature=youtu.be

4.5. 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/.
- Sign up for occasional Quello Center updates at: http://quello.msu.edu/subscribe/.

4.6. SSRN Working Paper Series

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

5. RECENT PUBLICATIONS AND PRESENTATIONS

5.1. Journal Articles and Conference Proceedings

Thomas J. Holt, Lee, Jin Ree, Freilich, Joshua D., Chermak, Steven M., **Bauer, Johannes M.**, Shillair, Ruth & Ross, Arun (2020) An exploratory analysis of the characteristics of ideologically motivated cyberattacks, *Terrorism and Political Violence*, DOI: 10.1080/09546553.2020.1777987.

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*, published online 6 May 2020, https://doi.org/10.1016/j.telpol.2020.101988.

Hong, S. J., **Bauer, J. M.**, Lee, K., Granados, N. F. (2020). Drivers of supplier participation in ride-hailing services, *Journal of Management and Information Systems*, in print.

Robertson, C.T., & Mourão, R. (2020). Faking alternative journalism? An analysis of self-presentations of "fake news" sites. *Digital Journalism*, published online 25 March 2020, DOI: 10.1080/21670811.2020.1743193.

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.

Robertson, C. T., Mourão, R. R., & Thorson, E. (2020). Who Uses Fact-Checking Sites? The Impact of Demographics, Political Antecedents, and Media Use on Fact-Checking Site Awareness, Attitudes, and Behavior. *The International Journal of Press/Politics*, 194016121989805. DOI.

Aguelakakis, N., & **Yankelevich, A.** (2019). Collaborate or consolidate: Assessing the competitive effects of production joint ventures. *Economic Inquiry, 57*(1), 73-84.

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Astorne-Figari, C., López, J. J., & **Yankelevich, A.** (2019). Advertising for consideration. *Journal of Economic Behavior & Organization, 157*, 653-669.

Dutton, W., and **Fernandez, L.** (2018/19), 'How Susceptible Are Internet Users?', *InterMEDIA*, December/January 2018/19 46(4): 36-40.

Dutton, W., Creese, S., **Shillair, R.**, & Bada, M. (2019). Cybersecurity Capacity: Does It Matter? *Journal of Information Policy*, 9, 280-306.

Fernandez, L., Reisdorf, B. C., & Dutton, W. H. (2019). Urban Internet myths and Realities: A Detroit case study. *Information, Communication & Society,* 1–22, published online 5 June 2019, DOI: [10.1080/1369118X.2019.1622764](10.1080/1369118X.2019.1622764).

Hampton, K. N. (2019). Social Media and Change in Psychological Distress over Time: The Role of Social Causation. *Journal of Computer-Mediated Communication.*

Mack, E. A., **Dutton, W. H.,** Rikard, R. V., **& Yankelevich,** A. (2019). Mapping and measuring the information society: A social science perspective on the opportunities, problems, and prospects of broadband Internet data in the United States. *The Information Society, 35*(2), 57–68.

Marin, A., & **Hampton, K. N.** (2019). Network Instability in Times of Stability. *Sociological Forum,* 34(2): 313-336.

Mourão, R. R., & **Robertson, C. T.** (2019). Fake News as Discursive Integration: An Analysis of Sites That Publish False, Misleading, Hyperpartisan and Sensational Information. *Journalism Studies,* 20:14, 2077-2095, DOI: [10.1080/1461670X.2019.1566871](10.1080/1461670X.2019.1566871)

Reisdorf, B. C., Yankelevich, A., Shapiro, M., & Dutton, W. H. (2019). Wirelessly bridging the homework gap: Technical options and social challenges in getting broadband to disconnected students. *Education and Information Technologies.*

Robertson, C. T., Dutton, W. H., Ackland, R., & Peng, T.-Q. (2019). The democratic role of social media in political debates: The use of Twitter in the first televised US presidential debate of **2016. *Journal of Information Technology & Politics*, 1–14.**

5.2. Books and Chapters

Creese, S., **Shillair, R.**, Bada, M., **Reisdorf, B. C**., Roberts, T., & **Dutton, W. H.** (2019). The Cybersecurity Capacity of Nations. In M. Graham & W. H. Dutton (Eds.), *Society and the Internet: How Networks of Information and Communication are Changing our Lives* (2nd ed.). Oxford: Oxford University Press.

Dutton, W. H. (2019). Wired City. In A. M. Orum (Ed.), *The Wiley Blackwell Encyclopedia of Urban and Regional Studies* (1st ed.).

Dutton, W. H., Reisdorf, B. C., Blank, G., Dubois, E., & **Fernandez, L.** (2019). The Role of Search and Social Media in Shaping Public Opinion. In M. Graham & W. H. Dutton (Eds.), *Society and the Internet: How Networks of Information and Communication are Changing our Lives* (2nd ed.). Oxford: Oxford University Press.

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Reisdorf, B. C., Blank, G., & **Dutton, W. H.** (2019). Internet Cultures and Digital Inequalities. In M Graham & W. H. Dutton (Eds.), *Society and the Internet: How Networks of Information and Communication are Changing our Lives* (2nd ed.). Oxford: Oxford University Press.

5.3. Book Reviews

Dutton, W. (2019), Internet Daemons: Digital Communications Possessed. Fenwick McKelvey. Minneapolis, MN: University of Minnesota Press, for *Journal of the Association for Information Science and Technology.*

5.4. Presentations

Bauer, J. M. (2020, January). *Regulatory Challenges of ICT Convergence.* Presented at the 44th PURC/World Bank International Regulatory Program, University of Florida, Gainesville, FL.

Bauer, J. M. (2019). Effects of Network Neutrality Regulation and Competition Policy on the Evolution of the Internet. Paper presented at the Conference of the International Association for Media and Communication Research (IAMCR) on Communication, Technology and Human Dignity: Disputed Rights, Contested Truths, Madrid, Spain, July 7-11, 2019. Download.

Hong, S. J., **Bauer, J. M.**, Lee, K., Granados, N. F. (2020), Effects of Flexibility, Security, and Information Features on Supplier Participation in the Sharing Economy: An Empirical Study, Proceedings of the 2020 Hawaii International Conference on Information Science (HICSS 2020).

5.4. Technical Reports

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. 3 March 2020, DOI.

5.5. Work in Progress

Hampton, K. N., Fernandez, L., Robertson, C. T., Shin, I., Bauer, J. M. (2020). Digital Media and Human Capital in Rural America: Broadband Access, Digital Skills, and Excessive Media Use for GPA, SAT, and Educational Aspirations. Under Review.

Prado, T. S., & **Bauer, J. M.** (2020), Improving Broadband Policy Design Using Market Data, Revise and Resubmit.

Bauer, J. M. (2019). Technical, Economic, and Social Coordination Requirements of Internet-Based Innovation (July 21, 2019). Available on SSRN.

Bauer, J. M., & Bohlin, E. (2019). The Role of Regulation in 5G Market Design. Working paper. Available on SSRN.

Fernandez, L., **Shillair, R.** and **Reisdorf, B.**, Building Our Own Bridges: How a Distressed Urban Neighborhood Bridges the Digital Divide (July 26, 2019). Available on SSRN.

Reisdorf, B.C., Triwibowo, W., & Yankelevich, A. (under review). Laptop or Bust: How Lack of Technology Affects Student Achievement. *American Behavioral Scientist.*

Robertson, C. and **Fernandez, L.** and **Shillair, R**., The Political Outcomes of Unfriending: Social Network Curation, Network Agreeability, and Political Participation (July 24, 2019). Available on SSRN.

Shillair, R. and **Fernandez, L.**, Diversity Without Disagreeability: A Multi-National Examination of Social Networks and Participation in Political Dialog (July 25, 2019). Available on SSRN.