



**BERKMAN KLEIN CENTER**  
FOR INTERNET & SOCIETY AT HARVARD UNIVERSITY

**Annual Report**  
Academic Year 2016–2017

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## **I. Part One: Report of Activities**

### **A. Summary of Academic Year: 2016–2017**

#### **1. Executive Summary**

The 2016–2017 academic year has been transformative for the Berkman Klein Center for Internet & Society: It started with our renaming in recognition of a generous gift of \$15 million from Harvard Law School alumnus Michael Klein '67, and concluded with the launch of a large-scale interdisciplinary initiative on the Ethics and Governance of Artificial Intelligence, which brings together partners across Harvard in a newly formed partnership with the MIT Media Lab. In between, the Center launched a series of research initiatives, educational programs, and community and outreach efforts.

#### **Strengthening a diverse and inclusive community**

The heart of the Berkman Klein Center continues to be its world-class community of students, staff, fellows, faculty, and alumni. Inasmuch as we spent the past year redesigning our programs for fellows, faculty associates, and interns, the Center has become the intellectual home of an even larger cohort of scholars, designers, technologists, lawyers, entrepreneurs, activists, data scientists, and others. The Center's leadership and staff—supported by specialized University offices and services—have made significant efforts to strengthen the work and well-being of the Center by increasing the diversity of our network. Specifically, we have created new pathways and secured additional resources to bolster our diversity and inclusion initiative, including funding to support people from communities who are underrepresented in fields related to Internet and society.

We can also share important news with respect to the composition of our Board of Directors: In the spring of 2017, we announced the arrival of three new Directors: Ruth Okediji, formerly a Professor of Law at the University of Minnesota Law School, and Rebecca Tushnet, formerly a Professor of Law at Georgetown Law School, who both recently joined the Harvard Law School faculty; and Margo Seltzer, the Herchel Smith Professor of Computer Science at Harvard's John A. Paulson School of Engineering and Applied Sciences.

#### **Forging new collaborations and problem-solving**

Many of the Center's activities over the past academic year focused on the intersection of academic research and practice. One of the groundbreaking activities in this area was the Berkman Klein Assembly, a pilot program that gathered developers and tech industry professionals for a rigorous three-week course at Harvard, followed by a twelve-week collaborative development period to explore hard problems with running code. Made up of sixteen developers and tech industry professionals from various sectors—private, public, civil, academia—the cohort had a unique opportunity to collaborate and explore novel

solutions to deep problems in the area of digital security. The next iteration of the program will take place in 2018 and will be co-hosted together with the MIT Media Lab.

Another milestone in the Center's history, as noted above, is our leadership role in partnership with the MIT Media Lab in a newly launched \$27 million fund to conduct evidence-based research, provide guidance to decision-makers in the private and public sectors, and engage in impact-oriented pilot projects to bolster the use of AI and related technologies for the public good. The initiative is the next step in the years of work during which we and our partners have spent building capacity, expertise, and connections in this and related areas.

### **Informing decision-makers—and the public**

Translating knowledge from research into practice is not only at the core of the Center's new AI Ethics and Governance initiative but a common thread and strategic goal across many of the Center's projects, including several that have been undertaken in collaboration with the Cyberlaw Clinic. For instance, responding to a number of pressing challenges in areas such as cybersecurity, privacy, harmful speech, and open data, the Center's research teams engaged in a coordinated effort to provide a series of briefing papers aimed at building a bridge between academic research and policy making in the networked world by helping to identify opportunities in key areas related to digital technology and innovation. The series builds on the Center's commitment to exploring new ways to communicate and educate in the public interest. Another example of our recent work that translates research into an actionable format is the Transparency Toolkit, which we created in partnership with the Open Technology Institute at the New America Foundation. The purpose of the Toolkit is to make it easier for companies to create better transparency reports about government requests for user data.

As part of a long-term initiative aimed at creating an evidence base to inform decisions that shape the future of the Internet, over the past academic year the Center's Internet Monitor project documented the practice of Internet censorship around the world through empirical testing in forty-five countries of the availability of some of the world's most-trafficked and influential websites, in addition to country-specific websites. The study found evidence of filtering in twenty-six countries across four broad content themes: political, social, topics related to conflict and security, and Internet tools (a term that includes censorship circumvention tools as well as social media platforms). The research also explored the effects of encryption and the increased use of major platforms, including Facebook, Twitter, Medium, and Wikipedia, and assessed the challenges these trends create for state Internet censors operating filters at national network levels.

### **Leveraging a global, interdisciplinary network**

The Center continued to leverage its global and interdisciplinary community and institutional networks. In the 2016–2017 academic year, both Latin America and Asia were regional focuses. In collaboration with UNICEF and local partners, for instance, research teams at the Center continued to work on the use and adaptation of the Internet by traditionally marginalized youth across Latin America and the Caribbean. In Asia, the Berkman Klein Center teamed up with the Digital Asia Hub and collaborating universities to host a series

of working meetings and symposia in Hong Kong, South Korea, and Japan to explore questions related to the ethics and governance of AI from an Asian perspective.

The Global Network of Internet & Society Centers, which the Berkman Klein Center incubated in 2012, continues to play a key role in driving global research and facilitating interdisciplinary conversations across regions. One such networked research effort during the past academic year focused on harmful speech online, which has emerged as one of the central challenges for Internet policy experts, often pitting protections for freedom of expression online against the rights and interests of those who are subject to online harassment. Together with collaborators, we published a new set of publications and country reports from India, Brazil, and Colombia examining many of the issues surrounding harmful speech and potential avenues for addressing it.

In addition, we used the past academic year to begin a strategic planning effort to consider institutional priorities and the means to better realize them. This effort was precipitated by the opportunities afforded us by Mike Klein's unprecedented gift and subsequent renaming of the Center but was also driven by a recognition that healthy organizations need to periodically reevaluate their strategies and priorities. Based on internal and external conversations, we identified a series of strategic opportunities and operational priorities that will be implemented over the next academic year. We will continue to leverage the unique qualities of our interdisciplinary Center to write code to support our research, host activities to educate the public as well as private convenings of disparate voices, offer an intellectual platform for our international and diverse fellows community, and support educating students in the Cyberlaw Clinic to solve real world problems.

## **2. Research, Scholarship and Project Activities**

### **a. Areas of Inquiry—Research Program's Mission Statement**

As an interdisciplinary, University-wide center with a global scope, the Berkman Klein Center has an unparalleled track record of leveraging exceptional academic rigor to produce real-world impact. The Center is committed to pushing the edges of scholarly research, building tools and platforms that break new ground, and fostering active networks across diverse communities. Our vibrant, collaborative community of independent thinkers represents a wide range of philosophies and disciplines, making us a unique home for open-minded inquiry, debate, and experimentation. We are united by our commitment to the public interest.

We do these things with an interdisciplinary community who collaborate on data collection and analysis, elaborating on new methodological approaches to the study of digital phenomena, and opening our tools and scholarship through distributed and cooperative solutions. Substantial work includes research on privacy and cybersecurity; content regulation and censorship online; youth and media; ethics and governance of artificial intelligence; digital humanities; civic participation, public discourse, and media; Internet governance; open access; interoperability; digital health; harmful speech online; and digital finance, among other focal areas at the intersection of the Internet and society.

Research at the Center spans a range of activities that reflect our interdisciplinary foundation and constitution. Methodological approaches are drawn from a range of disciplines including legal and policy analysis, case studies, focus groups, surveys, social network analysis, and content analysis. The Center strives to produce research that is both academically rigorous and applicable to the most important questions and issues of the digital age. Producing top-caliber publications is a primary focus. The Center also invests resources in data collection, data aggregation, and developing new tools and platforms for the study of the Internet and society. Among the many examples are the Internet Monitor project, which collects, analyses, and visualizes data related to the health of the Internet; Media Cloud, a digital media analysis platform; and Lumen, a project that provides public access to takedown requests.

The combination of our fellows program, technical development team, academic research, and teaching in the Cyberlaw Clinic make the Berkman Klein Center unique among its peers.

## **b. Projects/Research & Scholarship**

### **Criminal Justice Debt Reform**

The National Criminal Justice Debt Initiative (NCJDI) is a project of Harvard Law School's [Criminal Justice Policy Program](#) (CJPP). Led by Mitali Nagrecha with help from former CJPP Executive Director Larry Schwartztol, the project's mission is to collect in one place, tag and codify, and make available all of the U.S. state-level statutes and regulations pertaining to criminal justice debt. To that end, the data is pulled together into a searchable and customizable website—the [50-State Criminal Justice Debt Reform Builder](#). This makes it available to the public, lawyers, journalists, activists, policy makers, and other stakeholders. The website was designed with extensive guidance and input from Jessica Yurkofsky of metaLAB and other metaLab members, and constructed with work by two outside developer firms: RedFin Solutions, which began the project, and Endpoint, which took over in January of 2017, bringing the project to completion. Adam Holland and Sebastian Diaz served as technical project management for the project, especially liaising between the outside developers and NCJDI staff. The beta version of the site was demonstrated to a large focus group of experts in the criminal justice debt field in mid-March 2017, and was made available to the public on April 14, 2017. CJPP staff continue to update and refine the project's underlying data. A second version of the site with more features is planned for late 2017/early 2018.

### **Cybersecurity**

Launched in early 2015, the Berklett Cybersecurity project's broad aim was to rethink the set of responsibilities related to foreign intelligence gathering and its role in promoting cybersecurity. The project is led by Faculty Director Jonathan Zittrain, former National Security Agency Director of Compliance John DeLong, former U.S. National Counterterrorism Center Director Matt Olsen, and cybersecurity expert Bruce Schneier, and it is supported by David O'Brien, Tiffany Lin, Samantha Bates, Mailyn Fidler, and Benjamin Sobel. The project regularly convenes a diverse group of security and policy experts—one that by all accounts is unlikely to exist anywhere else—to discuss a broad range of enduring problems of cybersecurity as it intersects with areas such as law enforcement, commercial regulation, liability, proposed legislation, technical standards, and company policies, along with the mainstays of

foreign intelligence, national security, and the public-private interface. Its goal is to foster straightforward, candid exchange among experts who do not usually have a chance to engage with each other, and ultimately it seeks to distill the novel insights and consensual opinions learned from these discussions and inject them into public discourse. Over the past year, the project convened six meetings with core members of the group and selected guests from industry and government. With the aid of the project's expanding leadership, along with the inclusion of more industry perspectives, rich discussions take place during meetings, and they cover an increasingly wide range of topics. The project team has found that over time meetings get past the usual talking points, swaying opinions within the group and challenging the members to consider alternative perspectives. Topics actively discussed over the last year include privacy and security in the Internet of Things, the vulnerabilities equities process, the software vulnerability ecosystem in the private sector, checks and balances on executive power in intelligence and cybersecurity, active defense and "hacking back," and cross border data access reform.

[\[https://cyber.harvard.edu/research/cybersecurity\]](https://cyber.harvard.edu/research/cybersecurity)

### **Ethics and Governance of Artificial Intelligence**

Over the past year, the Berkman Klein Center embarked upon a major joint effort with the MIT Media Lab to develop a range of activities, tools, and prototypes as anchor institutions for the Ethics and Governance of Artificial Intelligence Fund, a venture launched in January 2017 with an initial investment of \$27 million to support the evolution of AI in the public interest. It have since worked to form and strengthen human networks and institutional collaborations, building a platform where stakeholders working across disciplines, sectors, and geographies can meet, engage, learn, and share. The Center is leveraging its deep experiences across a wide range of topics in order to explore how its collective scholarship and knowledge can be brought to bear on emerging challenges with respect to AI.

Through research and engagement with collaborators, the Fund identified a few substantive areas to concentrate on that reflect diverse social challenges, the founding institutions' unique skills, and a strong sense of opportunities for real-world impact. These areas are:

1. **Autonomous vehicles**

As vehicles are increasingly automated, it has become imperative not only to improve these human-machine interactions but also to anticipate what they mean for the future of labor, explore how these vehicles will push the limits of existing governance frameworks, understand how they may reinforce existing biases, and identify the necessary forms of transparency needed to build new accident liability regimes.

2. **Social and criminal justice**

From forensic analysis to setting bail, sentencing, and parole, algorithms are increasingly aiding law enforcement and judges in carrying out their oaths. The use of these algorithms has already raised significant questions about bias and fairness, and looking ahead, the moral questions become even more challenging. How will AI influence conceptions of fairness and justice?

3. **Media and information quality**

An increased reliance on digital platforms for news has raised significant concerns about the role that autonomous systems are playing in influencing human judgment, opinions, perceptions, and even election outcomes. Addressing these challenges requires grappling with difficult governance questions pitting free speech against regulation by government or private parties and raises significant questions about algorithmic transparency.

This project is also guided by a series of **cross-cutting themes** that are common across the core use cases. Each of the above areas elicits questions regarding **global governance** and the ways in which existing national and international governance institutions may be challenged to respond to the fast-paced and transboundary applications of AI; **diversity and inclusion** and the ways in which the use of AI may reinforce existing biases, particularly against those in underserved or underrepresented populations; and **transparency and explanation** and the challenges of obtaining human-intelligible and human-actionable information about the operation of autonomous systems.

In addition to identifying these core areas and cross-cutting themes through research and engagement, this past year has also involved significant community building and educational efforts across the Harvard community and beyond. For example, in May the project hosted a faculty workshop, convening professors from across HLS, SEAS, and HKS to discuss shared areas of concern and optimism about these new technologies. The project also hosted “AI Advance,” a workshop that brought together over 120 members of the Berkman Klein Center and Media Lab communities to discuss emerging societal issues involving AI. Moreover, the Center has invited several new and returning fellows to bring AI-specific expertise to its broader fellows community, and one of them will be teaching a seminar this fall at HLS on issues pertaining to AI and compliance. This foundation of community engagement will be a critical component of work over the next year as the project delves deeper into the core areas.

### **Global Access in Action**

Global Access in Action (GAiA) conducts action-oriented research into access to lifesaving medicines and alternative incentives for the development of medical treatments for underserved populations. Building on last year’s successful workshop on access to medicines, GAiA Co-Director Quentin Palfrey published “Expanding Access to Medicines and Promoting Innovation: A Practical Approach” in the *Georgetown Journal on Poverty Law and Policy*, exploring successful strategies used by pharmaceutical companies to increase access to essential medicines in low- and middle-income countries. Over the past year, Co-Director Terry Fisher initiated a pilot project—partnering with the Namibian government—to incorporate miniature spectrometers, aiming to reduce the distribution of counterfeit medicines. Over the summer of 2017, GAiA is launching a brown-bag lunch series in collaboration with the Harvard Global Health, “Conversations in Global Health, Innovation, and the Digital World,” featuring the work of Palfrey, Fisher, and Co-Director Professor Mark Wu, as well as John Stubbs. Session topics include expanding access to medicines and incentivizing drug R&D that predominantly affect the global poor, expanding on Palfrey’s recent paper; the implications of global data flows on access to medicines; the application of mini mass spectrometers and other innovative technologies in global health policy; and the impact of President Trump’s first trade agenda on global access to medicines.

In the year ahead, GAiA will move forward with a review of its strategic plan, oriented around its core

objectives to (1) impact legal and policy frameworks governing innovation and global commercialization of medicines, (2) influence public policies that facilitate access to medicines through research, analysis, and commentary, and (3) produce creative, pragmatic strategies to measurably improve access to medicines. GAIa has recruited a fellow, Ashveena Gajeelee, and two summer interns. Upcoming plans include a research partnership with the Partnership for Supply Chain Management to share lessons with health care professionals from the world of logistics and drug procurement; collaboration with international economic and health organizations on pandemic preparedness strategies; and events with industry, nonprofit, and policy stakeholders.

[<http://globalaccessinaction.org>]

### **Global Network Initiative**

The Berkman Klein Center is a founding member of the Global Network Initiative (GNI), a multi-stakeholder initiative composed of companies, academics, and members of civil society that is focused on advancing human rights issues in the technology sector. This past year has been the most momentous in the seven-year history of the GNI, with seven of the eight member-companies of the Telecommunications Industry Dialogue deciding to join GNI as full members in March 2017. Former Assistant Director of the Cyberlaw Clinic Dalia Topelson Ritvo played a crucial role in negotiating and facilitating the GNI's expansion. Vivek Krishnamurthy, the Cyberlaw Clinic's current Assistant Director, now represents the Berkman Klein Center on the GNI's Board of Directors. He also serves on the GNI's Accountability and Policy Committees. Together with several Cyberlaw Clinic students, Vivek has been working to improve and streamline the assessment process the GNI uses to determine whether its member-companies are complying with the organization's human rights principles. This work is expected to continue into the next academic year.

[<https://www.globalnetworkinitiative.org/>]

### **Harmful Speech Project**

The Berkman Klein Center has continued its research, policy analysis, and network building effort devoted to the study of hate speech, in close collaboration with the Center for Communication Governance at National Law University in New Delhi and the Digitally Connected network, and in conjunction with the Network of Centers (NoC). In its second year, the project engaged in a range of activities focused on understanding research methods and protocols to further explore the phenomenon of harmful speech online, including:

**Convening People and Perspectives:** Over the last year, the Center's community has contributed and advanced dialogue around hate speech and harmful speech online broadly through active engagement in public and private fora, research and advocacy projects, and the development of tools, resources, and literature to inform interventions to reduce the production and spread of hate speech. The project gathered diverse geographical, topical, and sectoral stakeholders through a number of forums to advance conversations through education and discussion by. These included (1) a strategic workshop in June 2017 focused on the interplay of humans and algorithms (including AI), exploring how market dynamics, behavioral drivers, laws, and the technological

context contribute to the spread of harmful speech online and impact measures to constrain it; and (2), as a co-host, a Summer School on Online Hate Speech in March 2017 in Delhi, together with the Hans Bredow Institute at the University of Hamburg, the UNESCO Chair on Freedom of Communication and Information at the University of Hamburg, and the Centre for Communication Governance at National Law University in Delhi. This week-long summer program explored contemporary issues of information law and policy related to harmful speech.

**Empirical Research:** Over the course of the year research efforts took place against the backdrop of numerous policy developments related to online harmful and hate speech around the globe. Research efforts included (1) “Online Offensive Speech in Tunisia,” a project conducted in collaboration with the social media analytics firm Innova Tunisia with the aim of gaining insight into the presence of offensive speech on Tunisian social media and websites as well as media coverage of hate speech; (2) an examination, utilizing a set of digital media and network analysis tools developed by Graphika, of the discursive practices of white supremacists on Twitter within the context of the 2016 U.S. elections; and (3) an exploratory study of hashtags and topics related to Islamophobia, gender, and racism using a suite of analytical tools such as Crimson Hexagon and Media Cloud.

**Translation and Aggregation:** In addition to building capacity across contributing research institutions globally and connecting researchers, the project translated its efforts into the broader public sphere by linking research with public policy, advocacy, and support groups within and across countries, by highlighting a multitude of perspectives. These translational activities were primarily focused on the publication of a collection of sixteen essays that sought to highlight new ideas and research efforts from the Berkman Klein Community and that collectively offer a broad look and novel perspectives on the subject.

[<https://cyber.harvard.edu/research/harmfulspeech>]

### **Harvard Open Access Project**

The Harvard Open Access Project (HOAP), directed by Peter Suber, fosters open access to science and scholarship within Harvard and beyond, undertakes research and policy analysis on open access, provides access to timely and accurate information about open access itself, and develops an open-source tool to support its gathering and dissemination of open-access-related news. During the 2016–2017 academic year, HOAP started new pro bono consultations with forty-four universities, foundations, government agencies, and nonprofit publishers about open access, open access policies, and practices—more than twice as many as the year before. In addition, it continued pro bono consultations with twenty-one organizations that had started in previous years. Furthermore, HOAP supervised the Open Access Tracking Project (OATP), enlarged the OATP feeds reporting open-access-related news and comment to the open access community, and upgraded TagTeam, the open-source social tagging software HOAP is developing at the Berkman Klein Center to serve as the platform for OATP. It enlarged the Open Access Directory, the wiki-based encyclopedia of open access, and expanded its widely endorsed guide to good practices for university open-access policies. In the same period, HOAP deepened its collaboration with

the Harvard University Office for Scholarly Communication and expanded its outreach on and off campus with twenty-three public talks on open access.

[<https://cyber.law.harvard.edu/hoap>]

### **Hewlett Private Data for Public Good**

Led by Faculty Director Jonathan Zittrain and supported by Rob Faris, David O'Brien, and Tiffany Lin, over the last two years the project has aimed to investigate and facilitate cooperation for sharing data to better inform Internet policy, including identifying opportunities to work with companies in the pursuit of sharing data more freely and responsibly with those working in the public interest. The project has facilitated workshops and conversations across various sectors, and has identified opportunities and challenges facing companies to responsibly share data. It has surveyed the landscape of publicly and privately held data on Internet infrastructure, online content controls, and online activity. The project continues to work on these issues and draw upon lessons learned first-hand through other projects at the Center. In particular, projects such as Media Cloud, a platform that aggregates, analyzes, and visualizes information about online media content, and Internet Monitor, a dashboard displaying various indicators of Internet health, are dependent on robust and representative data and have worked to garner better partnerships with companies. Looking forward, the Center is developing opportunities to continue this work and to tackle the larger systemic issues in the data sharing ecosystem.

### **Internet Governance**

This Network of Centers project, led by Faculty Director Urs Gasser and Ryan Budish, aims to inform the debate about the future of Internet governance. It is a multidisciplinary, collaborative, extended investigation into several important aspects of the multifaceted system that defines the function, structure, and operation of the Internet at both the technical and the application layers. This research includes developing a better understanding of the governance landscape and the mechanisms of effective governance while contributing in meaningful ways to the debate over the future evolution of the Internet governance ecosystem. The work proceeds through research, events, and collaborative partnerships. Much of the Center's Internet governance work is done in conjunction with the Global Network of Internet and Society Research Centers, which includes partner research centers from around the world, including the Global South.

### **Internet Monitor**

Internet Monitor, led by Faculty Director Jonathan Zittrain and Rob Faris and supported by Casey Tilton, evaluates, describes, and summarizes the means, mechanisms, and extent of Internet content controls and Internet activity around the world. Internet Monitor provides expert analysis on the state of the global Internet via its special reports and annual reports on notable events and trends in the digital space. The project published two reports on Internet censorship in 2016–2017. "[Analyzing Accessibility of Wikipedia Projects Around the World](#)" includes insights into the state of access to Wikipedia content in fifteen select countries, finding that as of June 2016 the Chinese government was likely censoring the Chinese language Wikipedia project. However, considering the widespread use of filtering technologies and the vast coverage of Wikipedia, the study also finds that as of June 2016 there was relatively little censorship of Wikipedia globally. "[The Shifting Landscape of Global Internet Censorship](#)" documents the

practice of Internet censorship around the world through empirical testing in forty-five countries. The study finds evidence of filtering in twenty-six countries across four broad content themes: political, social, topics related to conflict and security, and Internet tools (a term that includes censorship circumvention tools as well as social media platforms).

The Internet Monitor Dashboard, originally launched in September 2015, is a freely accessible tool that aims to improve information for policymakers, researchers, advocates, and user communities working to shape the future of the Internet by helping them understand trends in Internet health and activity through data analysis and visualization. The dashboard lets users customize a collection of data visualization widgets that enable easy comparisons across countries and data sources. In addition to creating their own collections, visitors to the dashboard can view a selection of featured collections based on topics such as online media, Internet use worldwide, and companies' practices around freedom of expression and privacy. In 2016–2017 the project team worked closely with Justin Clark and Ryan Morrison-Westphal to expand the Internet Monitor Dashboard data availability and visualization offerings.

The Internet Monitor team continues to work with Herdict, a platform for collecting and disseminating crowdsourced real-time information about Internet filtering, DDoS attacks, and other web blockages. Herdict, led by Zittrain and Ryan Budish, has accumulated more than 310,500 inaccessible reports and 708,000 accessible reports across more than 60,000 sites. The Internet Monitor Dashboard features a widget that displays crowdsourced data on website availability collected through Herdict.

In July 2016, Internet Monitor launched the closed beta of AccessCheck, a tool that enables users to test in real time whether various websites are available in different countries. The closed beta was opened to small group of trusted partners, including the members of the Internet Freedom team at the U.S. State Department, researchers who have worked closely with Internet Monitor in the past, colleagues in the Internet filtering/Internet censorship field, and members of the Berkman community.

[\[https://thenetmonitor.org/\]](https://thenetmonitor.org/)

[\[https://www.herdict.org\]](https://www.herdict.org)

### **Internet Robustness**

The Internet Robustness project, led by Faculty Director Jonathan Zittrain, Rob Faris, Sebastian Diaz, Ryan Morrison-Westphal, and Casey Tilton, develops software to safeguard the promise of the URL, or “Uniform Resource Locator,” that information placed online can remain there, even amid network or endpoint disruptions.

The heart of the project is Amber, a proof of concept for the “Mirror-As-You-Link” protocol initially suggested by Zittrain. The project publicly launched Amber in 2016 within the official WordPress.org plug-in directory and Drupal.org module directory. When installed on a website, Amber detects when the website publishes a new link and automatically makes a backup of the content at the other end of that link if the linked site does not object. If a visitor to the website clicks on a link that is unavailable, Amber springs into action by notifying the user about the broken link and presenting a mirrored page; the visitor is then able to view the mirror of the page when it would otherwise be inaccessible. In line with the

commonplace that “lots of copies keeps stuff safe,” the software enables Amber users to store snapshots using a combination of the following third-party storage and archiving systems: the Internet Archive, Perma, and Amazon Simple Storage Service (Amazon S3). Examples of the types of websites that have downloaded Amber include a legal resources website, an academic study guide clearinghouse, a journalist trainer, a political fact-checking and archiving group, an Internet history digital archive, a Vietnamese activist blog, a European academic job listing website, a fair use blogger, and a Nigerian storytelling archive. As of July 2017, over 1,676 unique WordPress websites have downloaded Amber to preserve their outgoing links.

[<https://amberlink.org>]

### **Lumen**

Led by Faculty Director Christopher Bavitz and Adam Holland, with technical support from Ryan Westphal-Morrison and the Center’s technical team, the Lumen project is a comprehensive online database of takedown requests related to online content. Lumen’s primary goals are to educate the public about removal requests and takedown notices that are sent to Internet publishers, search engines, and others; to provide as much transparency as possible about such requests in terms of who is sending them, why, and to what effect; and to facilitate research on the notices. In 2016–2017, Lumen received an average of approximately 5,000 notices per day, and its data corpus grew to include over six million notices referencing approximately three billion URLs. The project website was visited over ten million times by users from virtually everywhere in the world, including a few visits from Antarctica.

A variety of new researchers and public interest groups began working with the project database in 2016, including individuals from the U.K., Australia, the EU, and the United States. Most notably, in March 2017, the Takedown Project [released](#) coded data samples from its 2016 paper “Notice and Takedown in Everyday Practice” that relied on data from Lumen. Professor Eugene Volokh at UCLA began to work closely with Lumen’s data for an ongoing research project studying U.S. court orders that seek removal of online links or content, and he cited Lumen extensively in his [amicus brief](#) submitted in *Hassel v. Bird*, a case being heard in California. Lumen continued to work with the Center’s technical support staff to improve the website and database, especially to make it more user-friendly and to keep pace with notice volume. Lumen also continued to work closely with Google, the database’s largest source of notices by volume, to help the company integrate more of the notices it receives into Lumen’s API submission protocols. The Lumen team hosted members of Google’s Legal Removals team on a week-long visit to the Center in the spring of 2017, which featured a series of conversations with members of the Berkman Klein community discussing research possibilities in the transparency and notice and takedown space; a presentation by the Google visitors to the Center community at an internal lunch, and a presentation on the project by the Lumen team at Google’s Cambridge offices. Lumen continues to proactively seek out new notice submitters and researchers with whom to work.

[<https://www.lumendatabase.org/>]

### **Massachusetts Municipal Fiber**

Led by Susan Crawford and supported by David Talbot, Kira Hessekiel, and interested students, the [Municipal Fiber Project](#) studies municipal Internet access projects and educates municipal and state

officials on the topic of public fiber networks. Such networks can drive local economic development, furnish high speed internet access, and enable municipal service innovation. The project's efforts continued this year on several fronts. Recognizing the synergies between municipal Internet access projects and "smart grids," it produced a major [report](#) on the smart grid and fiber-to-the-home (FTTH) network in the town of Concord and documented existing and possible future paybacks of this effort. To reinforce the point that smart grids that use fiber-optic backhaul can provide rapid returns on investment, the project produced a [report](#) documenting the paybacks of the fiber-based smart grid built by the Electric Power Board in Chattanooga, Tennessee, and showed that the paybacks fully recouped costs even if a federal subsidy is disregarded. The project team also completed an ambitious effort at collecting all advertised Internet access pricing data from U.S. municipal ISPs offering fiber-to-the-home services and, as of fall 2017, was nearing completion of a report comparing pricing offered by these ISPs to those offered by local private competitors. During the 2016–2017 academic year the project also convened municipal and state leaders at Harvard Law School to discuss and share their business experiences, including in [an event](#) planned jointly with [Responsive Communities](#). Some municipal participants said the event was the first time they'd interacted with other municipal and state agency officials on the topic of public fiber networks. Over the course of the year the project also provided informal advice to several individual municipalities on how to set up Internet access businesses and related questions.

[\[https://cyber.harvard.edu/research/municipalfiber\]](https://cyber.harvard.edu/research/municipalfiber)

## **Media Cloud**

The Media Cloud project, led by Faculty Director Yochai Benkler, is an open platform for the qualitative and quantitative study of online media. Media Cloud archives and analyzes hundreds of millions of stories published online and makes that data available through a suite of web tools as well as an API, both freely available to the public and implemented through an open-source code base. The project is a joint effort by the Berkman Klein Center and the MIT Center for Civic Media. Over the past year, we have made extensive improvements in both our back-end and front-end infrastructures, including the launch of two new web tools. The new [topics.mediacloud.org](https://topics.mediacloud.org) tool provides a public, modern interface to the topic mapping tools that have been the basis of all of our major research papers. We have also started beta testing a new feature to allow any public user to run a spider to generate her own topic. Additionally, the new [sources.mediacloud.org](https://sources.mediacloud.org) tool provides a public interface to help users navigate and understand our media collections. We have also made extensive improvements to our public API, which provides the backing functionality for all of the features in the new tools, allowing users to do their own research and build their own tools on top of the same API that our own web tools use.

In addition to technological development, over the course of the year Media Cloud has undertaken significant research projects. Of note is an in-depth analysis of the 2016 U.S. presidential election, which resulted in a paper on polarization in online election coverage published in the *Columbia Journalism Review*. It was the most downloaded article in the history of the CJR site and was featured in stories in the *New York Times* and on *CBS Sunday Morning*. Media Cloud also delved into issues of public importance across the world. Researchers used Media Cloud to explore framing around sexual violence in India, track the conversation on contraceptives in media in India, Kenya and Nigeria, identify influential news sources that discuss philanthropy and corporate social responsibility in India, analyze the public safety discourse

in the U.S., and follow the unfolding of a “live” issue: the recent farmers’ protest in India. This work expanded the research use cases for which Media Cloud has been utilized successfully.

[\[https://mediacloud.org\]](https://mediacloud.org)

[\[https://tools.mediacloud.org\]](https://tools.mediacloud.org)

### **metaLAB (at) Harvard**

Under the leadership of Faculty Director Jeffrey Schnapp, the metaLAB team continues to pioneer the Center’s exploration of the roles of technology in design and the arts and humanities. Schnapp and his team of Matthew Battles, Sarah Newman, and Jessica Yurkofsky infuse traditional modes of academic inquiry with an enterprising spirit of hacking, making, and creative research. In 2016–2017, the team’s work spanned platform design, art and installation, teaching, lectures, and publications.

In the realm of platforms, metaLAB’s chief focus for the year was Curricule, a project commissioned by Harvard’s Dean of Arts and Humanities to visualize curricular data for course discovery and selection. Working with Berkman Klein’s Geek Cave, the Curricule team identified data sets, developed and tested user-experience designs, and built an alpha version of the platform. Members of metaLAB also worked with Berkman Klein and Law School colleagues on the user-experience design for the Criminal Justice Debt Project, a platform to mobilize data on the impact of legal fees and fines for the use of activists, policy makers, and scholars. The metaLAB team designed AI Compass, a visualization and topic-mapping platform for the Ethics and Governance of Artificial Intelligence Initiative, as well as curated the Compass Area focused on AI in Art & Design. The team collaborated and consulted on knowledge-design research projects in 2016–2017, including a data visualization and research project on the work of the poet Apollinaire, at the Observatoire de la vie litteraire (OBVIL) at the Sorbonne (with guidance and leadership by Krystelle Denis, currently based in Paris to work on this project); and the Open Syllabus Project, a collaboration between researchers at Columbia and Alison Head with members of metaLAB, particularly Yurkofsky.

In art and installation work, *The Future of Secrets*, a project conceived by Newman and produced by Newman and Yurkofsky, was offered internationally at two large-scale public art and culture programs: MFANow, a series of overnight events hosted by the Museum of Fine Arts, Boston, in fall 2016; and re:publica, Berlin’s annual Internet-culture conference and exposition in 2017. Newman also exhibited a related video installation that explores human-machine relationships, entitled *Nobody’s Listening*, at ESC Atelier in Rome. metaLAB is currently developing a series of artistic works related to the social and cultural dimensions of artificial intelligence; a set of these works will be exhibited in Harvard Art Museums’ Lightbox Gallery in August 2017, including works by Battles, Newman (in collaboration with Rachel Kalmar), Kim Albrecht, and Jonathan Sun.

In the spring semester, metaLAB taught a hybrid research-studio graduate course titled “What Should or Could (Scholarly) Knowledge Look Like in the 21st Century?” for students from the Graduate School of Arts and Sciences and the Graduate School of Design. The course featured visits from eleven distinguished scholar-practitioners from Harvard and beyond who stretch the bounds of scholarship through media, design, and making. metaLAB also offered an open non-credit course called Sanctuary

Seminar, which explored roles for design, art, and collaborative making in responses to displacement of populations and refugee crises. This was followed by a metaLAB creative workshop in Greece, focused on sound and mapping and offered to refugees and local residents, led by Battles and Newman with Peter McMurray (PhD Ethnomusicology '14) and Myrna Ayoub (GSD M.Arch II '16), on the Greek island of Lesbos in collaboration with the Office of Displaced Designers, an NGO committed to refugee relief. In the summer of 2017, metaLAB offered another instantiation of its library design course, Library Test Kitchen (LTK), led by Yurkofsky. LTK is a creative making course for library MS students at Simmons College, in which they are encouraged to think creatively and innovatively about library uses and spaces in this new technology-infused, globalized era.

Throughout the year, members of metaLAB gave talks and lectures in Cambridge, Champaign-Urbana, Chicago, Berlin, Potsdam, Rome, Lesbos, and London. The team continued to produce publications as well, co-authoring peer-reviewed articles in the art-history journal *Leonardo* (MIT Press) and the volume *Debates in the Digital Humanities 2016* (Minnesota), in addition to publishing a book, *Tree* (Bloomsbury Academic, Object Lessons series), by Matthew Battles, with photographs by Sarah Newman. This year metaLAB moved its metaLAB Projects book series to the MIT Press and has several books in the pipeline, including the *Library Test Kitchen Cookbook*, a collection of recipes for creative interventions in libraries.

[\[https://metalabharvard.github.io/\]](https://metalabharvard.github.io/)

### **Network of Interdisciplinary Internet & Society Centers**

The Network of Centers (NoC) is a collaborative initiative among academic institutions with a focus on interdisciplinary research on the development, social impact, policy implications, and legal challenges of the Internet. During the reporting period, the Institute for Technology and Society of Rio de Janeiro (ITS Rio) assumed leadership of the Network for the coming two years, taking the helm from the NEXA Center for Internet & Society at the University of Torino, which presided over the welcome of five new Participating Centers and three Affiliated Participants, and the growth of the Network to almost eighty centers worldwide.

There were a number of informal gatherings of Centers throughout the globe, including at the Internet Governance Forum (IGF) in Guadalajara, Mexico, and at the annual conference of the Association of Internet Researchers (AoIR) hosted by NoC Founding Institutions Alexander von Humboldt Institute for Internet and Society and the Hans-Bredow-Institute for Media Research in Berlin. Both of these convenings served as a touchpoint for discussing new developments and reports on current projects within the Network, as well as horizon-scanning on topics such as Internet governance, the role of platforms in regulating phenomena such as harmful speech and global takedowns, and encryption policy and app blocking in Latin America. In March 2017, the Center for Communication Governance at National Law University in New Delhi, and the Berkman Klein Center, along with Hans-Bredow and the UNESCO Chair on Freedom of Communication and Information at the University of Hamburg, held a summer school on online hate speech. It convened an interdisciplinary slate of collaborators who discussed this phenomenon from a theoretical and sociological perspective and in the context of international law, freedom of expression, and policy making.

In November 2017, the NoC will convene a symposium to identify, explore, and address both the opportunities and challenges of AI-based technologies through the lens of inclusion, with the aim of building a better, more inclusive, and diverse world together. The symposium will be co-hosted by ITS Rio and the Berkman Klein Center in Rio de Janeiro with support from the Ethics and Governance of Artificial Intelligence Fund, and will invite guests and collaborators from advocacy, philanthropy, media, policy, and industry.

### **NoC Regional Efforts**

#### **Digital Asia Hub**

The Digital Asia Hub (DAH), led by Malavika Jayaram, is an independent nonprofit Internet and society research think tank based in Hong Kong. Incubated by the Berkman Klein Center and a diverse group of academic, civil society, and private sector partners, the Hub provides a nonpartisan, open, and collaborative platform for research, knowledge sharing, and capacity building related to Internet and society issues with a focus on digital Asia. In 2016, the DAH kicked off an Artificial Intelligence (AI) in Asia series of workshops examining AI in the Asian context. Over three events held in Hong Kong, Seoul, and Tokyo, the series brought together an outstanding group of scholars, policy makers, investors, technologists, and artists. In April 2017, Jayaram delivered an address at the GES Taipei workshop 2017 on the topic of inclusion in the face of rapid technological growth disparity. In seeking to cultivate a stronger understanding of Asia's view on AI ethics and safety, as well as promoting discussion on how Asia can design and implement AI for the social good, the DAH hopes to generate concrete outputs to contribute to the global governance of AI work being done as part of the Ethics and Governance of AI Fund.

#### **OSS Governance Project**

The OSS Governance Project aimed to address two challenges that open-source software organizations face: what formal corporate structure best suits such organizations' needs; and what models for internal governance exist to help organize open-source development communities? The project—generously supported by the MacArthur Foundation—had a productive 2015–2016 academic year of research, convening, and writing. During 2016–2017, the project released a report, “Challenges & Opportunities Concerning Corporate Formation, Nonprofit Status, & Governance for Open Source Projects,” which addresses some of the key considerations of those managing open-source development initiatives, including structure, organization, and governance. In one section, the report examines corporate formation options for open-source organizations and the history of the IRS's approach to open-source projects seeking tax-exempt status. The internal governance section breaks down organizational models both within the open-source world and outside it, allowing project founders to envision how each model could affect project processes. The report is also replete with case studies and diagrams that can help open-source projects see these ideas in practice. As of June 2017, the guide had been downloaded hundreds of times via various online sources and was featured in a column in [Linux Journal](#) by longtime Berkman Klein Center collaborator Doc Searls. The project team will continue to promote this work within the open-source community and consider future initiatives to serve the community's needs.

#### **Privacy Tools for Sharing Research Data**

In this project, the Berkman Klein Center joins Harvard’s Center for Research on Computation and Society (CRCS), the Institute for Quantitative Social Science, and the Data Privacy Lab, as well as the Program on Information Science at MIT Libraries, to translate the theoretical promise of new technical measures for privacy and data utility into practical computational and legal tools that can be applied in a variety of contexts. The project is supported by the National Science Foundation and the Alfred P. Sloan Foundation. Led by Faculty Director Urs Gasser, with support from David O’Brien and Alexandra Wood, the project’s legal team directs the development of new privacy frameworks, legal instruments, and policy recommendations that complement advanced tools for private data analysis being developed in the project. In 2016–2017, this team, together with Micah Altman and Stephen Chong, led the development of extensions to a prototype tool for automating the generation of data sharing agreements that reflect various regulatory and institutional requirements for privacy protection. Also with Micah Altman, the team drafted an article, “Practical Approaches to Big Data Privacy Over Time,” that was featured at the first annual Brussels Privacy Symposium in November 2016. In addition, they led the authorship of joint comments to the National Institute of Standards and Technology (NIST), which resulted in changes to NIST’s forthcoming guidance to government agencies on de-identifying datasets. In collaborations with computer scientists at CRCS, the team engaged in deep interdisciplinary research to bridge the gap between computer science and legal approaches to privacy. This ongoing research led to invited talks at venues such as the Commission for Evidence-Based Policymaking, the Georgetown University Ethics Lab, the Federal Committee on Statistical Methodology Policy Conference, and the Simons Institute Data Privacy Planning Workshop. It also yielded the publication “Differential Privacy: A Primer for a Non-Technical Audience,” which was presented at the 2017 Privacy Law Scholars Conference in Berkeley, California. Building on the success of this research effort, in January 2017 the U.S. Census Bureau, Georgetown University, the Berkman Klein Center, CRCS, and Pennsylvania State University launched a three-year collaboration to assist the Census Bureau in developing formal privacy models that are tailored to its specific legal requirements for privacy and utility.

[[http://cyber.law.harvard.edu/research/privacy\\_tools](http://cyber.law.harvard.edu/research/privacy_tools)]

### **Responsive Communities**

Responsive Communities is an umbrella initiative for multidisciplinary efforts addressing some of the most important issues of economic development, social justice, and civil liberties of our time—those prompted by Internet access. The initiative’s projects are aimed at increasing the adoption and financing of competitive fiber-optic networks that provide inexpensive high-speed Internet access across entire communities, assisting cities to adopt responsible data governance practices, and building a pipeline of people who will serve in local government. The Responsive Communities team, led by Waide Warner and Maria Smith, with support from David Cruz and Laura Adler, convened a November 2016 working session with seventeen city officials from across the U.S. and abroad, along with representatives of nonprofit, philanthropic, and research organizations, to discuss the future of the Internet of Things in cities. The conference was organized around three issues: learning from early implementations, building public trust, and monetizing technology assets. In collaboration with the Knight Foundation, the team published a summary report and proposal for future actions. Working with a team of students from Harvard, MIT, and Yale, Ben Green led research on best practices in municipal open data, which has been published as a playbook: “Open Data Privacy: A Risk-Based Approach to Sharing and Protecting

Sensitive Information.” In its first year, Responsive Communities also launched a class, the Responsive Communities Lab, that trains and supports students from across disciplines (law, tech, policy, and design) in their work on deliverables aimed at achieving universal high-speed Internet connectivity and assisting government officials in adopting responsible data governance practices. In addition to the playbook for open data privacy, students published a guide for local leaders using big data as a tool to fight housing blight, and have written a forthcoming analysis on the use of algorithms in sentencing. The Lab will expand in the fall of 2017. In partnership with the New Media Advocacy Project, Maria Smith is producing a documentary film series for stakeholders to deploy as a media tool in the second half of this calendar year. The series illustrates the human consequences of underconnection through the lens of families living in the rural heartland and in San Francisco. The project is currently in production mode, and the Responsive Communities team is working with stakeholders from across the country to most effectively create and deploy the series.

### **SHARIAsource**

SHARIAsource is a flagship research venture of the Islamic Legal Studies Program (ILSP) at Harvard Law School. Led by Intisar Rabb and Sharon Tai, this initiative organizes the world’s information on Islamic law in a way that is accessible and useful. Working with a global team of editors, SHARIAsource provides a platform to house primary sources of Islamic law, organize the people to critically analyze them, and promote research to inform academic and public discourse about Islamic law. SHARIAsource was originally developed by ILSP using the framework of another Berkman Klein open-source project, the Emily Dickinson Archive, with the help of an outside developer. The Berkman Klein Center has continued this work, supporting SHARIAsource and the ILSP with development of the platform and technical project management. During the 2016–2017 academic year, the active software development of the SHARIAsource platform added many new features and fixed bugs in six software releases.

### **Translating Research for Action: Ideas and Examples for Informing Digital Policy**

In September 2016, the Center released a series of papers as part of the Translating Research for Action: Ideas and Examples for Informing Digital Policy initiative. Building on interest in exploring new ways to communicate, educate, and inform in the public interest, the series aimed to connect academic research with policy making in the networked world by helping to identify opportunities in key areas related to digital technology and innovation. Informed by conversations and collaborations with diverse stakeholders that the Center has had in each area, the result was three briefing papers on the critical topics of how privacy intersects with issues related to students, open data, and cybersecurity. A fourth paper tied these briefings together and took a process perspective, outlining different channels and methods available for academics to inform policy making. In December 2016, the team published another briefing paper, “Understanding Harmful Speech Online.” The briefings experiment with formats that may be more useful and accessible to decision makers than traditional research papers.

[\[https://cyber.harvard.edu/node/99639\]](https://cyber.harvard.edu/node/99639)

### **Transparency 2.0**

The number of Internet and telecommunications companies releasing transparency reports documenting government requests for user data has continued to increase. Working primarily with the Open

Technology Institute (OTI) to host meetings and workshops, the Berkman Klein Center has continued to research the current state of transparency reporting and to refine the understanding of best practices for drafting transparency reports. After publishing a report surveying current practices and identifying best practices, OTI and the Berkman Klein Center published “The Transparency Reporting Toolkit: The Reporting Guide & Template,” which provides a practical starting point for companies that want to create or improve their transparency reports, including a transparency reporting template for companies designing their first report.

## **WEF**

Over 2016–2017, researchers from the Berkman Klein Center participated in the World Economic Forum's networked governance groups as part of the Future of Digital Economy and Society Initiative. The Forum's networked governance groups convene members of the private sector, civil society, and academia for discussions and collaboration on emerging issues. Drawing upon existing research efforts in its other projects, this year the Berkman Klein contributed in an advisory capacity to groups focused on industrial Internet of Things safety, the digital economy, cybersecurity, and the future of artificial intelligence.

## **Wikipedia Server Data Analysis**

The Wikipedia Server Data Analysis project is a collaborative effort between the Berkman Klein Center and the legal department at the Wikimedia Foundation with two goals: to identify the historical and current inaccessibility of Wikipedia subdomains and articles from Wikipedia's anonymous request volume data, and to develop an open-source tool that incorporates the same methodologies so that other web hosts can identify inaccessibility of their own properties. The project wrapped up this year by publishing a wide-ranging report on the censorship of Wikipedia around the world and developing open-source tools that help discover evidence of such censorship in server access logs.

## **Youth and Media**

Led by Faculty Director Urs Gasser and Sandra Cortesi and supported by Andres Lombana-Bermudez, Alexa Hasse, Lionel Brossi, and Leah Plunkett, in cooperation with Christopher Bavitz, Jessica Fjeld, and the Cyberlaw Clinic, Youth and Media (YaM) encompasses an array of research, advocacy, and development initiatives around youth and digital technology. At the heart of this multiyear project, which includes original and translational research as well as a range of educational efforts and community building and networking activities, is the mission to inform, support, and encourage young people's interaction with digital media to promote and bolster learning, well-being, creative expression, and civic participation while also addressing a range of challenges and concerns. The team's work builds upon an evidence base that offers unique insights into the ways young people (primarily twelve- to eighteen-year-olds) access and use a growing range of digital technologies. It is aimed at shaping educational, regulatory, and policy frameworks and practices to the benefit of youth and in ways that advance the public interest.

YaM consists of a series of analytically distinct but interacting topics, activities, and projects that bring together different disciplines and communities and encompass a variety of methods and modes of engagement. We can roughly cluster these activities along three dimensions: 1) Advancing the research

debate, 2) Shaping the educational and learning space, and 3) Leveraging networks and the broader local and global community.

[[www.youthandmedia.org](http://www.youthandmedia.org)]

## 1) Advancing the research debate

***Artificial Intelligence and Inclusion.*** This pilot, in collaboration with the Digitally Connected network, the Conectados al Sur network, and the Global Network of Internet & Society Centers, brings together a broad and diverse group of stakeholders to examine the intersection between AI and inclusion and explore the ways in which AI systems can be designed and deployed to support diversity and inclusiveness in society. Thematically, an emphasis has been placed on the impact of AI on underserved groups—whether in terms of age, ethnicity, race, gender and sexual identity, religion, national origin, location, skill and educational level, and/or socioeconomic status—and on how these communities think about AI systems. Against this backdrop, the team has been engaging in different research “sprints” and learning calls—high-intensity collaborative efforts to explore and experiment with several themes across AI and inclusion—to examine how we think about AI and inclusion, what the core issues and forces at play are, and what we can learn from different interventions and examples. Furthermore, the YaM team has been developing a mixed methodology approach to gain insight into how to assess the ways in which youth conceptualize AI, encompassing quantitative and qualitative measures (e.g., surveys, interviews, and interactive and multimedia content). Additionally, we are working to unpack the black box of AI to understand how we can better engage with and understand AI-based applications and their ethical challenges. To address this question, we have started to build a toolkit, including modules, playlists, and multimedia resources and guides, co-designed with youth and other vulnerable populations that can be implemented in both formal and informal learning settings to help individuals think critically about artificial intelligence.

***Digital Economy.*** The rise of the Internet and the resulting social, commercial, and entertainment platforms have enabled a digital economy in which youth are participating as they develop a range of sociocultural practices. As young people engage in a greater variety of digital leisure activities that create value, such as gameplay, media production, and content circulation, the boundaries between work and play often blur. Inspired by the dynamics of the emergent networked environment, this project, a collaboration between the Berkman Klein Center’s YaM team and Christian Fieseler’s research team at the BI Norwegian Business School (Oslo), examines how youth conceptualize the changes to their current play and their future work. The Digital Economy project incorporates several research memos, an essay that introduces the memos, and focus group interviews with youth. Over the past academic year, the YaM team has been composing two memos, discussing 1) youth capital-enhancing activities online, and 2) key skills that youth can

cultivate and leverage when collaborating in virtual spaces. To introduce and contextualize the research memos, the team is developing an overall mantle/framework piece. Additionally, we are refining interview questions for focus groups with young people across the United States to learn more about the motivations, mindsets, and practices youth develop as they engage in capital-enhancing digital activities.

***Privacy.*** Building on several previous years of research, writing, and convenings through the Student Privacy Initiative and the youth and digital privacy project, the YaM team continues to focus on youth privacy in learning and social environments while also cultivating a broader understanding of the opportunities for and challenges to protecting privacy across the many ecosystems that youth occupy. Highlights of privacy-related work this past year include the release of “[Privacy and Student Data: Companion Learning Tools](#),” which offers training experiences for school administrators and teachers to understand the basics of the primary federal student privacy laws, as well as key values-based and best-practice questions. This toolkit was also remixed to provide an in-person training to lawyers and other youth-serving professionals at the Children’s Law Center in New York who advocate on behalf of our most vulnerable youth. Privacy also serves as a focal point for the “Student Privacy, Equity, and Digital Literacy” newsletter that the YaM team publishes biweekly in collaboration with the Data and Society Research Institute. The [newsletter](#) reaches more than 600 subscribers across educational, governmental, vendor, and nonprofit sectors (among other constituencies), and both its content and its production process have served as a springboard for focus groups and presentations in several cities. In addition, YaM team members have presented on youth privacy issues at Fordham Law School, the University of Geneva, the New Hampshire Supreme Court Society, the Strategic Data Project convening hosted by the Harvard Graduate School of Education, and other platforms.

## **2) Shaping the educational and learning space**

***Coding for All.*** With support from the National Science Foundation, Coding for All is a collaboration of the Berkman Klein Center with Mimi Ito, Professor in Residence at the University of California Irvine Humanities Research Institute and Research Director of the Digital Media and Learning Hub, Department of Anthropology, Department of Informatics, and School of Education; and Mitchel Resnick, Professor of Learning Research and head of the Lifelong Kindergarten group at the MIT Media Lab. This interdisciplinary collaboration seeks to address resilient challenges in expanding pathways to computational fluency and STEM interests and careers through multiple approaches: designing digital tools and environments (primarily using the Scratch programming language), researching social and cultural factors, and examining the legal and policy dimensions. The project aims to create diversified pathways to the Scratch programming environment by integrating the interest areas and cultural referents of nondominant youth, addressing the national need for a diversified high-tech workforce and a computationally fluent public, and providing robust research that can inform the

design and deployment of related efforts in STEM education. In its final year, the project continued exploring the potential of introducing educators to Scratch through interest-based pathways, as well as ways to support positive youth-oriented online communities through policies and practices. The Berkman Klein Center team, led by Executive Director Gasser, Cortesi, and Lombana-Bermudez, in collaboration with the Cyberlaw Clinic, led the legal and policy aspects of the project and provided support for facilitating [workshops](#) with educators and librarians. Moreover, during the final year, the Center team conducted a series of interviews with adult moderators from three youth-oriented platforms (Scratch, DIY.org, and Connected Camps) and worked on three case studies (the [case study of DIY.org](#) has been published on Medium) and infographics about governance strategies and moderation schemes.

***Digital Citizenship Plus.*** Digital technologies enable youth to participate in the consumption, dissemination, and creation of content—opening channels for learning, participation, and civic engagement—in ways that are revolutionary for both culture and industry. At the same time, the Internet and digital media are also associated with a series of challenges, such as the “participation gap”: not all young people globally have equal access to digital technologies and the agency and skills to use them. To support youth to successfully address the challenges and embrace the opportunities associated with our digital ecosystem, the design of enhanced informal and formal learning spaces centered on the concept of digital citizenship has become a growing priority for decision-makers in public and private sectors. In the context of increasing attention toward what it means to be a digital citizen, YaM’s Digital Citizenship Plus seeks to generate additional conversations around what exactly the notion of digital citizenship encompasses. As part of this initiative, the team is in the process of curating open-access educational resources, for and in collaboration with youth, and for educators, that focus on digital citizenship, which will contribute to our digital citizenship learning materials repository described in the Digital Citizenship Learning Playlists section below. Additionally, the team is refining interview questions for focus groups with youth across the United States to better understand how young people think about digital citizenship—both the concept itself and how it is manifested in current practice.

***Digital Citizenship Learning Playlists.*** With support from the Digital Media and Learning Challenge and the John D. and Catherine T. MacArthur Foundation, the Digital Citizenship Learning project, led by Executive Director Gasser, Cortesi, and Lombana-Bermudez, aimed to involve young people in the [co-design of four digital citizenship learning playlists](#) about key areas of networked life, such as privacy, creative expression, careers, and advocacy. Each playlist is composed of six learning experiences that youth can complete on their own, while leveraging multimedia resources and completing mini challenges. The YaM team hosted a series of workshops at four youth-serving organizations in the Boston metropolitan area ([NuVu Studio](#), [Philips Academy Andover](#), [Transformative Culture Project](#), and [Zumix Radio](#)) and worked with diverse youth in the co-design of the playlists and learning experiences. The YaM team also collaborated with

the Cyberlaw Clinic in the production of several resources (guides) that are included in the playlist about creative expression. Currently, we are iterating the [final versions of the playlists](#) and plan to release them at the end of the summer on the [LRNG](#) and the [Digital Literacy Resource Platform \(DLRP\)](#) platforms under the Creative Commons Attribution 4.0 International (CC by 4.0).

### **3) Leveraging networks and the broader local and global community**

***Digitally Connected.*** Digitally Connected is a collaborative initiative of UNICEF and the Berkman Klein Center, building upon a multiyear partnership for analyzing digital and social media growth and trends among children and youth globally. Led by Executive Director Gasser, Cortesi, and Lombana-Bermudez, and supported by Amar Ashar and Lionel Brossi, in cooperation with Kate Pawelczyk and UNICEF’s Voices of Youth team, the initiative addresses issues such as inequitable access, risks to safety and privacy, hate speech and social exclusion, youth rights and empowerment, skills and digital literacy, spaces for participation and civic engagement and innovation, and the role of the Internet in strengthening relationships and sense of belonging. Over the last academic year, the team has focused on events, community building, and research activities.

#### **Events:**

Building on the second regional symposium, “Conectados al Sur: Chile,” which focused on the use and adaptation of the Internet by traditionally marginalized youth (e.g., youth in rural areas, LGBTQ youth, ethnic and racial minorities) across Latin America and the Caribbean in order to increase the inclusion of these groups, the team has been planning the next regional symposium, “Conectados al Sur: Costa Rica.” This third symposium will again emphasize inclusion as a main theme but will also focus on the digital economy, digital citizenship, and artificial intelligence. It will take place in January 2018.

#### **Community building:**

The new Spanish-language Conectados al Sur website aims to provide both members of the network and visitors an easier and more engaging way to access information. The site showcases a Twitter feed that is updated regularly with region-specific information in relation to youth and digital technologies. Additionally, on a monthly basis, all Latin American country representatives from the Conectados al Sur network engage with each other in a structured learning call to keep members informed of current developments in the participants’ countries and create a space to collaboratively address and debate relevant issues. [[www.conectadosal.org](http://www.conectadosal.org)]

## Research activities:

**Digital Champions.** The Digital Champions project is an effort to tell the stories of creators, makers, and innovators who are transforming their environment and their communities for the better. Digital Champions are addressing topics such as gender, equity, rights, participation and civic engagement, discrimination, and poverty. They seek to share and create new opportunities with children and youth through digital media, giving people in their communities a chance to voice their stories and helping them in their pursuit of a positive and meaningful life. This year, the Digital Champions project sought young people with disabilities who have done innovative, interesting, and inclusive digital work, as well as youth groups and youth-led organizations that have done such digital work in partnership with adults and/or children with disabilities. [[www.digitallyconnected.org/digital-champions-empowering-young-people-with-disabilities](http://www.digitallyconnected.org/digital-champions-empowering-young-people-with-disabilities)]

**Youth and Digital Rights.** The increased access to and use of digital technologies is associated with a diverse set of risks and opportunities, which in turn interact in important ways with children and young people's rights. This year, Executive Director Urs Gasser and Sandra Cortesi wrote a book chapter, "Children's Rights and Digital Technologies: Introduction to the Discourse and Some Meta-Observations." The chapter provides an introduction to the nascent but quickly evolving children's digital rights discourse and aims to serve as a navigation aid. Furthermore, the team was involved in the development of RErights [[www.rerights.org](http://www.rerights.org)], an extension of the 2014 Rights of the Child in the Digital Age project led by Amanda Third (a Digitally Connected network participant) at Western Sydney University and the Young and Well Cooperative Research Centre. The site hosts an online community where young people can better understand their rights in the digital age by accomplishing fun and engaging operations and missions that encourage them to experiment with various forms of digital media.

**Collective book.** In collaboration with the Centro de Estudios Fundación Ceibal, the Digitally Connected network, the Institute of Communication and Image at the University of Chile, the Faculty of Communication and Information of the Republic (Uruguay), and GECTI at the Law Faculty of the University of Los Andes (Colombia), we are co-editing a book, *Jóvenes, transformación digital y formas de inclusión en América Latina*, focused on the digital practices and processes around the intersection between social inclusion and youth in the diverse contexts of Latin America. The book chapters cover areas such as new forms of organization, digital platforms, and civic participation; learning and information communications technology; new literacies and skills; new identities, emerging cultures, and strategies of social inclusion; rights and responsibilities; privacy; the digital economy as a culture maker; and new ways of creating value. The book is to be published in November 2017. [[www.jovenes.digital](http://www.jovenes.digital)]

## Library Innovation Lab Projects

### Caselaw Access Project

The Harvard Law School Library has undertaken an initiative to digitize all published U.S. case law. The ultimate goal of the Caselaw Access Project is to provide free public access to U.S. case law for the benefit of scholars, researchers, governments, entrepreneurs, the legal community, and the general public. The project team has completed scanning approximately 40 million pages and processing over 30 million pages. We expect the digitization effort to be complete by the end of 2017, when we will turn our attention to various modes of access and exploration of the data. The project is led by Director and Faculty Chair Jonathan Zittrain, Library Innovation Lab Managing Director Adam Ziegler, and Jack Cushman.

### H2O

As part of their commitment to providing open-source online educational resources and materials, the Harvard Law School Library and the Center have continued to collaborate to offer the suite of H2O classroom tools with a particular emphasis on free, adaptable digital casebooks. These online casebooks can be curated to fit the faculty's pedagogy and 19 teaching objectives, and to draw on a growing corpus of diverse materials. Adam Ziegler and Project Coordinator Brett Johnson have worked closely with Sebastian Diaz and outside developers to enhance the performance and usability of the H2O platform, to expand administrative capabilities, and to prepare for continued growth and adoption among faculty and other users. In the 2016–2017 academic year, the platform counted over 2,500 users, including an estimated 50 faculty who use H2O to develop, remix, and share online textbooks under a Creative Commons license.

[<https://h2o.law.harvard.edu>]

### Perma.cc

Perma is an open-source user-directed solution to link rot. It enables authors, journals, courts, and publishers to create archived versions of cited web sources and to direct readers to those archives using permanent, unique URLs. To ensure resiliency, the archive will be distributed among multiple “mirror” partners—principally libraries—that dedicate physical server capacity to the preservation effort. Perma is focusing initially on law journals and court opinions, where the problem is acute, as documented by Berkman Center Co-Founder, Director, and Faculty Chair Jonathan Zittrain, Co-Founder Lawrence Lessig, and Kendra Albert in their study, “Perma: Scoping and Addressing the Problem of Link and Reference Rot in Legal Citations,” 127 *Harv. L. Rev. F.* 176 (2014). The project is led by Zittrain and a team at the Harvard Law School Library. Perma currently counts over 200 library partners, including a majority of American law schools; over 1,000 journals, courts, and faculty members; and 15,000 individual account holders. Together, they have created over 480,000 Perma Links. The Perma Team won the 2015 Webby Award for the law category, and Perma is cited in The Bluebook as a reliable web archiving service. Perma also received a major grant from the Institute of Museum and Library Sciences to scale the service beyond academic legal scholarship and court opinions.

[<https://perma.cc>]

### **c. Clinical Work**

The Berkman Klein Center's Cyberlaw Clinic engages Harvard Law School students in real-world litigation, licensing, client counseling, advocacy, and legislative projects and cases covering a broad spectrum of legal issues. The Cyberlaw Clinic was the first of its kind, and it continues its tradition of innovation.

In recent years, the Clinic has grown dramatically in popularity due to the breadth and complexity of its projects, the variety of clients it serves, the sophistication of its pedagogy, and the richness of the connections it develops for its students among theory, doctrine, and practice. To accommodate this increased demand, this year the Clinic hired a new clinical instructor, Jessica Fjeld, and a new clinical instruction fellow, Mason Kortz. We will be hiring an additional fellow in the coming year. The Clinic also collaborated with outside advisors to provide students with additional opportunities and substantive breadth.

The Cyberlaw Clinic enrolled 26 students in fall 2016, 2 continuing students in winter 2017, and 34 new and continuing students in spring 2017, for a total of 62 student slots during the 2016–2017 academic year. Those students enrolled for a total of 204 credits over the course of the year, in accordance with a new Harvard Law School clinical credit system that more accurately reflects student hours worked in granting credits for enrollment in clinics. Overall, the Clinic's supervising attorneys managed nearly 10,000 hours of student work.

During the summer, the Clinic welcomes students from a diverse range of law schools to continue its ongoing work for existing clients and help with intake for the coming year. In summer 2017, the Clinic brought on three law student interns.

#### Substantive Practice and Client Base

During the 2016–2017 academic year, the Clinic continued to focus its work on subject areas including litigation, intellectual property, privacy, online safety, free speech and media law, digital civil liberties, government innovation, regulatory compliance, and general Internet business law. The Clinic's work in these areas ran the gamut from preparing legal research memoranda for clients to drafting transactional and public-facing policy documents and to representing clients in negotiations or as *amici curiae*.

The Clinic served a significant number and a broad range of clients, including individuals, small and mission-driven startups, nonprofit organizations and advocacy groups, academics, government entities, and arts and cultural institutions. Simultaneously, the Clinic intensified its strategy to integrate student representation and legal support with research projects at the Berkman Klein Center for Internet & Society. One notable example is the Clinic's support of the Berkman Klein Youth and Media team in developing a series of learning experiences for youth around copyright law. Clinic students attended a workshop at a local school designed to identify student needs and provided feedback to the YaM team on the structure and details of the lessons. The students also crafted a series of educational materials,

including a glossary of copyright-related terms as well as summaries of the law around public domain, parody, and Creative Commons licenses.

### Teaching and Pedagogy

The Clinic staff continued to refine the program's mode of engaging with students inside and outside the classroom, honing the Cyberlaw Clinic Seminar to accommodate an expanded student roster. The class offered students opportunities to learn about practice and professional responsibility issues that arise when counseling clients on matters relating to technology, intellectual property, privacy, and speech. It also permitted students to participate in skill-building exercises and—perhaps most important—regular case rounds sessions in which they shared information about their projects and learned from one another. The Clinic's supervisors taught other courses and engaged in other teaching initiatives this year as well, as noted under the heading "Contributions to Harvard Teaching Programs" below.

One of the highlights of the Seminar remained its dedicated role-play session, which has been developed over the past couple of years and offers students an opportunity to engage in discussions and negotiations around a hypothetical fact pattern relating to a technology law and policy hot topic. Students this year seized the opportunity to engage with the problems and with their colleagues, advocating the full range of perspectives during small breakout discussions that addressed drones, intellectual property protections in laws drafted by private standard-setting organizations, ride-sharing services, and more.

### Representative Cases and Matters

A few notable examples of cases and projects handled by Clinic students during the past academic year are as follows:

*(a) Litigation.* The Clinic, both directly and working in tandem with law firms located around the United States, has represented individuals and organizations in pre-litigation disputes and active litigation across subject areas ranging from intellectual property to media law. Of particular note in 2016-17:

- The Clinic represented a longstanding client who was summoned to testify in a high-profile lawsuit between two other parties.
- The Clinic successfully represented a member of the Harvard University community who was threatened with a lawsuit in relation to bona fide representations they made to the media concerning their academic research activities and the state of scholarship in their discipline.

*(b) Intellectual Property.* Copyright and other intellectual property issues appeared frequently on the Clinic's docket. Of particular note:

- The Clinic advised a local public media outlet on copyright issues, including the necessity of securing public performance licenses for use of materials on social media, and the relevance of the origin of the source material to a fair use determination.
- The Clinic organized to moot a prominent local copyright attorney before he argued a novel point of copyright law in a case before the First Circuit Court of Appeals.
- The Clinic worked with more than one archival project seeking to develop and/or open content archives to researchers and the public. A Clinic student in the spring semester engaged in a thorough analysis of the internal review system of one archive and proposed to its management a

process by which Clinic students in future semesters could participate to increase the efficiency with which high-risk materials are identified for review by the archive's in-house counsel.

- The Clinic advised clients on copyright and trademark matters, including extensive counseling of a documentary film team about copyright questions, licensing, and fair use and intellectual property matters; advising clients about the viability and registrability of proposed trademarks; and exploring emerging issues involving the ownership and licensing of copyright in works generated by artificial intelligences.

(c) *Privacy and Data Security.* As public concern continues to mount over the privacy and security of the information people entrust to the digital devices and services they use every day, privacy has grown into the Clinic's busiest practice area. A significant majority of the projects the Clinic takes on now involve a privacy component; some of the highlights of our work last year are:

- The Clinic submitted an amicus brief to the Massachusetts Supreme Judicial Court on a case of first impression considering whether the executors of an estate may access the digital accounts of an individual who died intestate. The Clinic's brief on behalf of a coalition of trusts and estates law experts argued that executors should be granted such access by default, unless an individual directs otherwise in their will.
- The Clinic prepared a memo for an international nongovernmental organization in support of that organization's efforts to aid Pakistani legislators in drafting a data privacy bill for Pakistan, which currently has no national legislation on the subject. The Clinic's memo summarized data privacy protections in five other jurisdictions including the United States, covering topics from the definition of sensitive data to enforcement strategies, as well as providing a primer on international law and Pakistan's relevant treaty obligations. The Clinic will continue to engage with the client as it advocates for a balanced, privacy-protective data protection bill in Pakistan.
- The Clinic advised Customer Commons, an organization dedicated to giving individuals a voice in their interactions with businesses online, in the creation of a first-of-its-kind "terms of use" agreement for customers to serve on vendors, rather than the other way around. The Clinic students assigned to the project worked with the Customer Commons team to draft legal language to reflect the "human readable" terms that the client had established and to identify other key elements for consideration for inclusion in the agreement.
- The Clinic advised a nonprofit startup in the law enforcement technology space on how to design its product to be effective while reducing the risks to their users' privacy should they ever suffer a data breach.

(d) *Online Safety.* The Cyberlaw Clinic continued to promote online safety—especially youth online safety—through a wide range of collaborations concerning privacy and related issues. Notably:

- The Clinic advised a nonprofit that works to counter online sex trafficking on a variety of issues, including how open-source licensing schemes might impact its development of software tools to further its work.
- The Clinic drafted terms of use and a privacy policy for an education technology company seeking to implement high standards for student data privacy.

*(e) Free Speech and Media Law.* The Cyberlaw Clinic has been very active in addressing the broad spectrum of legal issues faced by those who express themselves online or host the expression of others on services that they operate. The Clinic has provided advice and counsel in matters involving First Amendment issues, defamation claims, and anonymous speech online. Of note this year:

- The Clinic advised a freelance radio reporter and podcaster who was threatened with a defamation lawsuit if she reused controversial material that had aired on a public radio story in a podcast. Clinic students moved quickly and worked with local counsel to advise the client on the substance of the law of defamation in the relevant jurisdiction and ancillary legal issues, and endeavored to give the client a realistic picture of the likelihood that the potential suit would survive to various stages of litigation. When, following her review of the legal memo, the client decided to proceed with the use of the tape, the students engaged in a prepublication review of the script of the relevant podcast episode.
- On behalf of an international press freedom organization, the Clinic evaluated the potential impacts of a law introduced in a Caribbean country on free expression and suggested amendments to the bill that would alleviate these difficulties.
- The Clinic prepared a comprehensive memorandum for the Bogota-based Center for Justice and International Law evaluating how six countries balance the right to free expression against the need to protect vulnerable individuals from threats to their safety.
- Clinic students, along with clinical instructor Vivek Krishnamurthy and clinical advisor Nani Jansen Reventlow, authored a study cataloging when courts around the world have issued orders requiring the removal of online content beyond their borders.
- The Clinic contributed to an amicus brief in a First Circuit case on the constitutionality of the Massachusetts anti-SLAPP statute. Specifically, clinical students researched and drafted arguments based on the legislative history of the statute. The brief was filed by the Clinic on behalf of multiple nonprofit and professional organizations that have relied on anti-SLAPP laws in Massachusetts and elsewhere to defend freedom of the press.

*(f) Digital Civil Liberties.* During the past year, the Cyberlaw Clinic has continued to work with leading domestic and international civil liberties organizations to study the legality of a range of surveillance and investigative techniques used by governments here in the U.S. and around the world. Our work has ranged from evaluating how various actors can shed more light on the scope and scale of government information requests to advising our clients on possible avenues for reform through legislation and litigation. Of particular note:

- The Clinic prepared a comprehensive memo for an international human rights organization examining how federal, state, and local law enforcement agencies use cell site emulation devices (commonly known as “stingrays” or “IMSI catchers”) when conducting criminal investigations.
- Clinic students prepared two backgrounders to educate defense attorneys across the country on how to challenge the use of novel surveillance technologies and techniques in court.
- The Clinic advised the Global Network Initiative—a multi-stakeholder organization bringing together technology companies, academics, civil society organizations, and socially responsible investors—on how to streamline and improve its process for assessing its company members’ compliance with the organization’s principles on free expression and privacy.

- The Clinic prepared a legal analysis of the constitutionality of the Department of Homeland Security’s practice of searching electronic devices at the border and requiring certain travelers to the U.S. to divulge their social media usernames and passwords.
- Three Clinic students drafted a research paper on emerging challenges and best practices for data governance by law enforcement agencies. The paper is one of four that will be presented at a workshop at Stanford Law School in October, 2017.

(g) *Government Innovation*. During the 2016–2017 academic year, Clinic students worked on a number of government technology projects, including projects with the Commonwealth of Massachusetts and the City of Boston. Highlights include:

- As part of our longstanding partnership with the Massachusetts Office of Information Technology (MassIT), the Clinic provided advice on the development of a cybersecurity incident response plan for the entire state government.
- Clinic students worked with a municipal government to develop options for the construction of a fiber-optic network to support that city’s operations.
- The Clinic helped a municipal government draft terms of service for its open data portal.
- The Clinic advised Boston Mayor Marty Walsh’s Office of New Urban Mechanics on approaches other cities have taken when pursuing public-private partnerships for the development of smart city infrastructure to govern the use of data collected pursuant to these partnerships.

#### Clinic Events and Outreach

Clinic staff organized and participated in a variety of events and outreach to the HLS community and beyond during the past year, including the following:

- Members of the Clinic team participated in the Berkman Klein Center’s AI Advance, a multidisciplinary gathering and discussion of emerging issues in the field of artificial intelligence and related ethics and governance questions.
- The Cyberlaw Clinic and the *Journal of Law and Technology* hosted Peter Menell, Koret Professor of Law and Director, Berkeley Center for Law & Technology, at the University of California at Berkeley School of Law, for a discussion of an Oracle lawsuit against Google for its use of APIs related to the Java interface, titled “Rise of the API Copyright Dead? An Updated Epitaph for Copyright Protection of Network Features of Computer Software.”
- Clinical instructor Vivek Krishnamurthy and Clinical advisor Nani Jansen Reventlow presented a research study they co-authored with students Alicia Solow-Niederman and Francisco Javier Careaga Franco on the territorial scope of content takedown orders at RightsCon Brussels.
- Clinical instructional fellow Mason Kortz moderated the panel Access to Government Information: Using FOIA and state FOI laws in support of law and policy advocacy.” Panelists included fellow Clinic members from Harvard Law School and Michael Morisy of MuckRock, a nonprofit, collaborative news site that provides a repository for government materials and information on how to file FOIA requests. Kortz also spoke on a “Privacy and Cybersecurity” panel at the Boston University School of Law Strategic Engagement Forum, which was moderated by his predecessor, Andy Sellars.
- Clinical instructor Jessica Fjeld gave a presentation to the Media & Communications Law committee of the New York City Bar on Seventh Amendment–based challenges to anti-SLAPP

statutes nationally as the issue came into play in the Clinic’s amicus brief for the Reporters Committee for Freedom of the Press in the First Circuit case *Steinmetz v. Coyle & Caron*.

- Past and present members of the Clinic team participated in the symposium “Transparency and Freedom of Information in the Digital Age,” which gathered together experts and practitioners to discuss how the Internet has transformed government accountability and citizen input, freedom of information requests and disclosures, and whistleblowing, both legally and through unauthorized channels. Clinic Director Christopher Bavitz, advisor Nani Jansen Reventlow, and former Clinic fellow Andy Sellars moderated and participated in panels throughout the event.
- Last October, Cambridge Community Television hosted a “mini-conference” on the media and elections. Clinic Director Christopher Bavitz moderated a panel alongside members of the greater Boston news media.
- The Cyberlaw Clinic joined with the National Security Law Association, the *National Security Journal*, the *Journal on Law and Technology*, and the Office of Public Interest Advising to welcome Glenn Gerstell, general counsel for the NSA, in October 2016.

Members of the Clinic’s teaching team continued to engage with the broader public through writing and interactions with media. Notable examples include:

- Clinical instructional fellow Mason Kortz talked to Quartz about the scope of the reasonable expectation of privacy, “Uber drivers are filming their riders and sharing the tapes online” (Alison Griswold, June 1, 2017).
- Vivek Krishnamurthy penned an op-ed in the *Boston Globe*, “The Senate, Not the President, Should Choose the Next FBI Director” (May 12, 2017).
- Professor Susan Crawford authored an op-ed in the *New York Times*, “Donald Trump’s Multi-Pronged Attack on the Internet” (April 17, 2017).
- Vivek Krishnamurthy addressed the Twitter-based attack on reporter Kurt Eichenwald in the *New York Times*, “A Tweet to Kurt Eichenwald, a Strobe and a Seizure. Now, an Arrest” (Cecilia Kang, March 17, 2017).
- Clinic Managing Director Christopher Bavitz, Clinic assistant director Vivek Krishnamurthy, and Clinic advisor Nani Jansen Reventlow teamed up for an op-ed in the *Washington Post*, “A French court case against Google could threaten global speech rights” (December 22, 2016).

#### **d. Other Activities**

Through discussions, lectures, conferences, workshops, and other gatherings, the Berkman Klein Center convenes diverse groups around a wide range of topics that examine the Internet as a social and political space. The unique interactions generated through these events both as process and as product are fundamental elements of the Center’s modus operandi. While research and teaching are the Center’s top priorities, these auxiliary connections facilitate the continuous expansion and renewal of the Center’s core network. They also stimulate interactions with other disciplines and institutions so that diverse perspectives from academics, policy makers, activists, students, and technologists can be brought to bear on the complex issues generated by the interaction between technology and society.

i. Conferences

The Center's conferences engage students, faculty, and fellows as well as government representatives, business leaders, and civil society members through their unique tenor and approach, and often lead to new collaborations. A selection from this year:

**Born Digital - How Children Grow Up in a Digital Age:** John Palfrey, Head of School at Phillips Academy, Andover, and Urs Gasser, Executive Director of the Berkman Klein Center, convened a discussion for the launch of an expanded and updated version of their critically acclaimed 2008 book *Born Digital: Understanding the First Generation of Digital Natives*.

**Power and Participation in the Networked Public Sphere:** Moderated by John Palfrey, this was a creative discussion about the impact the networked public sphere has had, and continues to have, on global events, power dynamics, and our society at large, and how that influence may change in years to come. Panelists included Director Yochai Benkler, Catherine Bracy, Intisar Rabb, Zeynep Tufekci, and Faculty Chair Jonathan Zittrain.

**Executive Education Program on Digital Security for Directors and Senior Executives:** Berkman Klein faculty and staff designed an executive education program intended to help strategic decision makers (e.g., board members, senior executives) build literacy on cybersecurity issues and develop the necessary skills to navigate legal and policy challenges in the midst of a crisis.

**Open Music Initiative:** The Center co-hosted the first Open Music Initiative Policy Summit with Berklee College of Music, with the support of the MIT Media Lab Digital Currency Initiative, IDEO, and Content Labs.

**Responsive Communities - The Future of IoT in Cities:** Responsive Communities addresses the most important issues of social justice, civil liberties, and economic development involving Internet access and government use of data. This private meeting brought together city officials charged with responsibility for IoT strategy and implementation and representatives of U.S. philanthropic foundations, who learned about IoT issues and realities with an eye toward future grantmaking.

**Defining Fairness - On the Sociotechnical Algorithms and Systems of the Future:** Data, algorithms, and systems inherently have biases embedded in them reflecting designers' explicit and implicit choices, historical preconceptions, and societal priorities. This workshop sought to bridge technical and social discussions by bringing together scholars from a wide variety of fields, including economics, social justice theory, game theory, law, philosophy, ethics, political science, sociology, African-American studies, gender studies, and computer science. Participants considered key notions and definitions of concepts such as fairness, equality, and justice from the multiple literatures and acquired an understanding of the norms that have developed to advance these values.

**Civic Media: Technology, Design, Practice:** The editors of and contributors to the new book *Civic Media: Technology, Design, Practice* came together for a discussion on the role of civic media in the

changing face of democracy around the world. Panelists included Ethan Zuckerman (MIT), Colin Rhinesmith (Simmons), Beth Coleman (University of Waterloo), Ceasar McDowell (MIT), and Peter Levine (Tufts). The discussion was moderated by editors Eric Gordon and Paul Mihailidis.

**Transparency and Freedom of Information in the Digital Age:** This symposium examined the present state of play with respect to transparency and freedom of information. It incorporated short sets of remarks and “interventions” offering perspectives on the current landscape. The first of these offered a “view from the inside,” considering how government actors operate in an atmosphere of increased transparency and citizen engagement. The second offered a “view from the outside,” as those interested in promoting transparency and accountability considered the ways in which the Internet has impacted their work. The event was hosted by Harvard Law School and the Berkman Klein Center, with generous support from HLS alumnus Mitch Julis.

**Knight Foundation | Library Innovation Lab | Berkman Klein Center:** The Knight Foundation, Harvard Law School Library Innovation Lab, and Berkman Klein Center assembled to exchange ideas, share successful patterns of building, and launch prototype efforts on nine exciting projects, all winners of the most recent Knight News Challenge prototype grants for libraries, backed by the Knight Foundation.

**Algorithms, Law and Society - Building Rights for a Digital Era:** The workshop presented perspectives on how different actors are mobilizing information communications technology to change lawmaking and legal services. The workshop aimed to contribute to understanding the potential development of the use of ICT in these areas. It brought together people from different backgrounds—legal academics, engineers, company representatives, and former public authorities—to discuss these topics.

**US Communications at a Crossroads:** This event featured Chairman of the Federal Communications Commission Tom Wheeler in conversation with Harvard Law School Professor Susan Crawford about his work at the FCC, and where telecommunications might go under the next administration.

**#Republic: Divided Democracy in the Age of Social Media:** This event featured author Cass Sunstein, the Robert Walmsley University Professor at Harvard Law School, who discussed his new book, *#Republic*. The book describes ways in which today’s Internet is driving political fragmentation, polarization, and even extremism—and what can be done about it.

**Fake News, Concrete Responses: At the Nexus of Law, Technology, and Social Narratives:** This special Harvard Law School–Berkman Klein Center panel, moderated by Martha Minow, Dean of Harvard Law School, featured Sandra Cortesi, Nathan Matias, An Xiao Mina, and Center Faculty Chair Jonathan Zittrain on a lunch panel that drew from an interdisciplinary ecosystem of experts to discuss the ways in which we might craft tools and solutions at the nexus of law, technology, and the social sciences.

**Universities and IP - What should universities do with their patents?:** The Center brought together academicians and staff from university tech transfer offices and government (e.g., the U.S. Patent and Trademark Office) to talk about how universities can better handle their patent portfolios to support the dissemination of research and allow equitable public access to knowledge. The goal of the workshop was to produce a set of recommendations that universities may potentially adopt.

**Symposium on Comparative Online Privacy:** Students attending Executive Director Urs Gasser's "Comparative Online Privacy" course identified, mapped, analyzed, and discussed from a comparative perspective the latest developments in privacy law related to the digital environment, and put them into a broader context. The Symposium served as the apex of their efforts, centering on the future of digital privacy and drawing from luminaries across the public and private sectors to highlight and address some of the most pressing privacy concerns of our era.

**Assembly 2017 Cohort Final Presentations:** After launching the 2017 Berkman Klein Assembly pilot program in January, the Center hosted this diverse group of programmers and tech professionals to showcase their final projects.

**Building Better Bridges for an Open Internet:** This two-day workshop hosted by the Center with Berkman Klein fellow and attorney Nani Jansen brought together people from the academic, technological, advocacy, and legal spheres and from diverse countries to discuss how collaboration across these disciplines can benefit strategies for litigating Internet-related issues.

**Boston Broadband Summit:** Hosted by the Municipal Fiber Project of the Berkman Klein Center, this free public event brought Boston and Brookline CIOs together to discuss ongoing efforts to foster private-sector competition in providing high-speed wired and wireless Internet access, and challenges experienced in trying to work across state agency boundaries to obtain fiber-optic network access to boost local bandwidth and reduce costs.

**The International State of Digital Rights, a Conversation with the UN Special Rapporteur - David Kaye in conversation with Nani Jansen Reventlow:** In this event co-sponsored by the Center and the Human Rights Program at Harvard Law School, David Kaye was joined in conversation by Nani Jansen Reventlow, a fellow at the Berkman Klein Center and adviser to the Cyberlaw Clinic. They discussed Kaye's upcoming thematic report on digital access and human rights, as well as the most burning issues regarding free speech online and digital rights, including encryption, fake news, online gender-based abuse, and the global epidemic of Internet censorship.

**Next Gen Podcast Distribution Protocols - Innovation and Governance in Open Development Initiatives:** The Berkman Klein Center and the Tow Center for Digital Journalism co-hosted a symposium, in collaboration with the syndicated.media open working group, to address the process of developing standards that support the distribution of syndicated audio content. The goal of the symposium included furthering cooperation among various players in the world of podcast creation and

distribution and consideration of recommendations on standards, enhancements, extensions, and other methods to support the growth of podcasting as an open and inclusive medium.

**AI Advance:** This full-day community kickoff event for the new Ethics and Governance of AI Initiative brought together the Berkman Klein Center and MIT Center for Civic Media teams working on this initiative for learning, acting, and reflection and engagement on the important societal challenges of AI and related technologies. The Advance served as an opportunity to learn from one another across disciplines and perspectives and to explore how our individual and collective research, teaching, building, networking, and other activities here in Cambridge are increasingly intersecting with and impacted by the rise of AI.

**CopyrightX Summit:** This three-day summit brought together current and prospective affiliate teachers/instructors of CopyrightX to share experiences teaching or organizing a CopyrightX affiliate course, to plan future collaborations, and to discuss developments in international copyright jurisprudence with fellow members of the CopyrightX community.

**Lower Ed - The Troubling Rise of For-Profit Colleges in the New Economy:** This book talk featured author Tressie McMillan Cottom, Berkman Klein Center faculty associate, who drew on more than 100 interviews with students, employees, executives, and activists to write *Lower Ed*. The book tells the story of the benefits, pitfalls, and real costs of a for-profit education. It is a story about broken social contracts; about education transforming from a public interest to a private gain; and about the challenges all Americans face in our divided, unequal society.

**Jonny Sun and Jonathan Zittrain in conversation - Author of the Book “everyone’s a aliebn when ur a aliebn too” by jonny sun (the aliebn):** Jonny Sun and Faculty Chair Jonathan Zittrain discussed this illustrated book which tells the story of a lost, lonely, and confused alien finding friendship, acceptance, and love among the creatures of Earth. Constructed from Sun’s re-contextualized tweets, the book is also a creative thesis on the narrative formats of social media and a defense of the humanity-fulfilling aspects of social media born out of his experiences on Twitter.

**Harmful Speech Online - At the Intersection of Algorithms and Human Behavior:** The Berkman Klein Center hosted this two-day workshop to broadly explore harmful speech online as it is affected by the intersection of algorithms and humans, and to create networks and relationships among stakeholders at this nexus. Findings from the sessions helped shape outputs, which included various written pieces, the creation of mechanisms for network building, continued knowledge sharing across sectors, and avenues for future collaboration amongst attendees.

**Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy:** Microsoft Research’s Social Media Collective and the Berkman Klein Center welcomed author Cathy O’Neil, who read from her award-winning book *Weapons of Math Destruction* and engaged in a timely discussion about the role of data science in public life. The event was hosted at NERD and was followed by a mixer.

The Center also participated in various international events for the NoC and YaM Projects. We continued support with event logistic efforts for the Digital Asia Hub and the LatAm Hub. These project-related events are described in the Research and Scholarship section of this report. <sup>[1]</sup><sub>[SEP]</sub>

We also hosted various local events and supported them logistically. These include the Workshop on Case-Based Judicial Decision-making; CopyrightX 2017; a talk, “Litigating Free Speech Cases in the African Regional Courts,” by fellow Nani Jansen co-sponsored by the Human Rights Program at Harvard Law School; a Born Digital 2.0 launch at Phillips Academy, Andover; several student gatherings focused on the Artificial Intelligence Initiative; a workshop hosted at the Academy of Arts and Sciences titled “Law, Privacy, and the Self”; a Class Day reception for graduating Cyberlaw Clinic students; a Ted Koppel interview with Yochai Benkler on CBS; YaM focus groups including “Researcher Experiences in the Current Media Moment” with Monica Bulger and Leah Plunkett; and the Online Humor Conversation Series at MIT.

## ii. Workshops and Writing Groups

- Though writing is a priority for many members of the Berkman Klein community, the process of establishing productive writing routines can still be a challenge. Inspired by the model successfully used by Stanford’s Dissertation Boot Camp, Rachel Kalmar organized a writing group that met one to three times a week at the Berkman Klein Center. The purpose was to use social pressure to aid members in achieving their own goals. When the group met, members gave a one-sentence description of what they planned to write that day. Except during a 15-minute break, group members agreed not to talk, check email or social media, or otherwise engage in non-writing activities. Attendance varied throughout the semesters, but feedback was unanimous that this structure was helpful.
- During the 2016–2017 academic year, the Berkman Klein fellows, led by John DeLong, held a weekly reading and research group focused on issues of national security, privacy, and government oversight. Participants from a wide range of backgrounds explored, in depth, current and important topics such as the FISA Amendments Act Section 702, the structure of the intelligence community, and a number of current-events driven subjects, such as unmasking protocols. In the spirit of Center activities, this reading and research group provided a unique opportunity for many perspectives to work through these complex issues.
- Early in the fall semester of 2016, An Xiao Mina, Rachel Kalmar, and Jason Griffey rallied their combined interests in hardware and development to create a geographically distributed working group. Together with Malavika Jayaram, David Li, and other researchers at Digital Asia Hub, the discussion group linked researchers around the world to discuss diverse topics relating to the future of hardware, from memes to medical devices and open-source to firmware. Discussions often were by way of remote meetings and a Slack channel, bringing together a surprising diversity of topics and perspectives.
- The Online Harassment and Violent Threats Working Group convened weekly to discuss topics of interest at the intersection of social media, harassment and threats of violence, and online violent extremism. As part of this, the group discussed related news and highlights of the week with a particular focus on the implications and complications of such news for local communities of users outside the United States. The group also facilitated conversations and

provided feedback on specific case studies and/or ongoing work by group members. Occasionally, guests from the broader Center community and beyond were invited to discuss their work in progress and potential collaborations. For example, in May 2017, Nighat Dad, representing Digital Rights Pakistan, came to discuss an online harassment help line in Pakistan.

- Over the past year, the Berklett Cybersecurity project convened seven day-long meetings that brought together experts from academia, civil society, industry, and the U.S. intelligence community. Members of this group discussed a wide range of enduring problems in surveillance and cybersecurity, such as encryption, public-private information sharing, software liability, and the vulnerability equities process.
- The metaLAB at Harvard hosted a semester-long open Sanctuary Seminar—a combination workshop, intervention, and studio—to explore refuge and asylum in an age of displacement.
- The weekly Berkman Klein Geeks Hour brought together geeks and friends for events such as skill-shares on 3-D printers, vinyl cutters, and bike maintenance; a tour of Harvard’s Data Center; and talks by guest speakers about emerging tech.

### iii. Events

*Luncheon Series.* For over a decade, the Center has hosted our flagship seminar and discussion series in our offices or on campus. These presentations attract a loyal following among students, faculty, and others from Harvard and beyond, are webcast live, and are made available as a podcast series. Many important projects and scholarly works have been vetted and influenced early in their trajectory at the Berkman Luncheon Series. This year’s seminars featured the following conversations (in chronological order):

- **Jonathan Zittrain**, the George Bemis Professor of International Law at Harvard Law School and the Harvard Kennedy School of Government, Professor of Computer Science at the Harvard School of Engineering and Applied Sciences, Vice Dean for Library and Information Resources at the Harvard Law School Library, and co-founder of the Berkman Klein Center for Internet & Society, led an interactive learning conversation about the Center and its network of researchers, activists, faculty, students, technologists, entrepreneurs, artists, policy makers, and lawyers.
- **Susan Crawford**, Clinical Professor of Law, Harvard Law School, whose talk was featured as part of Boston’s HUBweek programming, discussed the Responsive Communities Initiative, which addresses some of the most important issues of economic development, social justice, and civil liberties of our time: those prompted by Internet access. The program pursues three areas of research involving the Internet, data, and government: Internet access infrastructure, Data governance, and Responsive Communities leaders.
- **Samer Hassan** is an activist and researcher, fellow at the Berkman Klein Center, and associate professor at the Universidad Complutense de Madrid, in Spain. Hassan shared the results of three years of research within the EU-funded P2Pvalue.eu project, aimed at translating social research into online tools to increase the participation and sustainability of commons-based peer production communities.

- **Kendra Albert**, Berkman Klein affiliate and recent Harvard Law School graduate, explored how introducing legal terms of art invoked for their weight but often divorced from law, known as legal talismans, impacts online platforms and how we can move beyond legalities to systems that are more considerate of all users.
- **Tim Wu**, author, policy advocate, professor at Columbia Law School, and director of the Poliak Center for the study of First Amendment Issues at Columbia Journalism School, discussed his new book, *The Battle for Our Attention*, in an event collaboration with the Shorenstein Center for Media, Politics, and Public Policy.
- **Paola Villarreal**, Berkman Klein fellow, discussed the Data for Justice project, an initiative that aims to make open data actionable, empowering lawyers, advocates, community organizers, journalists, activists, and the public by developing tools and frameworks that digest complex databases without losing sight of the ultimate goal: to tell a story that can effect social change and justice.
- **Aaron Perzanowski**, Professor of Law at Case Western Reserve University, discussed his book *The End of Ownership: Personal Property in the Digital Economy*, sharing recent shifts in technology, intellectual property and contract law, and marketplace behavior that threaten to undermine the system of personal property that has structured our relationships with the objects we own for centuries.
- **Scott O. Bradner**, Berkman Klein affiliate, provided a history of ICANN, IANA, and the transition process once the Obama Administration allowed ICANN to assume sole responsibility for the development of policy over the naming and numbering function of the Internet.
- **Raj Goyle**, co-CEO of Bodhala, a leading legal technology company, and **Ari Shahdadi**, vice president of business development at BuzzFeed, both recent graduates of Harvard Law School, discussed the innovative nature of law and how technology has systematically brought great change to almost every profession except the teaching and practice of law.
- **Kishonna L. Gray**, Berkman Klein faculty associate and founder of the Critical Gaming Lab at Eastern Kentucky University, discussed the frameworks of Black Digital Feminism and examined how structures and tools influence practices to resist such hegemony.
- **Dan Greene**, postdoctoral researcher with the Social Media Collective at Microsoft Research New England, discussed three years of fieldwork at public libraries in Washington D.C. and interviews with librarians and homeless patrons, to explore how poverty comes to be understood as a “digital divide” and how that framework changes the nature and purpose of public institutions in an era of skyrocketing inequality.
- **Christoph Graber**, Berkman Klein faculty associate, discussed whether we can observe the emergence of a new constitutional right relating to the Internet—a right that not only protects individuals in their communication online but also protects the Internet as an institution.
- **Marvin Ammori**, general counsel of Hyperloop One and a Harvard Law School alumnus, discussed the challenges and opportunities for crafting a new legal framework that could govern the deployment of hyperloop systems.

- **Sandra Braman**, Abbott Professor of Liberal Arts at Texas A&M University, discussed her analysis of Requests for Comments, 1969–1999, and how policy makers thought and think about policy issues while addressing technical problems on the Internet.
- **Juan Carlos De Martín**, Berkman Klein faculty associate, in conversation with Berkman Klein founder **Charles Nesson**, discussed his new book, *Università Futura*. The world is facing five global challenges—democratic, environmental, technological, economic, and geopolitical—that will require both enormous amount of knowledge and citizens capable of using such knowledge in scenarios that today are hard to predict. According to De Martin, the university is clearly the main institution that could help society on both counts.
- **Dylan Mulvin**, postdoctoral researcher at Microsoft Research New England, revisited the year 2000 problem and the politics of technological repair.
- **An Xiao Mina**, Berkman Klein fellow, talked about what sorts of objects new forms of hardware culture enable and what role the Internet now plays in all steps along the way, from ideation to sales to manufacturing to shipping. She asked how we might now incorporate physical objects into our notions of Internet memes and what this suggests about the future of object culture more generally.
- **Maurice Stucke**, on faculty at the University of Tennessee College of Law and author of *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy*, discussed his new book and the timely questions it raises about online shopping.
- **Michal Gal**, professor and Director of the Forum on Law and Markets at the Faculty of Law, University of Haifa, Israel, and **Niva Elkin-Koren**, Berkman Klein faculty associate and Visiting Professor of Law at Harvard Law School, discussed how algorithmic consumers have the potential to dramatically change the way we conduct business, raising new conceptual and regulatory challenges.
- **Joi Ito** and **Iyad Rahwan** of the MIT Media Lab discussed the potential of and the challenges with AI technologies that can vastly enhance the performance of many systems and institutions but may also create moral hazards by diminishing human accountability, perpetuating biases that are inherent to the AI's training data, or optimizing for one performance measure at the expense of others.
- **Mr. Jean-Pierre Blais**, Chairman of the Canadian Radio-television and Telecommunications Commission, joined us for an event co-sponsored by the Harvard Law School Canadian Law Student Association to speak about broadband, Internet, and the future of connectivity in Canada and around the world.
- **Eldar Haber**, Berkman Klein faculty associate, discussed the concept of criminal rehabilitation in the digital age and how we can make possible proper reintegration into society for individuals with a criminal history that was expunged by the state even as their wrongdoings remain widely available through commercial vendors (data brokers) and online sources like mugshot websites, legal research websites, social media platforms, and media archives.
- **Ifeoma Ajunwa**, Berkman Klein fellow, talked about her research around the rights of the worker in a society that seems to privilege technological innovation over equality and privacy.

- **Zeynep Tufekci**, Berkman Klein faculty associate, joined us to talk about her new book, *Twitter and Tear Gas: The Power and Fragility of Networked Protest*. To understand a thwarted Turkish coup, an anti–Wall Street encampment, and a packed Tahrir Square, we must first comprehend the power and the weaknesses of using new technologies to mobilize large numbers of people.
- **John Schindler** from the Federal Reserve, **Jeff Bandman** from the Commodity Futures Trading Commission, **Valerie Szczepanik** from the Securities and Exchange Commission, and **Patrick Murck**, Berkman Klein fellow, discussed the challenge of regulating through disruption and how federal agencies can modernize their approach to keep up with innovation.
- **Elizabeth Ellcessor**, author of *Restricted Access: Media, Disability, and the Politics of Participation*, and **Meryl Alper**, author of *Giving Voice: Mobile Communication, Disability, and Inequality*, spoke with additional panelists in collaboration with Harvard Law School Dean of Students Office, Accessibility Services, about the topic of disability, technology, and inclusion in public and private, and in digital and digitally mediated spaces.

*Brown-Bag Series.* The Center began hosting two monthly brown-bag luncheon series over the past year that take deeper dives within a specific topic area. This year’s brown-bag series focused on digital health, co-hosted with the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics; and the Global Access in Action Project co-hosted with the Harvard Global Health Institute. The two series featured the following conversations (in chronological order):

*Digital Health Brown-Bag Series*

- **Adrian Gropper** talked about his work putting patients in charge of their health records, arguably the most valuable and most personal kinds of connected information about a person.
- **Natalie Gyenes** and **Brittany Seymour**, both Berkman Klein fellows, discussed their research around how public health echo chambers manifest themselves online. They used the Media Cloud suite of tools to conduct three mass media case studies on Ebola, Zika, and vaccination. Their findings show that public health information networks are largely unsuccessful in driving an evidence-based information network narrative around any of the case study topics.
- **Caroline Buckee**, associate director of the Center for Communicable Disease Dynamics at the Harvard School of Public Health, discussed her work using mobile phone data to model and forecast disease outbreaks, as well as the potential pitfalls and ethical issues associated with the increasingly routine use of these data in the public realm.
- **Josephine Wolff**, Berkman Klein faculty associate, looked at how hospitals are grappling with new security threats like ransomware attacks, as well as the ways that the focus on HIPAA compliance has, at times, made it challenging for these institutions to adapt to an emerging threat landscape.

*Global Access in Action Brown-Bag Series*

- **William Fisher**, WilmerHale Professor of Intellectual Property Law at Harvard Law School and a Director of the Berkman Klein Center for Internet & Society, presented on the potential for

miniature spectrometers to reduce the use and distribution of counterfeit drugs in Sub-Saharan Africa.

- **Quentin Palfrey**, Co-Director of the Global Access in Action project at the Center and the Executive Director of J-PAL North America, an anti-poverty research center at MIT, presented on practical approaches to increasing global medicine accessibility and encouraging R&D on diseases that burden the world's most vulnerable populations.
- **Mark Wu**, assistant professor of Law at Harvard Law School and a Director of the Berkman Klein Center, facilitated a discussion on global data flows and their implications for health access in low- and middle-income countries.

The Center continued to host monthly internal community-facing luncheons over the past year: Cass R. Sunstein, the Robert Walmsley University Professor at Harvard, presented around research for his book, *#Republic: Divided Democracy in the Age of Social Media*; Urs Gasser, Executive Director of the Berkman Klein Center for Internet & Society and a Professor of Practice at Harvard Law School, together with several Center research project teams, discussed translating research for action; Yochai Benkler, the Berkman Professor of Entrepreneurial Legal Studies at Harvard and Faculty Co-Director of the Center, and Rob Faris, Research Director for the Center, discussed Media Cloud, the 2016 U.S. election, and the networked public sphere; Ryan Budish, Berkman Klein senior researcher, and Liz Woolery, senior policy analyst at the Open Technology Institute, shared their recent work and highlighted some of the open questions from the Berkman Klein project Transparency 2.0; the Berkman Klein Youth and Media Team hosted Zoe Wood, former Center intern, who spoke about robots and students with autism spectrum disorders; the Cyberlaw Clinic team presented on the valuable work they do at Harvard Law School; Charles Nesson, William F. Weld Professor of Law at Harvard Law School and Founder and Director at the Berkman Klein Center, posed the question "How do we convince someone who starts off diametrically opposed to us?"; and Harvard's metaLAB presented on their contribution to the Ethics & Governance of AI initiative, with emphasis on reflecting, designing, and making.

#### **e. Fellows/Visiting Researchers/Research Assistants/Interns**

The Fellows Program is embedded in the Center. Some of the fellows work directly on existing projects, although most come in with their own new project. Fellowships are for one academic year though the term can be extended, especially if the fellow is working on a multiyear institutional project. Employee fellows are paid a stipend to work on one of the Center's institutional projects or initiatives led by a faculty director. Non-employee fellows contribute to the research, life, and activity of the Center primarily through advancing research of their own design in the context of the community. Affiliates are often former fellows who still maintain strong ties to the Center. Faculty associates are affiliates with a faculty appointment at another school. The Fellows Advisory Board is a small group of former fellows who maintain an active involvement with the fellows community at the Center.

Throughout the year the Center hires students and interns to assist on research projects. In the summer a structured 10-week internship program supports twenty-five to thirty students at the undergraduate through post-doc levels. Below is a sample of the work that was conducted this past year by the fellows, affiliates, and faculty Associates. Those named here make up only a partial list of the fellows who participated in programs with the Center this year.

**Olivier Alais**, an affiliate, is an information communications technology specialist focusing on eGovernment challenges. He spent the summer of 2016 finalizing an eGovernment Web Development Strategy for Liberia and visiting Rio de Janeiro as a global policy fellow at ITS Rio. In the fall, Olivier went to Thailand to design the technical specifications of the M-Fund project, offering private health micro insurance for migrants. He also supported the design of a USAID mobile platform initiative to enable people in Niger and Burkina Faso to earn income via their phones by doing crowdsourced tasks, by completing surveys, and by engaging with educational content from donors and other organizations. Alais has worked with a UN office based in Nairobi to design a leadership network for sustainable development initiatives in Africa. He published the article “Turning Brazil into an Open Knowledge Society” in the *Columbia/SIPA Journal of International Affairs*, gave a talk at Columbia/SIPA on cybersecurity and international development, and wrote a post titled “Enabling Governments to be ready for Big Data and Artificial Intelligence,” on an issue about which he is deeply interested. Alais has joined IDEFIE, a francophone think tank facing international development challenges, and he is currently writing a book on his twenty-plus years traveling in Europe, Africa, Asia, and Americas.

**Kendra Albert**, an affiliate, spent 2016–2017 settling into practice as a lawyer. They began work at Zeitgeist Law, a boutique law firm in San Francisco that works on technology law. At Zeitgeist, they co-wrote an amicus brief on behalf of five members of Congress challenging the U.S. government’s national security letter regime. They also advised clients on matters involving the Computer Fraud and Abuse Act and overly broad law enforcement requests for user information. In the fall of 2016, they gave a talk at the Center titled “Beyond Legal Talismans,” which addressed the role of free speech concepts in debates about online abuse. Their paper “Computer Security Concepts for Lawyers” was published in *The Green Bag*’s winter issue, and their essay “Difficult Speech in Feminist Communities” was published as part of Berkman Klein’s Harmful Speech collection. Albert also joined the board of Double Union, a feminist hackerspace, and became a fellow with the Internet Law and Policy Foundry.

**Meryl Alper**, a faculty associate, completed her second year as an assistant professor in the Communication Studies department at Northeastern University. In January 2017, she published *Giving Voice: Mobile Communication, Disability, and Inequality*, her second book with MIT Press. Following a book launch at the MIT Press bookstore in Cambridge, she gave invited talks at venues including Data & Society, UNC-Chapel Hill, the University of Maryland, UCSD, and the Institute for Human Centered Design. She received Top Faculty Paper and Top Ranked Paper awards at this year’s International Communication Association annual conference. She co-authored a paper on digital technology and rights in the lives of children with disabilities in a special issue of *New Media & Society*, and her public commentary has appeared in *VICE Motherboard* and *Culture Digitally*. She also delivered presentations about her ongoing work on youth, disability, and technology at NYU, Northeastern, and the New York Transit Museum’s “Access for All” Autism Symposium. Along with Dylan Mulvin, she co-organized an

interdisciplinary workshop on disability, technology, and inclusion at Microsoft Research New England. Her work was covered this academic year by outlets such as *The Guardian*, Engadget, Digg, TechRepublic, PRI's *The World*, and CBC Radio's *Spark*. She participated in the Center's AI Initiative kickoff event; was a panelist at the MIT Online Humor Conversation Series, co-sponsored by the Center; and presented at the Berkman Luncheon Series event "Can We Talk?" on issues of voice, access, and disability.

**Geanne Belton**, a faculty associate, is a journalism professor at the City University of New York's Baruch College. This year she secured a contract with Oxford University Press for a book on searching for, verifying, and sharing quality information in the Digital Age, and she has been working on her upcoming book; creating, co-authoring, and launching an online learning module, "Avoiding Plagiarism and Fabrication," in collaboration with Ruth Hochberger, Jane Kirtley, and the Poynter Institute; serving as chair of the Governance Committee and vice chair of the Board of Directors of the Student Press Law Center, based in Washington, D.C., and completing her second and final three-year term as a member of that board; designing and launching new hybrid online approaches to teaching media law and ethics for for-credit courses at the City University of New York's Graduate School of Journalism and teaching her first fully online for-credit seminar at Baruch College; conducting journalism workshops for student newspaper editors and staff at Bates College; presenting media law, journalism quality, and student-safety-related best practices at the Association for Education in Journalism and Mass Communication's annual conference in Minneapolis during a panel discussion of the teaching hospital model for journalism education; and serving as a panelist, with Leah Plunkett, for the New Hampshire Supreme Court Society's "Freedom of the Press: New Challenges in an Era of Distrust and Fake News" conference.

**Ellery Roberts Biddle**, a fellow, continued to serve as the advocacy director at Global Voices, where she developed two concurrent programs within Global Voices' citizen media community that will allow community members to conduct qualitative and quantitative research at the intersection of technology and human rights. These include the development of a database tracking threats that online activists and independent digital media workers incur as a consequence of their online speech, ranging from judicial to physical and technological threats. The Threatened Voices database, which Global Voices has developed in partnership with the Toronto-based design and advocacy group Visualizing Impact, is slated for a soft launch in September 2017. The pilot studies for the database have focused on state-sponsored online harassment in Mexico and Venezuela. In December, Biddle spoke on Global Voices' research in this area at Universidad Jesuita in Guadalajara, Mexico. The second track entails mainly qualitative research on unique efforts to bridge the digital divide around the world. This began with a series of case studies on Facebook's Free Basics program, which aims to provide free access to a select set of web-based apps, including Facebook, to users in developing countries. A team of seven researchers from six of the countries where the program has been deployed evaluated the app on standards of usability, language and accessibility, privacy, free expression, and access to information. Biddle also engage in conferences and events focused on the phenomenon known as fake news. These dynamics are not unique in many of the countries where Global Voices community members live and work. Biddle has spoken on the issue at several venues this year including Misinfocon (co-hosted by MIT and the Nieman Foundation), the New America Foundation, CUNY Journalism School, and Data & Society.

**Amy Brand**, an affiliate, is Director of the MIT Press. This year she concentrated on more uptake on the CRediT (contributor role taxonomy) project to enrich the attribution record in scholarly communications (see, e.g., <http://www.biorxiv.org/content/early/2017/05/20/140228>); more publishing from the MIT Press, including lots of open access and a new author event series at the (new) MITP bookstore; a partnership with Internet Archive and Arcadia to digitize and open hundreds of backlist MITP books (see <http://lj.libraryjournal.com/2017/06/academic-libraries/mit-press-Internet-archive-collaborate-to-digitize-titles/>); new grants to support the near-future publication of books and journals on the open-source PubPub platform, <https://www.pubpub.org/>, which originated at the MIT Media Lab; and several talks on the future of university-based publishing (see, e.g., <https://www.youtube.com/watch?v=VG8RL1SRMeQ>).

**Lionel Bossi**, a faculty associate, continued to work closely with the Youth and Media team, leading the Conectados al Sur network and supporting ongoing research and application efforts toward the field of artificial intelligence and inclusion. The AI and Inclusion project aims to better understand the ways in which AI systems can be conceptualized, designed, and deployed to create a more diverse and inclusive society. Lionel is the director of postgraduate studies and an assistant professor at the Institute of Communication and Image of the University of Chile.

**Amber Case**, a fellow, spent the year researching the effects of technology on human attention, specifically on the design and use of alerts in Internet-connected products. In the mid-1990s, researchers developed the idea of “calm technology” in order to deal with the overwhelming effects of alerts on attention, focus, and security. In 2015 Case published a guide to designing calm technology and will publish her third book, *Designing Sound for Products*, in October 2017. She was a guest curator for the exhibit “Humans Need Not Apply” at Dublin’s Science Center in February, and in April she presented at the University of Oregon’s “What Is Life?” conference, the proceedings of which will be published in 2018. Later that month she was invited to share her research with Microsoft’s Inclusive Design Initiative. She gave keynotes at the Fujitsu World Summit, the Information Architecture Summit, MRC Vegas, the UCSC Conf on Social Fiction, Media Future Week, The Next Web Amsterdam, and the ESIP Federation Winter Meeting 2017. She will speak at DEFCON and Sibos later this year. Her research topics include artificial intelligence, ethics, automation, and the effects of technology on humanity. Case has continued to sponsor an annual scholarship at Lewis & Clark College for Anthropology and Technology, in an effort aimed at increasing interdisciplinary work between the two subjects.

**Yasodara Córdova**, a fellow, started her fellowship by publishing an op-ed about personal digital assistants, data, and inequality in the NEXO journal. She co-authored a technology policy report on the regulation of encryption and Brazil’s blocking of Whatsapp, which was presented at a Supreme Court session. In December, she co-organized, with the Institute for Global Law and Policy and the Brazilian Studies Association at Harvard, the workshop “Algorithms, Law and Society: Building Rights for a Digital Era.” There she presented her work on machine learning for public consultation in lawmaking processes. She wrote a series of articles about the governmental systems for identification and surveillance in Brazil for the Privacy International Network, developed by the Coding Rights Group. She will investigate this matter during the next academic year. In September 2017 she will begin mentoring a startup that uses artificial intelligence and open data to improve transparency and accountability in

Brazil's Congress. She co-organized the webinar series Open Knowledge for Open Knowledge Brazil. She has been developing a research project about the relationship of the Internet design patterns and cities' design patterns and presented on the topic of structured futures at a Fellows Hour.

**Sandra Cortesi**, a fellow and the Director of Youth and Media, continued to lead Youth and Media's national and international policy, research, and educational initiatives and coordinates the collaboration between the Berkman Klein Center and UNICEF. She works closely with young people and lead researchers in the field as they explore innovative ways to approach social challenges for youth in the digital world. Together with Berkman Klein Center's Executive Director Urs Gasser and the Youth and Media team, she focuses on topics such as inequitable access, information quality, risks to safety and privacy, artificial intelligence, skills and digital literacy, and spaces for participation, civic engagement, and innovation.

**Jack Cushman**, a fellow, continued his work on the Perma Link preservation tool and the Caselaw Access Project with the Harvard Library Innovation Lab. He contributed to the successful launch of the first Berkman Klein Assembly in January 2017. In spring 2017 he taught Harvard Law School's first computer programming course, "Programming for Lawyers." He gave talks this year on library innovation at the President's Session of the International Federation of Library Associations, on web archiving at the "Digital Social Memory" conference at the New Museum in New York, and on digital security at the International Internet Preservation Consortium.

**Kate Darling**, a fellow, has been working on legal, ethical, and social issues related to robotic technology, AI, and the governance of emerging technologies. She has attended international policy meetings, conferences, and workshops on robotics, given a multitude of keynotes, and organized a robotics policy conference with Google X. Her co-edited book *Creativity Without Law* was published by NYU Press, and she has a forthcoming contribution in the collection "Robots, Power, and Relationships." She received the Mark T. Banner award from the American Bar Association for her work in intellectual property and an honorary doctorate from Middlebury College for her work in robotics.

**Primavera De Filippi**, a faculty associate, is a permanent researcher at the CERSA/CNRS in Paris. She has spent the 2016–2017 year working on the final revision of her book, co-authored with Aaron Wright, *Blockchain and the Law*, slated for publication in fall 2018 by Harvard University Press. She also co-edited the book *Open Data & Data Protection* and published five articles in peer-reviewed journals and six book chapters, including a chapter on blockchain technology for the OECD's Digital Economy Outlook 2017. During the academic year, De Filippi taught a course on "E-government" at the University of Paris II and guest-lectured at a class on blockchain governance in Yochai Benkler's "Information Policy" course at Harvard Law School. She has been invited to give keynote presentations at conferences in France, Switzerland, Belgium, Germany, Norway, Morocco, and Mauritius and presented her work at many other conferences around the world. De Filippi has joined the World Economic Forum's Global Future Council on Blockchain Technology, with which she organized a conference in Davos on blockchain for corporate governance. As the director of the Internet Governance Forum's Dynamic Coalition on Blockchain Technologies, she also organized a conference in Nairobi, Kenya, and a series of blockchain workshops in France. Finally, as part of her artistic career, she has been exhibiting her

“Plantoid” work at the Natural History Museum in Paris, the Gottlieb Duttweiler Institute in Zurich, and the Furtherfield Gallery in London.

**Juan Carlos De Martin**, a faculty associate, is the Director of the Nexa Center for Internet & Society at the Politecnico di Torino (Italy) and a professor of computer engineering. In September 2016 De Martin inaugurated the National Laboratory on Computer Science and Society with a conference organized at the Italian Parliament; the National Laboratory will facilitate the networking of Italian academics interested in the social aspects of computer science. Between October and November 2016 De Martin spent a month working as associate research director at the Collège d'études mondiales in Paris. While in Paris, besides interacting with Paris-based researchers and giving a public lecture titled “Internet and Power,” De Martin completed his book on the future of the university, *Università futura* (Codice Edizioni), which became available in bookstores in February 2017; the book project had started in the fall of 2011 when De Martin had spent a semester at the Berkman Klein Center. Over the following months De Martin presented his book widely, including a presentation at Harvard University. In spring 2017 De Martin taught the sixth edition of “Digital Revolution,” an interdisciplinary course offered to first-year students of the Politecnico with the aim of strengthening both their digital culture and their digital skills. The final grade, in fact, depended in part on the knowledge acquired attending the lectures (on the history of the Internet, architectural principles of the Internet/www/personal computer, etc.) and in part on the quality of several prescribed online activities, including opening a blog, using a mailing list, and producing a short video.

**Judith Donath**, a member of the Fellows Advisory Board, continued writing her book, whose working title is *Technology and Trust: The Cost of Honesty and the Value of Deception*, during what turned out to be a bumper year for fake news and falsehoods. She wrote about the signaling function of embracing deceptions in an op-ed for CNN and about how to refute lies without reinforcing them in a popular essay on Medium, and she talked to numerous journalists about the political ecology of conspiracy theories, rumors, and outright lies. Moving from political to emotional deception, she wrote “The Robot Dog Fetches for Whom” about the persuasive potential of social robots’ synthetic appeal (a chapter to appear in *A Networked Self: Human Augmentics, Artificial Intelligence, Sentience*, Routledge, 2018, ed. Papacharissi) and spoke on this topic at the WeRobot conference at Yale and the AI and Journalism conference at Columbia. She gave talks about signaling, trust, and deception to university audiences ranging from information scholars at UC Irvine to rabbinic students at Hebrew College, and spoke about authenticity and surveillance in augmented reality to artists at New York’s New Museum. In the spring, she was a visiting researcher with the Social Media Collective at Microsoft.

**Shannon Dosemagen**, an affiliate, continues her work with Public Lab. During the past academic year, her projects and activities have included giving a TEDx talk at the European Center for Nuclear Research (CERN) on open-source environmental sensing; producing a report titled “Environmental Protection Belongs to the Public: A Vision for Citizen Science at EPA,” through her role as acting vice chair on the National Advisory Council on Environmental Policy and Technology; joining the World Economic Forum’s Global Future Council on Environment and Natural Resource Security; organizing the second Gathering for Open Science Hardware in Santiago, Chile, in March 2017; and joining forces between Public Lab and the Environmental Data Governance Initiative to support the initiative in tracking changes to federal environmental management and governance. Dosemagen’s work was highlighted in a PBS

series this spring titled the *Crowd & the Cloud* (episode 1: “Even Big Data Starts Small”), and she has contributed to several articles, including ones in the Journal for Open Hardware on the Gathering for Open Science Hardware website and in Liinc, on civic technology and community science. Through Dosemagen’s leadership, Public Lab has received new support this year from the Betty and Gordon Moore Foundation, the National Academies of Sciences, Engineering and Medicine, and the Sloan Foundation toward ongoing work of the organization and partners.

**Milyn Fidler**, a fellow, completed the manuscript of her first book, on African cyber-politics. Over the past academic year, her research also focused on the intelligence and law enforcement community’s use of electronic surveillance tools. As part of this project, she published several widely read posts in leading policy blogs on the NSA’s oversight of zero-day vulnerabilities and on initial findings about law enforcement use of surveillance at the Standing Rock protests, based on FOIA work she undertook. She spoke on NSA oversight at Stanford Law School, the Harvard Kennedy School Belfer Center, the Wilson Center, and the Center for Strategic and International Studies. At the University of Michigan, she gave a guest lecture on Edward Snowden and civil disobedience. On African cyber-politics, in addition to working on her book manuscript, she spoke at Columbia Law School, RightsCon, and the Forum on Internet Freedom in Africa, writing in blogs on emerging cyberlaws in Africa and on African perspectives in debates about cross-border data access laws.

**Christian Fieseler**, a faculty associate and professor of media and communication management at the BI Norwegian Business School, spent the last year launching a new Scandinavian research center, the Nordic Centre for Internet and Society, in Oslo. His research mainly focused on matters of social responsibility as they relate to the digital transformation of the economy. At the Center, together with the researchers of the Youth and Media team, he looked into the place of young people in the digital economy—in particular, their career aspirations, skills, and participation in the digital domain. Fieseler is also coordinating a new European Union Horizon 2020 project, “Power, Privacy and Participation in the Sharing Economy.” He co-authored articles, including ones in the *Journal of Business Ethics* on the fairness of digital labor; in *New Media and Society* titled “The Flow of Digital Labor”; in *Computers in Human Behavior* on motivations for participating in the sharing economy; and in the *Social Science Computer Review* on coping with unemployment online. He plans to continue his research on the responsibilities of the digital economy and is editing a forthcoming special issue of the *Journal of Business Ethics* on the controversies and legitimization of the sharing economy.

**Christoph Graber**, a faculty associate, is a professor of law at the University of Zurich. He took advantage of a research sabbatical to spend February 2017 to May 2017 at the Berkman Klein Center and Harvard Law School working on a book project about constitutional theory in the digital networked environment. In the fall semester he taught two courses and a seminar at the University of Zurich: a course on art law and culture (in German), a course titled “Regulation without Law? Law and the Technologies of the 21st Century” (in English), and a seminar on ethics, law and business (in German). During the year, Christoph Graber published two papers in peer-reviewed journals, “Bottom-up Constitutionalism: The Case of Net Neutrality” (in English) and “Personalisation on the Internet, Political Autonomy and Public Service Broadcasting” (in German); a working paper, “The Future of Online Content Personalisation: Technology, Law and Digital Freedoms” (in English); and a book chapter,

“Computer-Grundrecht” (in German). While at the Center he gave a Berkman Klein Luncheon Talk, “Bottom-up Constitutionalism: The Case of Net Neutrality.” He also finished the manuscript of a paper with the title “Freedom and Affordances of the Net” (in English), to be published in a U.S. law review. In other projects, Graber collaborated with people from the Center and the MIT Media Lab on a joint interdisciplinary project on the debate about net neutrality and Facebook’s Free Basics in India and, as part of the Ethics and Governance of AI project, worked with Urs Gasser and several Center staff members on philosophical questions about AI, law, and governance.

**Mary L. Gray**, a fellow, published her co-edited anthology “Queering the Countryside: New Frontiers in Rural Queer Studies” with NYU Press. The collection won a Choice Academic Outstanding Title Award for 2016. She published her research examining the rise of on-demand labor and the future of work in the *Harvard Business Review* and other venues including the annual ACM conference, this year titled “Computer-Supported Cooperative Work and Social Computing.” Gray’s keynote address at the annual Advancing Ethical Research conference and plenary panel at the International AAAI Conference on Web and Social Media highlighted her research on the role of human subjects in data science research. Gray, in collaboration with fellow Dean Jansen, is also working on an experimental design for testing the mix of volunteer and paid labor that could help democratize speech recognition AI to languages in the Global South. Relatedly, Mary continued her work with public and private partners to create a data bank and consortium striving to make private-sector social data available for public good. Mary says that she is most proud of working with her fellows cohort to develop a “Sanctuary Check” mobile app that helps neighbors fight for and contribute to the sanctuary city movement.

**Ben Green**, a fellow, worked with Responsive Communities with a focus on developing best practices for how cities implement new data and technology. He contributed guest lectures and supervised research projects for the Responsive Communities Lab. Green published a paper about the dynamics of gunshot victimization in social networks. His study found that gunshot victimization follows an epidemic-like process of social contagion that is transmitted through social networks. These results suggest that a holistic public health approach, modeled on interventions developed for other epidemics, can provide valuable tactics to reduce gun violence. Green presented this work at the National Network for Safe Communities’ national conference in June. He also published a report about how cities should protect privacy when publishing open data, a guide intended primarily for municipal officials. Green worked with groups such as the City of Boston, the Future of Privacy Forum, and the National Network to End Domestic Violence to spread and implement the practices discussed in the report. He is currently working on a book about smart cities, analyzing the social and political consequences of new technology for urban life and governance.

**Jason Griffey**, an affiliate, spent the 2016–2017 year writing, speaking, and working on his privacy-focused space analytics startup for nonprofits, Measure the Future. Alpha testing of the computer-vision-based open-source sensor system was done in October and November of 2016 at three libraries, including the New York Public Library. As of June 2017 the system was expanding to seven libraries for beta testing. Griffey also gave keynotes on the effects of near-future technology on the information ecosystem for the 3rd Congreso Internacional GID 2016 in Colombia, the Special Libraries Association–Arabian Gulf Chapter Annual Meeting in Bahrain, and the Bibliotekarforbundet in Copenhagen, Denmark. He

published essays on Medium for the Berkman Klein Center Collection, the most popular of which was “Libraries & Immigration Actions: Plans and Resistance.” He also delivered an update to his 2014 library technology report “Libraries and 3D Printing” to ALA Publishing, the second edition of which will be published in the fall of 2017. Griffey also presented at the spring meeting of the Center for Networked Information on artificial intelligence systems, attended Misinfocon at the MIT Media Lab, and worked with the Technology and Social Change Center at the University of Washington on its “Public Libraries as Platforms for Civic Engagement” efforts.

**Natalie Gyenes**, a fellow, has been working on the Media Cloud project, examining how digital media portrays and influences issues of health equity and access, social norms, and other human rights topics, and investigating the effects that different narratives and news frames have on public sentiment and agenda setting. This year, she gave talks about the relationships between information exposure and population health outcomes at the Unite For Sight Global Health Innovation Conference and the Switchpoint Ideas Conference and co-hosted a Berkman Klein Center discussion with Brittany Seymour about using network science to understand health misinformation online. Gyenes is currently working with summer interns at the Berkman Klein Center on developing a digital health learning experience that applies principles of epidemiology to the understanding of information contribution, consumption, and diffusion. She also contributed a chapter to the *Research Handbook on Human Rights and Digital Technologies* about innovation in human rights and digital media, focusing on using technology to strengthen participation in international human rights procedures. She is using this methodology as a public health representative with the Women’s Bar Association of Massachusetts, employing technology to encourage community-led participation in the development of legislation.

**Eldar Haber**, a faculty associate and an associate professor (senior lecturer) on the faculty of law at Haifa University, continued his research on cyber-related and law-and-technology topics. During this year, he worked mainly on the topic of digital expungement, which deals with criminal rehabilitation in the digital age. Haber presented his work at several conferences and workshops worldwide, including a Berkman Klein Luncheon. During the first stage of his project, an article by Haber was accepted for publication in the *Maryland Law Review* (forthcoming, 2017). This article also won the IAPP Best Privacy Paper Award at the PLSC-Europe and Tilting2017 conference. In addition to the “Digital Expungement” project, Haber began to work on the various legal, technological, and social implications of the Internet of Things and the “always on” society, e.g., the potential threats in the use of “always on” personal assistants (like Amazon Echo/Show/Look and Google Home) and smart toys. Currently, he is also completing his book *Criminal Copyright* (Cambridge University Press, forthcoming). This year he taught classes on cyber and information law and trademark law, an online terror seminar; and “Introduction to Israeli Law” (compulsory).

**Eszter Hargittai**, a member of the Fellows Advisory Board, started the year by moving to the University of Zurich to become a professor and the chair of Internet Use & Society in the Communication Department. She published two journal articles with collaborator Kerry Dobransky, of James Madison University—one on the digital disability divide and the other about older adults’ Internet skills and uses. Her book chapter on the online participation divide written with Kaitlin Jennrich appeared in *The Communication Crisis in America, and How to Fix It*, edited by Lew Friedland and Mark Lloyd. She

received the Public Sociology Award from the American Sociological Association's section on Communication, Information Technology and Media Sociology. She published an op-ed in *The Washington Post* about Pokemon Go and one in *The Hill* with Keith Hampton about how social media are unlikely to have been the cause of the 2016 presidential election outcome. She gave talks at several conferences, including the annual meetings of the Association of Internet Researchers, the Midwest Political Science Association, the International Communication Association, the Swiss Communication Association, and the National Association for Media Literacy Education as well as invited talks at the Princeton-Fung Global Forum "Can Liberty Survive the Digital Age?" in Berlin and the University of Haifa's workshop "Big Data and Education: Ethical and Moral Challenges." She continues her research on differences in people's Internet skills and how that may relate to who gets to benefit from and who may face challenges from their Internet use.

**Samer Hassan**, a fellow and (recently promoted) associate professor at the Universidad Complutense de Madrid, focuses his research on decentralized collaboration—studying commons-based peer production communities and social movements, and building decentralized and free/open-source web tools for them. During this year, the team he leads continued development of Teem, an app for collectives, and SwellRT, backend-as-a-service for collaborative apps. Both were part of the Center's successful application to Google Summer of Code 2017, in which Hassan participated as mentor. His team also launched a new tool: Jetpad.net, a full-fledged alternative to Google Docs. In addition, SwellRT received international recognition by being accepted (within Apache Wave) by the Apache Software Foundation, the largest free/open-source organization. Besides these activities, he was also the main organizer of the first Berkman Klein Center Workshop on Platform Cooperativism, co-organized with Yochai Benkler, Mary Gray, and Sasha Costanza-Chock. He co-organized the Center's cooperation working group and blockchain working group. With the Center's help, he applied and was shortlisted for the ERC Starting Grant 2017, the largest personal research grant in Europe (awaiting resolution). Hassan gave talks at a Center luncheon (on translating research into online tools for communities), at the Harvard Center for Research on Computation and Society (on decentralized technology for collaboration), and at the Harvard Data Privacy Lab (on blockchain as a regulatory technology). His work was featured in media in Europe (Horizon Magazine, Cordis), Spain (20 Minutos, Diagonal, Publico) and San Francisco (the podcast *Steal This Show*). In winter, he taught a course on cyber-ethics and law at the Universidad Complutense. Over the 2016–2017 year Hassan published several papers, including one in the journal *First Monday* (on blockchain as a regulatory technology); three book chapters (on blockchain-based crowdfunding, why decentralization, and feminist collaborative economy); and a report for the Veolia Institute (on blockchain and AI). He is currently co-editing two books.

**Felipe Heusser**, a fellow, continues his work on media decentralization and tech entrepreneurship by leading Rhinobird.tv, a mission-driven startup that uses machine learning and image and audio recognition to organize video data into meaningful experiences. The platform seeks to create crowd-based videos where stories can be told and events watched from a collection of videos (live and recorded) captured by different people participating in the same experience. The many angles are then synced and played together in a unique video player that can be embedded across the web. Over the past year Heusser developed integrations between Rhinobird and platforms like Youtube and Facebook, expanding the possibilities of video syncing among some of the world's largest video repositories. Another major

achievement of this year has been to enable Rhinobird to work fully across the web, over every major browser on both desktop and mobile, and without the need for plug-ins or downloads. This achievement is aligned with the Center's goal to promote a more open and free Internet that does not depend on proprietary operating systems. From an organizational perspective, the startup grew to a team of 20. The platform was launched in the U.S. in March 2017, and since then it has been used in major sport and music events like March Madness, Lollapalooza, and Bonnaroo as well as by civil society and news organizations. Also much was learned this year from a business perspective. Rhinobird raised more than \$1.5 million, developing a model that matches revenue and mission, patent protection, and open source. This learning has been shared at the Berkman Klein Center; at Fellows Hour sessions, and through several workshops and panels. During the past year, Heusser also served as board member and advisor to nonprofit and civic tech organizations, mainly Fundación Ciudadano Inteligente.

**Benjamin Mako Hill**, a faculty associate, is an assistant professor at the University of Washington in Seattle. His research uses computational techniques and large datasets of digital traces to study peer production—a new form of organizing work that combines new communication technology with novel cooperative social processes to produce public information goods of enormous value like Wikipedia and GNU/Linux. Although most research on peer production considers interaction within communities, most of Hill's work is engaged at the level of organizations, projects, and communities. Hill began work on a NSF funded research project, with Faculty Associate Aaron Shaw, that seeks to support empirical work into these community level outcomes. His work in this area has focused on modeling ecological forces between communities and several new systems designed to create better newcomer experiences. Additionally, a major part of his research has involved efforts to make the type of data science studies at the heart of his research program easier to both consume and produce for groups that include scholars in communication, the general public, and ordinary users. Over the last year, he published 7 peer reviewed papers, 3 invited book chapters, 2 poster abstracts, and 3 datasets including a large dataset of five years of data from the Scratch online community. Additionally, he is PI for two new NSF grants supporting peer production research, community-level analyses, and anonymous communication.

**Joichi Ito**, a faculty affiliate, is the Director of the MIT Media Lab and a professor of the practice in Media Arts and Sciences at MIT. He also joined the Harvard Law School as a visiting professor of Practice at the Harvard Law School in July 2017. In the winter term, Ito and Jonathan Zittrain taught a course called “Internet & Society: The Technologies and Politics of Control” at the law school. The course was an experiment that brought together students from the Harvard Law School and Kennedy School and engineering students from MIT for an interdisciplinary course on law, policy and technology. The course ran in conjunction with the Berkman Klein Assembly, a rapid development project organized by the Center for a cohort of “assemblers” from the public and private sector. In the spring term, Ito taught “Principles of Awareness” at the MIT Media Lab together with The Venerable Tenzin Priyadarshi. The course was a seminar exploring the understanding and practice of self-awareness and its use through class discussions, contemplative practices, and readings. Ito also underpins the Ethics and Governance of Artificial Intelligence Fund at MIT. Further, Ito and Jeff Howe wrote *Whiplash: How to Survive Our Faster Future* (Grand Central Publishing, 2016). In 2017, Ito was elected as a fellow to the American Academy of Arts and Sciences and received the IRI Medal established by the Industrial Research Institute

that “recognizes and honors leaders of technology for their outstanding accomplishments in technological innovation which contribute broadly to the development of industry and to the benefit of society.”

**Dean Jansen**, a fellow, is the executive director at the Participatory Culture Foundation, focused on developing participatory practices in crowd work, through Amara.org. Amara held inaugural international subtitler meetups (one in Barcelona and one in São Paulo). For many (virtual) colleagues and friends, this was the first opportunity to meet face to face. At the second of these gatherings, members of Amara's core team also presented to the Brazilian national translator's association during their annual conference in May 2017. The Amara team members shared information on their collaborative approach to subtitling, which is quite unique in the professional translation space. The talk garnered a great deal of interest from translators at the conference. Amara is fast becoming a stable base for seeing how the future of work—in terms of medium and large-scale on-demand platforms—can be more engaging, participatory, and fair. Jansen also participated in many workshops, working groups—on global Internet, cooperation, and platform cooperativism—and Fellows Hour gatherings at the Center. He co-organized the Festival of Action, in which a handful of Center folk came together for an afternoon of collective thinking/doing.

**Nani Jansen**, a fellow, has explored how strategic litigation can be better utilised as a tool in digital rights campaigns. Following a research project and expert workshop, the Catalysts for Collaboration website (<http://catalystsforcollaboration.org>) was launched in June 2017, encouraging Internet activists to collaborate across disciplinary silos and strengthen their digital rights litigation. The website offers a set of best practices—“Catalysts for Collaboration”—combined with a set of case studies. Alongside her fellowship, Jansen acted as an advisor with the Cyberlaw Clinic, working with students on issues of human rights and technology. She also continued her human rights litigation practice in the African regional courts, on which she gave a presentation at Harvard Law School's Human Rights Program and published several pieces and book chapters on the topics of human rights, gender, and strategic litigation.

**Dariusz Jemielniak**, a faculty associate, is a professor of organization studies at Kozminski University, has conducted several projects in cooperation with Berkman Klein Center colleagues. He continued his research on the perception of fairness in digital files sharing among Harvard LLM lawyers (50 interviews and 100 questionnaires conducted), and he published about the glass ceiling on Wikipedia in *Feminist Review*. He started a new project, conducted with PhD student Tadeusz Chelkowski and presented at the Center, about the structure and distribution of open-source projects on the example of GitHub (4 billion commits analyzed). He also started working on a book about uncollaborative society. He was awarded the Chair of Polish Academy of Science Academic Excellence Award 2016 for "Common Knowledge? An Ethnography of Wikipedia" (Stanford University Press). Apart from academic work, he got his term at the Wikimedia Foundation Board of Trustees renewed.

**Amy Johnson**, a fellow, completed her PhD at MIT in the Program in History, Anthropology, and Science, Technology, and Society. Her dissertation examined Twitter parody accounts in English, Japanese, and Arabic to understand how unexpected uses of technologies are collaboratively created through global acts of experimentation, opposition, and regulation. She also wrote a number of smaller pieces, including an article on sealioning for the Center's Harmful Speech Collection and a chapter on manual bots in Japanese-language Twitter for *The Handbook of Japanese Media*. She spent a month as a

visiting researcher at Meiji University's Institute of Comparative Law and attended and presented work at a number of conferences, ranging from the Association of Internet Researchers in Berlin to AI in Asia in Tokyo. In conjunction with the Center's Festival of Action, she launched a pilot project to improve the quality of basic political information in Wikipedia, a project she's currently developing further. Last, with the assistance of Andy Sellars, she sued the CIA for failing to respond to a FOIA request submitted in 2014.

**Jonas Kaiser**, a fellow, is an associate researcher at Alexander von Humboldt Institute for Internet & Society, has been working on his research on digital communication and public sphere theory and, more specifically, on his DFG-funded research project on right-wing online counterpublics in Germany and the United States. Since coming to Berkman Klein, Jonas has defended his doctoral thesis at Zeppelin University, published one paper in the *International Journal of Communication* as well as co-authored one that was published in *Media and Communication*, one that got accepted at *Metereologische Zeitschrift* and one that will be published in the *Springer Handbook of Cyber-Development, Cyber-Democracy, and Cyber-Defense* in 2018. He further contributed to Berkman Klein's U.S. election project and, related to that project, has written a paper together with the Center's Nikki Bourassa and a colleague from the University of Zürich on the role of Breitbart as a bridge between the far-right and the conservative mainstream. The paper was accepted at three peer-reviewed conferences: IAMCR in Colombia, AoIR in Estonia, and ECREA's Political Communication conference in Switzerland. Furthermore, Jonas has presented his work at DGpuK's Sport Communication section in Germany, AoIR in Germany, and ICA in the U.S. At ICA, the paper he co-authored with a colleague from Zeppelin University in Germany won the best paper award of the Environmental Communication section. He also gave a talk about his research on the right-wing at UC Boulder. Finally, he wrote blog posts for the HIIG blog and Oxford's Political Communication blog, contributed to a piece that made use of Media Cloud that was published on *Global Voices*, wrote a summary for the German Federal Agency for Political Education about fake news, and published an op-ed on *Wired.com*.

**Rachel Kalmar**, a fellow, spent the year researching, writing, and speaking about forces that shape how companies use data. Her work explores the gulf between those wanting to create data products and those who care about privacy. As a member of the inaugural cohort of the Berkman Klein Assembly, Rachel also explored questions about data and device security. Her project focused on improving security for Internet of Things (IoT) devices in the home, and resulted in two working prototypes. Rachel gave invited talks at several conferences, local technology companies, Harvard Libraries, and the Harvard School of Public Health. At the Center, Rachel organized a writing working group, which met several times a week and provided peer support and discussion about writing. Together with Jason Griffey, An Xiao Mina, and Malavika Jayaram and David Li at the Digital Asia Hub, she co-organized the Future of Hardware working group, which spanned topics from memes to medical devices to manufacturing. Working with Berkman Klein and metaLAB fellow Sarah Newman, Rachel collaborated on an auditory adaptation of "The Future of Secrets," which was exhibited at a conference in Rome. Rachel joined the staff of Assembly at the Berkman Klein Center & MIT Media Lab for 2018, and is excited to explore the interplay between ethics, data, and artificial intelligence.

**Simin Kargar**, a fellow, has been studying the interplays of new media, power, propaganda and dissemination of misinformation in authoritarian environments. She published pieces about politics of the Middle East, the formation of discourses of geopolitical issues and their dissemination through social media. She also contributed to the upcoming research by Berkman Klein Center on the use of social media in the presidential election in Iran that took place in May 2017. She also conducted research about harmful speech online and state-sponsored cyber mobs in Iran. Her research addressed cyber abuse and online harassment against communities of Iranian journalists, artists and activists who - due to their profession, activities or beliefs- are more likely to become targets of coordinated online mobs. The research came to fruition through a grant from Jigsaw, Google's technology incubator. In addition, Simin led a conversation with Kambiz Hosseini, a prominent Iranian political satirist based in New York, who is known as the John Stewart of Iran. The conversation was part of the MIT Online Humor Series that came to life after a few meetings at Berkman Klein Center. These meetings were convened by the working group on the role and limitations of humor in online conversations and offline social change.

**Yarden Katz**, a fellow, is also a fellow at Harvard Medical School. He co-organized a workshop titled "What should universities do with their patents?", an interdisciplinary gathering that looked critically at the roles universities play in the proliferation of intellectual property and its effects on software, biomedicine and other fields. The workshop was partly inspired by an analysis Katz did showing that both public and private universities have transferred hundreds of patents to patent trolls who use litigation threats to generate profit. Katz also published an article about how narratives in the science press are shaped by financial interests of elite biomedical research institutes and their intellectual property battles. With Ulrich Matter, Katz analyzed the rising inequality in public biomedical research funding from the '80s to the present. Their work suggests that the neoliberal metrics-based view of scientific value works to privilege an elite minority of investigators and institutes, potentially at the expense of fostering diverse scientific communities.

**Damon Krukowski**, an affiliate, published *The New Analog: Listening and Reconnecting in a Digital World*, with the New Press (New York), and went on a North American book tour. In each city, he invited an interlocutor from a different discipline to discuss issues of analog and digital communications—including filmmaker Astra Taylor, sound studies scholar Jonathan Sterne, novelist Jonathan Lethem, and musician (and Center affiliate) Amanda Palmer. He also started work on a follow-up podcast, "Ways of Hearing," with help from Radiotopia—look for it to air in August and September 2017.

**Chun-Hao Kuo**, a fellow, is a prosecutor in New Taipei District Prosecutors Office of the Ministry of Justice (MOJ) in Taiwan, completed a report "An analysis of Memorandum regarding Individual Accountability for Corporate Wrongdoing (Yates Memo)", which was issued by former Deputy Attorney General of the United States Sally Yates in September 2015 to announce a new policy initiative of Department of Justice (DOJ) to emphasize DOJ's focus on prosecuting individuals involved in corporate crimes. He submitted this report to MOJ of Taiwan as a reference to facilitate the legal structure of pursuing individual accountability on corporate wrongdoing and to strengthen the investigation skills of Taiwan's prosecutors. In addition, Chun-Hao also contributed an article, "How do we deal with human nature: fleeing from justice? An analysis of Bail Jumping" to *The Taiwan Law Review*. Knowing Taiwan lacks a bail jumping statute as a deterrent to the defendants who intend to flee from justice nowadays, he

would like to introduce how U.S. addresses the issue to Taiwan that a defendant fails to appear in court or fails to surrender for service of sentence pursuant to a court order after having been released on bail. During the past year, Chun-Hao has been doing his researches on organized crimes, white collar crimes, cybercrimes, and money laundering, especially focusing on how effective U.S. Attorney fight against organized hacker groups, the application of The Racketeer Influenced and Corrupt Organizations Act, and the opinions of U.S. federal courts on this issue. In the fall of 2017, he will present a research report on those topics to MOJ of Taiwan as a research result of the past year.

**Andres Lombana-Bermudez**, a fellow, supported several Berkman Klein Center initiatives, including Digital Citizenship Learning Playlists, Coding for All, Digital Economy, and Digitally Connected. Working with the Youth and Media team, and in collaboration with local youth from the Boston metropolitan area, he helped to co-design learning experiences about privacy and surveillance, licensing, job applications, and advocacy. In addition, he worked on three case studies about youth-driven online platforms' governance approaches, and conducted a series of interviews with adult moderators from Scratch, DIY.org, and Connected Camps. Expanding his research on youth, digital equity and learning, Lombana-Bermudez investigated the digital economy, looking at the skills and mindsets that youth are developing as they navigate the blurring boundaries between play and work. Andres published two articles in the Encyclopedia of Out-of-School Learning (one about "photosharing" and other about "home environments"), contributed to the Center's Harmful Speech collection with an essay about Scratch, and wrote blog posts for Global Voices and Center Medium channel. Besides participating in academic conferences and facilitating workshops for teachers and librarians about creative coding, he attended the International Symposium of Electronic Arts and exhibited "Muted Arms, Touched Nature" (a video art piece), and mentored a weekly youth radio show (America Unificacion) at Zumix Radio in East Boston. Lombana-Bermudez also continued to collaborate in projects in Latin America such as Clubes de Ciencia and Alfabetizaciones Digitales in Colombia, and helped to co-edit a collective book about youth and digital inclusion in the region ("Jóvenes, transformación digital y formas de inclusión social en América Latina").

**Mary Madden**, an affiliate, is a researcher at Data & Society Research Institute, has spent the 2016–2017 year continuing her work on a project supported by the Digital Trust Foundation to study how low-socioeconomic status Americans experience privacy. As part of that effort, she co-authored a law review article with Michele Gilman, Karen Levy and Alice Marwick that looks at the matrix of privacy-related vulnerabilities low-income communities face. "Privacy, Poverty and Big Data" is available on SSRN and will be published in the next edition of the Washington University Law Review. Separate from her privacy research, Mary collaborated with Center affiliate Amanda Lenhart and Data & Society researcher Claire Fontaine on a year-long Knight Foundation project to explore changing news consumption practices and attitudes among teens and young adults. She was the lead author of the final report, "How Youth Navigate the News Landscape," that was jointly published by Knight and Data & Society in March. Mary also gave a variety of invited presentations and led workshops throughout the year at Data & Society in New York, the Microsoft Policy Innovation Center in Washington, DC and was a featured speaker at a national summit on data equity and tech inclusion organized by the Center for Global Policy Solutions. She has continued to serve as an advisor to the National Cyber Security Alliance for its Data

Privacy Day initiative and as a member of the ADELPHI Data Equity group. She was also honored to participate in Berkman's AI Advance event and the Privacy Law Scholars' Conference this spring.

**J. Nathan Matias**, an affiliate, completed his MIT Media Lab PhD (advised by Ethan Zuckerman) on "Governing Human and Machine Behavior in an Experimenting Society." The dissertation advances two arguments: (a) that we need causal knowledge on the effects of social interventions online to govern wisely, and that (b) we need to reinvent the politics of online experimentation to be compatible with the values of democracy. The dissertation explores this in three ways: an intellectual history of 20th century politics of experimentation, fieldwork with massive online communities struggling with online harassment and misinformation, and a series of large-scale experiments designed and governed by communities themselves. In 2016–2017, Nathan completed several studies. One study demonstrated an "AI Nudge" that coordinated human behavioral nudging to influence the behavior of algorithms that spread unreliable news. Another study evaluated an intervention preventing thousands of people from engaging in harassing behavior in a 16 million subscriber reddit community. With Sarah Szalavitz and Ethan Zuckerman, Nathan published results from FollowBias, a system designed to broaden the gender diversity of who people follow on Twitter. He also published an article on the civic labor of online moderation and an Atlantic article auditing Facebook's selective rollout of the Pride rainbow emoji in June 2017. The CivilServant project, which Nathan tested in his PhD, is now being incubated by Global Voices, with the goal of growing open, usable knowledge toward a fairer, safer, more understanding Internet. With CivilServant's experimentation infrastructure, Nathan plans to support 100 new field experiments by the summer of 2018, scaling the growth of knowledge by 100x. The project is nearing the start of its tenth study. In September, Nathan will be starting as a post-doc at Princeton University, attached to the Center for Information Technology Policy, the Paluck Lab in psychology, and the sociology department.

**Tressie McMillan Cottom**, a faculty associate, released two books this year. The first is a critically acclaimed monograph on technological change, work, and credentialing (*Lower Ed: The Troubling Rise of For-Profit Colleges*). The second book is an edited volume of cutting edge research on market-based higher education. She presented at the Center's author series and joined three boards focused on technology, inequality, and institutions. McMillan Cottom continues to develop a project on technology, work, and inequality.

**Grace Mutung'u**, a fellow, is supported by the Open Technology Fund and studied Internet shutdowns at election times in Africa. She reviewed the policy and regulatory framework of Uganda to draw lessons for Kenya during the August 2017 elections. Some of the issues of concern include unilateral decision making by state agencies, independence of the communications regulators, lack of transparency by companies to their customers on Internet shutdown orders and dispute resolution mechanisms within the communications sector. She shared her research at several meetings of digital rights advocates and convened a working group on Internet and elections under the auspices of the Kenya ICT Action Network. She also wrote articles on the subjects of information controls in Africa, hate speech online in Kenya and multistakeholderism in policy making.

**Sarah Myers West**, an affiliate, has been researching the history of the cypherpunk movement and the political history of encryption technologies. Over the past year she has been conducting field work at hacker conferences and digital rights summits as well as conducting archival research for her dissertation. She presented some of the early stages of this work in the article “Survival of the Cryptic”, for a special issue of the journal *Limn* on hacks, leaks and breaches. In addition, this year she published the articles, “Data Capitalism: Redefining the Logics of Surveillance and Privacy” in *Business and Society* and “Searching for the Public in Internet Governance: An Examination of Infrastructures of Participation at NETmundial”, in *Policy & Internet*. She presented her research at the Association of Internet Researchers, International Communication Association, Society for the Social Studies of Science conferences, as well as at the Munk School of Global Affairs at the University of Toronto. Alongside her academic work, this year she began an initiative with fellow former Berktern Michelle Forelle to develop digital security resources for academic researchers, work they plan to continue over the next academic year through a series of crypto parties at academic conferences, beginning with the Association of Internet Researchers conference in Estonia this October.

**Sarah Newman**, a fellow, is a Creative Researcher with the metaLAB team at the Center and continued to develop “The Future of Secrets,” a research project and art installation that considers human relationships to data, secrets, and the systems that store and mediate them. The art installation was offered internationally at two large-scale public art and culture programs: MFANow, a series of overnight events hosted by the Museum of Fine Arts, Boston in Fall 2016; and re:publica 2017, Berlin’s annual Internet-culture conference in 2017. At ESC Atelier in Rome, Newman exhibited a video installation, “Nobody’s Listening,” that explores human-machine relationships (in collaboration with Center fellow Rachel Kalmar). Newman gave public talks at Harvard, MIT, Freie University Berlin, University of Potsdam, Roma Tre University, and the University of the Aegean. In the spring semester, Newman, with metaLAB colleagues Jeffrey Schnapp and Matthew Battles, taught a research-studio graduate seminar entitled “What Should or Could (Scholarly) Knowledge look like in the 21st Century?” for students from Harvard’s GSAS and GSD. Newman and Battles, with colleagues from metaLAB, taught a one-week intensive creative workshop in Lesbos, Greece, offered to refugees and local residents, in collaboration an NGO committed to refugee relief. Newman’s design work included collaboration with metaLAB on Curricule, a project commissioned by Harvard’s Dean of Arts and Humanities to visualize curricular data for course discovery, as well as the design of AI Compass, a visualization and topic-mapping platform for the Ethics and Governance of Artificial Intelligence Initiative, where she serves as the curator for the topic area focused on AI in Art & Design. Newman is leading metaLAB’s exploration of artistic works that contend with the social and cultural dimensions of Artificial Intelligence; a set of these works will be exhibited in Harvard Art Museums’ Lightbox Gallery in August 2017.

**Crystal Nwaneri**, a fellow, spent the majority of her year finishing her law degree at Harvard Law School. She previously worked with attorneys at the law school’s Cyberlaw Clinic and completed two summer associateships with law firms in D.C. and Silicon Valley. At the Berkman Klein Center, she helped organize the Center’s first Festival of Action which allowed different members of the community to gather together to hack pressing social and political issues. She also edited and published “Ready Lawyer One: Legal Issues in the Innovation of Virtual Reality.” Nwaneri also researched and started to draft an article examining legal and private responses to the evolving issue of online harassment. Next

year, she'll be a first year associate in the litigation group at Fenwick & West, a Silicon Valley based law firm.

**Juan Ortiz Freuler**, a fellow, joined the Berkman Klein Center in March 2017, after being appointed as a policy fellow at the Web Foundation. These past months he has been researching and supporting the activities of Sir Tim Berners-Lee (founder of the Web Foundation) in advocating for strong and enforceable Net Neutrality rules. As part of this effort he coordinated meetings in Congress, and outreach materials to make sure Sir Tim's voice is effectively heard. Juan has also coordinated and chaired a roundtable meeting with Sir Tim and other key thought-leaders from the Center and MIT-CSAIL community to discuss the ways in which artificial intelligence will affect people in low and middle income countries, and how to ensure their voices are taken into account when ai is designed and deployed in these countries. Juan is currently conducting interviews with key actors in Kenya as part of a project that involves Web Foundation-Berkman Klein Center collaboration in mapping actors and initiatives in several African countries.

**Griffin Peterson**, a fellow, continued work on Peer 2 Peer University (P2PU) and grew the learning circle project from a pilot in Chicago to a growing movement of librarians and educators in the U.S., France, and Kenya. Its work is predicated on the belief that learning is social. 40+ libraries and adult education centers are running learning circles, delivering 250 6-week learning circles to ~1,200 learners. Learning circle expansion isn't contingent on P2PU bandwidth; an open-source model of growth enables local ownership. For example, Kenyan librarians will lead the training of other East African libraries in late 2017. Engaged facilitators run the monthly community calls, and largely constitute the ~100 members of the P2PU community where they discuss facilitation tips, online course feedback. P2PU was the recipient of 2017 Digital Inclusion Leadership Award from Google Fiber and Next Century Cities; it was the only adult ed program included in U.S. Department of Education's 2016 National Education Technology Plan, subject of 2017 NC State PhD dissertation, a recipient of additional funding from Knight Foundation, Institute of Museum and Library Services, Dollar General Literacy Foundation, and Open Society Foundations.

**Leah Plunkett**, a Fellow, has been working with both Youth and Media and Data & Society colleagues on the bi-weekly "Student Privacy, Equity, and Digital Literacy" newsletter. She presented on youth, privacy, and digital citizenship to law students, lawyers, educators, and other ed tech folks in a variety of settings, including Fordham Law School and the New Hampshire Supreme Court Society. Leah developed a new training on the digital lives of youth for lawyers and other child advocates at the Children's Law Center in New York. She made her public radio debut on "The Exchange" — New Hampshire's Diane Rehm equivalent — to talk about cyber ethics and joined a collaborator from ITS Rio to present on child online data privacy at the University of Geneva's Internet Law Summer School. She is working on a book to tie these strands together by unpacking how parents, teachers, and other trusted adults approach sharing children's private lives through new and emerging digital tech and also continued to teach Access to Justice and legal skills at University of New Hampshire School of Law, and developed data-driven ways to support students' readiness for the bar exam.

**Colin Rhinesmith**, a faculty associate, started a new appointment this past year as an assistant professor in the School of Library and Information Science at Simmons College. He spent the year continuing his research funded by the U.S. Institute of Museum and Library Services (grant #RE-31-16-0014-16) to examine how rural libraries address the challenges of Internet connectivity with hotspot lending programs. Early findings from the study were published in an article, titled “At the Edges of the National Digital Platform” this spring in D-Lib Magazine. Last fall, Rhinesmith received an invitation from the White House to attend a meeting with President Obama’s National Economic Council staff to discuss strategies to promote digital inclusion and broadband adoption as part of the President’s ConnectALL Initiative. Rhinesmith’s research also helped to inform the Federal Communications Commission’s January 2017 report, titled “Strategies and Recommendations for Promoting Digital Inclusion,” and his work was mentioned by the U.S. Department of Housing and Urban Development in two separate newsletters last fall. In May, Rhinesmith and Angela Siefer (Director, National Digital Inclusion Alliance) released a new report, titled “Digital Inclusion Outcomes-Based Evaluation” published by the Benton Foundation in an effort to document the opportunities and challenges facing digital inclusion organizations. This work followed on the release of Rhinesmith’s 2016 report, “Digital Inclusion and Meaningful Broadband Adoption Initiatives,” which was also published by the Benton Foundation. In addition, Rhinesmith co-authored an article with Miriam Sweeney (University of Alabama), titled “Creating Caring Institutions for Community Informatics” which was published in *Information, Communication & Society*.

**Ricarose Roque**, a faculty associate, started a faculty position at the University of Colorado Boulder in the new Information Science department. At the department, she designed new courses that engaged students to think critically about data and to develop their computational thinking abilities through creative expression with computer programming. She is continuing her research designing and studying ways to meaningfully engage kids and their families in technology-based learning opportunities through the Family Creative Learning project. Recently, she has been partnering with libraries to design “story-making” workshops for families to create and share stories using creative technologies like ScratchJr. She has spoken at Digital Media and Learning conference and at Data & Society to share this work, particularly in how to design inclusive and equitable learning experiences with technology. She continues her work studying creative collaboration online in the Scratch online community, which celebrated it’s 10th birthday. She published a journal article together with Sayamindu Dasgupta and Sasha Costanza-Shock called “Civic Engagement in the Scratch Online Community,” describing the ways young people act to improve the online community and connect to the world around them. She is currently working on a paper with Natalie Rusk studying how young people who participate in Scratch are growing up online. She was a Tinkerer-In-Residence at the Tinkering Studio at the Exploratorium in early 2017.

**Bruce Schneier**, a fellow, recently joined the Belfer Center for Science and International Affairs at the Harvard Kennedy School. Throughout 2016-17, he continued to write and speak about diverse topics in computer and Internet security. In particular, he focused on the Internet of Things and cyber-physical systems, surveillance and privacy, modern ransomware and DDOS epidemics, nation-state cyberattacks, and vulnerability disclosure policies. Furthering those topics, Schneier has presented at about 40 events around the world, and has published 32 op eds and essays. In Spring 2017, he taught a course at the Harvard Kennedy School titled "Internet Security: Technology, Policy, and Law."

**Wendy Seltzer**, a member of the Fellows Advisory Board, became Strategy Lead and Counsel to the World Wide Web Consortium (W3C), supporting global collaborative standards development for the open web platform. She continues to work with the Lumen Database to expand its transparency reporting for online speech. Her article, Software Patents and/or Software Development, was cited in Judge Mayer's concurrence in *Intellectual Ventures v. Symantec* (Fed. Cir.) (rejecting the patents).

**Aaron Shaw**, a Faculty Associate, is an Assistant Professor and Director of the Media, Technology, and Society Program at Northwestern University, published new research about the organization of peer production and social computing systems. Papers on the founding of new communities, newcomer orientation within communities, content creation related to the Black Lives Matter movement, and delays in crowdfunding projects appeared in the ACM conferences on Computer-Supported Cooperative Work (CSCW) and Human Factors in Computing Systems (CHI). Shaw and Faculty Associate Benjamin Mako Hill (University of Washington) were also awarded a National Science Foundation grant to support their work on peer production.

**Ben Sobel**, a fellow, spent the academic year as Head Teaching Fellow for CopyrightX, a free, networked course on copyright law offered under the auspices of Harvard Law School, the HarvardX distance-learning initiative, and the Berkman Klein Center. CopyrightX 2017, the course's fifth iteration, served its largest-ever cohort of online sections and affiliated courses. Ben also contributed research on Internet of Things security and online information operations to the Berkett cybersecurity project. Throughout the year, Sobel continued working on an article about machine learning and copyright's fair use doctrine. He presented preliminary versions of the paper at the CopyrightX Summit at Harvard Law School in May 2017, and the University of Geneva Faculty of Law's Geneva Internet L@W Colloquium in June 2017. The year afforded Sobel further opportunities for public speaking on issues as diverse as the role of libraries in a post-truth era and the privacy issues presented by biometric technologies. In the fall, Ben will join Harvard Law School's J.D. class of 2020.

**Jonny Sun**, a fellow, published his first book, "everyone's a liebn when ur a liebn too" (HarperPerennial), based on his twitter account @jonnysun, and a creative interpretation of the narrative forms of the social media timeline. He worked on two stage plays: "Dead End," was staged at Factory Theater (Toronto) in October 2016; "Fried Mussels," a play about social media and the genetic algorithm simulation, had a reading in New York in March 2017 with dir. Taylor Norton, and is being developed. Jonny launched two Twitter bots, @tinycarebot and @tinydotblot, which led him to speaking and writing on "The Beauty of Simple Twitter Bots," published in *The Internet Review* of 2016, and as an hour-long talk at Microsoft Research in Redmond. He drafted a paper on "Responses to Viral Fake News" based on a Twitter experiment, which he intends to prepare for submission. He also wrote a series of personal/academic essays about life online, Twitter friendships, and other related topics, which he plans to publish in the future. In the spring of 2017, he and faculty associate Susan Benesch created and moderated the "Online Humor Conversation Series at MIT," a six-talk series which brought comedians working online in conversation with academics to discuss humor's impact on the Internet, hosted by the Center for Civic Media. Jonny is submitting a piece on "Sharing Online Humor Responsibly" for the "How I Resist" anthology (St. Martin's Press). He is spending his summer working on Twitter Bots, NLP,

and ML, at Microsoft AI & Research in Redmond. He has also been studying for his PhD qualifying exams. In June 2017, he was profiled in the New York Times piece, A Whimsical Wordsmith Charts a Course Beyond Twitter, and was named by TIME magazine as one of the 25 Most Influential People on the Internet. Over the past academic year, his research has continued to focus on understanding freedom of speech, through examining issues of personal data protection, surveillance and digital security. Together with Dr. Fei, Lokman published a paper on "Public Opinion toward Internet Freedom in Asia" that is an empirical study based on a survey of people's attitudes on freedom of speech and Internet freedom in eleven Asian jurisdictions. His research on personal data protection was covered widely by media and presented at conferences in Hong Kong and Taiwan.

**Paola Villarreal**, a fellow, worked as a Data Science fellow at the ACLU of Massachusetts where she collaborated, among other things, in *Bridgeman vs. District Attorney for Suffolk County*, a case that resulted in the largest dismissal of convictions in U.S. history with almost 23,500 tainted cases dismissed. You can read more about this case in the "Catalysts for Collaboration" case study: <http://catalystsforcollaboration.org/casestudy/bridgemanmass.html>. She also collaborated in the Massachusetts' Yes on 4 campaign for the regulation of marijuana and in other data visualizations related to policing and the war on drugs. She presented her work during the Berkman Klein's Luncheon Talks series, her talk, titled "Public Interest Data Science" can be found here: <https://cyber.harvard.edu/events/luncheons/2016/11/Villarreal>. Villarreal also collaborated with The Guardian Project developing a library that eases the development of chatbots using different cryptographic technologies. Finally, she joined Creative Commons as the Director of Product Engineering where she will create a team that will be responsible for building a front door to The Commons.

**Sara M. Watson**, an affiliate, is a technology critic, continued publishing and speaking about technology and society. In October, the Columbia Journalism Review published her Tow Center for Digital Journalism research report, "Toward a Constructive Technology Criticism" which looked at the state of public discourse about technology and society, acknowledged a broad range of contributors, offered a typology of contributions and argumentative strategies, and proposed a constructive approach to technology criticism that poses solutions and imagines alternatives. She also investigated narratives that dominate framing about Artificial Intelligence in presentations at Digital Asia Hub's series on AI, as well as an article for Motherboard, "The AI Story So Far." She also published her first commissioned opinion piece in print in Wired UK, analyzing what a post-Brexit U.K. might learn from Singapore's Smart Nation strategy. She also experimented with other formats and mediums for presenting technology criticism, including a poem discussing personalization in timelines, "On Algorithmic Time," for the forthcoming *Construct* magazine.

**David Weinberger**, Fellows Advisory Board, continued writing about the effect of the Internet on ideas. He began his fifth book, for Harvard Business Press, on changes in our paradigm of how the future arises from the present, and the implications of this on thought and practice. In addition to numerous columns and posts, he wrote a long-form article for Backchannel on the epistemological implications of relying on machine learning when its processes are inexplicable to humans. He also wrote a substantial essay for the LA Review of Books on the networking of knowledge. He taught a course at Harvard Extension, called "The Idea of the Internet." He has become involved in the Center's joint project on the ethics and

governance of AI. He also began a new series for MIT Press, publishing strongly-voiced work books network technology; all books will be available for free online (open access) and in hardcopy. A number of members of the Center community are now authors for that series. David also gave talks around the world on Internet topics, and was cited with some frequency in the media.

**Josephine Wolff**, a faculty associate, wrapped up her project looking at the aftermath of a series of nine major cybersecurity incidents over the course of the past decade analyzing how the costs, liability, and remediation efforts were distributed across the different actors involved. She presented a paper at TPRC in September on "Ex-Post Mitigation Strategies for Theft of Non-Financial Data," and published an article on how issues of security are framed in Internet governance debates, titled "What We Talk About When We Talk About Cybersecurity" in *Internet Policy Review*. She spoke about cybersecurity at the 2016 Aspen Institute Festival of Ideas and on a panel reflecting on the 30-year anniversary of the Computer Fraud and Abuse Act at New America, and also continued contributing articles to *Slate* and *Quartz*.

### **3. Contributions to HLS Teaching Program**

#### **Fall 2016**

- "Biological and Computational Underpinnings of Visual Processing," a course taught by Associate Professor of Molecular and Cellular Biology and of Computer Science and Berkman Klein Center Faculty Associate David Cox at Harvard College
- "City Use of Technology," a course taught by John A. Reilly Clinical Professor of Law at the Cyberlaw Clinic Susan Crawford at Harvard Law School
- "Communications and Internet Law and Policy," a course taught by Berkman Professor of Entrepreneurial Legal Studies and Berkman Klein Center Faculty Director Yochai Benkler at Harvard Law School
- "Human-Computer Communication through Natural, Graphical, and Artificial Languages" a course taught by James O. Welch, Jr. and Virginia B. Welch Professor of Computer Science and Berkman Klein Center Faculty Director Stuart Shieber at the Harvard John A. Paulson School of Engineering and Applied Sciences
- "Counseling and Legal Strategy in the Digital Age," HLS Seminar - a seminar taught by Clinical Professor and Berkman Klein Center Faculty Director Christopher Bavitz and Cyberlaw Clinic Clinical Instructor Vivek Krishnamurthy at Harvard Law School
- "Cyberlaw Clinic Seminar," a course taught by Christopher Bavitz and Vivek Krishnamurthy at Harvard Law School
- "Digital Storytelling and the Law," a seminar taught by Lecturer on Law Rebecca Richman Cohen at Harvard Law School
- "Empirical & Math Reasoning - Making Sense: Language, Logic, and Interpretation" co-taught by James O. Welch, Jr. and Virginia B. Welch Professor of Computer Science and Berkman Klein Center Faculty Director Stuart Shieber at the Harvard John A. Paulson School of Engineering and Applied Sciences
- "Fostering Innovation," a 1L reading group taught by Christopher Bavitz at Harvard Law School
- "Fundamentals of Neuroscience," a course taught by David Cox at Harvard College

- “Intellectual Property Law: Advanced,” a course taught by WilmerHale Professor of Intellectual Property Law and Berkman Klein Center Faculty Director William Fisher at Harvard Law School
- “Law and U.S.-China Economic Relations,” a seminar taught by Assistant Professor of Law and Berkman Klein Center Faculty Director Mark Wu at Harvard Law School
- “Questions of Theory,” a seminar taught by William R. Kenan Professor of German and Comparative Literature John T. Hamilton and Berkman Klein Faculty Director Jeffrey Schnapp at Harvard College
- “Responsive Communities Lab,” a course taught by Susan Crawford and Senior Advisor to the Cyberlaw Clinic Waide Warner at Harvard Law School
- “Sensory Processing in Visual Cortical Circuits,” a course taught by David Cox at Harvard College
- “Trademark,” a course taught by William Fisher at Harvard Law School

### **Winter 2017**

- “Internet & Society: The Technologies and Politics of Control,” a course co-taught by George Bemis Professor of International Law and Berkman Center faculty director Jonathan Zittrain at Harvard Law School and MIT Media Lab Director Joi Ito
- “JuryX Workshop,” a course taught by William F. Feld Professor of Law and Berkman Klein Center Faculty Director Charles Nesson at Harvard Law School
- “Problem Solving Workshop A,” a course taught by Susan Crawford at Harvard Law School

### **Spring 2017**

- “Advanced Topics in Evidence,” a seminar taught by Charles Nesson at Harvard Law School
- “Big Data in Marketing,” a course taught by Professor Harold M. Brierley Professor of Business Administration and Berkman Center Faculty Director John Deighton at Harvard Business School
- “Biological and Computational Underpinnings of Visual Processing,” a course taught by David Cox at Harvard College
- “Copyright,” a course taught by William Fisher at Harvard Law School
- “Comparative Online Privacy,” a seminar taught by Professor of Practice and Berkman Klein Center Executive Director Urs Gasser at Harvard Law School
- “Computer Science 51, Introduction to Computer Science II” a course taught by James O. Welch, Jr. and Virginia B. Welch Professor of Computer Science and Berkman Klein Center Faculty Director Stuart Shieber at the Harvard John A. Paulson School of Engineering and Applied Sciences.
- “Contemporary Issues in Intelligence Gathering,” a seminar taught by Jonathan Zittrain at Harvard Law School
- “Cyberlaw Clinic Seminar,” a seminar taught by Christopher Bavitz and Vivek Krishnamurthy at Harvard Law School
- “Fair Trial 2017,” a course taught by Charles Nesson at Harvard Law School
- “Human-Computer Communication through Natural, Graphical, and Artificial Languages” a course taught by Stuart Shieber at the Harvard John A. Paulson School of Engineering and Applied Sciences.
- “International Trade Law,” a course taught by Mark Wu at Harvard Law School

- “Law and the International Economy,” a course taught by Mark Wu at Harvard Law School
- “Music and Digital Media,” a seminar taught by Christopher Bavitz at Harvard Law School
- “Teaching Copyright,” a seminar taught by William Fisher at Harvard Law School
- “The Fascist Century,” a research seminar taught by Jeffrey Schnapp at Harvard Faculty of Arts and Sciences
- “Visual Justice: Documentary Film and Human Rights,” a reading group taught by Rebecca Richman Cohen at Harvard Law School;
- “What should or could (scholarly) knowledge look like in the 21st century? A Knowledge Design Seminar,” a seminar taught by Jeffrey Schnapp at Harvard Graduate School of Design

#### **4. Participation of HLS Students in Program Activities**

Students are invited to all of the Center’s public events and are specifically sought out to attend institutional gatherings such as the fall open house, which showcases the many projects in which we invite student participation and collaboration. Students were also invited to attend the community-building and thought-provoking Community Ideas Day later in September. While most of the Center’s student engagement occurs within the CyberlawClinic, the Center also hires students as Research Assistants (RAs) to work alongside with staff, faculty, and fellows on a variety of projects. This past Spring, for example, Executive Director Urs Gasser hired a number of RAs to work on his next book *Re-Coding Law in the Digital Age*, enlisting them to build the foundational “building blocks” and craft the intellectual flow of the book’s argument. In addition, RAs separately worked on finalizing the manuscript of his forthcoming book *The Future of Digital Privacy*. Further, we were pleased to have L3 Crystal Nwaneri join us as a fellow as she completed her time at HLS.

This year, Adi Kamdar (HLS '18) began a student roundtable at the Berkman Klein Center. Meeting every two weeks over food and drinks, the roundtable brought together students from Harvard Law School, Harvard Business School, Harvard Kennedy School, and various other graduate schools at Harvard, Tufts, and MIT. The goal of the roundtable was to discuss current events in technology, policy, and law, as well as to foster connections between the student community and the Berkman Klein Center's fellows, staff, and faculty.

#### **5. Faculty Participation**

The Berkman Klein faculty directors are not only deeply involved in the governance and intellectual leadership of the Center, but also active participants in the research of the Center. Each project is led by a faculty principal investigator to shape and guide the research. Although some of the research platforms of the Center are ideas shaped from the bottom up, much of the heart of the work comes directly from the faculty. For example, this year Yochai Benkler brought his interest in how media may have influenced the 2016 presidential election which resulted in a well cited research study. Jeffrey Schnapp led the many collaborations between the MetaLab and Berkman Klein Center teams, including metaLAB’s involvement in the rebranding effort. Stuart Shieber provided guidance in the context of the

recently launched AI governance and ethics initiative. Mark Wu served as a liaison between the Center and the World Economic Forum on digital trade issues.

Faculty is also driving educational innovation at the Berkman Klein Center: Jonathan Zittrain's vision for a multi-month hack-a-thon turned into the Assembly program that ran in the spring of 2017 and was advised by faculty director John Palfrey. Charles Nesson used innovative teaching technology developed at the Center to facilitate hard conversations with affinity groups in- and outside the classroom. Faculty also host conferences and participate in workshops that bring thought-leaders together from around the world and present at the weekly lunch series. Susan Crawford was the Center's HUBWeek speaker for a talk in October of 2016. Terry Fisher in partnership with Mark Wu facilitated a Center-wide conversations about the economic, legal, and ethical dimensions of access to lifesaving medicines. Executive Director Urs Gasser and faculty director Chris Bavitz were both involved in a broad range of events hosted by the Center, both nationally and internationally, in addition to serving as PI on various research efforts.

## **6. Other Contributions to the HLS Community**

Professor Jonathan Zittrain participated in the selection committee for the new Dean. Professor Chris Bavitz and Associate Director Sue Kriegsman both participated as mentors in the Law School Emerging Leaders program to help provide staff guidance on their roles at the school and their career paths. Professor Urs Gasser served on the University's Data Science Planning Committee and the Committee on Innovative Corporate Engagements, Communications Manager Gretchen Weber co-lead a media relations training for clinical staff with HLS Media Relations Managing Director Michelle Deakin and regularly contributed to Harvard Law Today website about faculty research and events. The metaLAB team has been working with the office of the registrar to re-imagine how current and historical course catalogs can be visualized to help students select classes.

## **7. Law Reform and Advocacy**

The Center engaged in significant law reform and advocacy projects during the past academic year, primarily through the Cyberlaw Clinic. The Clinic regularly represents clients in amicus and other policy advocacy projects. As described in the section that specifically discusses the Clinic, this past year's law reform and advocacy projects included an amicus effort before the Massachusetts Supreme Judicial Court regarding the interplay between trusts-and-estates law and privacy, advocacy around data protection legislation in Pakistan, and an assessment of potential impacts of a law introduced in a Caribbean country on free expression that helped inform a meeting of experts on the drafting of a new international protocol specifying what governments must do to protect human rights defenders from threats to their physical safety.

## **8. Connections to the Profession**

The Berkman Klein Center's activities reach a wide range of experts and practitioners across a breadth of sectors. As a multidisciplinary Center, our research, teaching, outreach, and community building efforts seek to engage decision makers and key stakeholders from the private sector, public sector, and civil society and advocacy. In addition to producing rigorous scholarship, we connect it to practice by engaging professionals through a variety of modes, formats, channels, and innovative programs. Through global initiatives such as the Global Network of Internet & Society Centers and DigitallyConnected, our work extends internationally and is a forum through which insights from global scholarship are translated across disciplines, geographies, and also inform policy and product.

### **Research**

Formal research publications, articles, blog posts, and presentations from the dozens of research projects hosted by the Center served as vehicles to connect our scholarship with practice. One example of an intentionally policy- and practitioner-focused output is our series on "Translating Research for Action: Ideas and Examples for Informing Digital Policy," which included a series of papers that sought to build a bridge between academic research and policy making in the networked world by helping to identify opportunities in key areas related to digital technology and innovation. The series builds on the Center's commitment to exploring new ways to communicate, educate, and inform in the public interest and are informed by conversations and collaborations with diverse stakeholders in each area. Additionally, all publications from the Berkman Klein Center are hosted on open access repositories, including the Social Science Research Network (SSRN) and Digital Access to Scholarship at Harvard (DASH).

### **The Future of Digital Privacy**

"The Future of Digital Privacy: A Navigation Aid for Decision-Makers" by Professor and Executive Director Urs Gasser will be published in late 2017 by the MIT Press as part of their Information Policy series. The book is based on Gasser's Comparative Online Privacy seminar taught at Harvard Law School and examines the digital privacy issues emerging from current relationships between users and companies. Grounded in interdisciplinary and comparative research, the book provides decision-makers an accessible yet nuanced navigation aid for today's digital privacy crises, describes the tools available, and explores methods of securing the future of privacy. The project sprang from the vital contributions of several streams of Berkman Klein-based scholarship. Led by Gasser, a team of research assistants, interns, and staff members from the Berkman Klein Center is drawing heavily from the work of individual scholars to approach the book from a cross-disciplinary perspective that could encapsulate the complex interplay of global factors affecting digital privacy. It also relies on the successful work of the Berkman Klein Center's Privacy Tools Project made possible by the National Science Foundation. Finally, the book incorporated feedback of dozens of students who attended his course at Harvard Law School.

### **Executive Education: Digital Security for Directors and Senior Executives**

Given its interdisciplinary research and entrepreneurial community, the Berkman Klein Center's program provided a holistic perspective on Digital Security for Directors and Senior Executives of companies that

took into account legal, technical, social, and political angles needed to understand a framework for addressing fundamental cybersecurity questions. The program had three central goals:

- Provide attendees with a common core knowledge base and context to understand the threat landscape. Participants came away with a foundation of digital security literacy—including terminology—and an ability to communicate effectively with teams within their organizations, and with third parties.
- Provide attendees with the ability to recognize potential and actual challenges, emerging trends, and harms to their company, both internal and external. Participants gained an understanding of how to gather the proper threat intelligence, measure their organization’s risk appetite, ask the right questions, assess the economics of cybersecurity, and make decisions for optimizing organizational strategy.
- Provide tools, skills, and resources to prepare business leaders to better respond to emerging cybersecurity challenges, understand risk and mitigation strategies, uphold their legal and fiduciary responsibilities, and offer the best guidance to other board members and senior executives at their companies.

The Berkman Klein Center drew on the resources of the Harvard Law School Executive Education Program, as well as Berkman Klein’s own extensive expertise and worldwide network of scholars, practitioners, and experts with a diversity of public and private sector experiences. The course utilized a mixed approach, including tutorials, lectures, case studies, peer conversations, and expert dialogues.

Specifically, the course offered a state-of-the-art education along several related dimensions:

- Provide an introduction to what board members and senior executives need to know about digital technology;
- Address the need for literacy among board-level decision-makers on select core issues, spanning not only cybersecurity, but also related fields of privacy, and interoperability;
- Enable corporate leaders to better assess cybersecurity risks, the legal implications of action (and nonaction), and liability;
- Identify approaches to risk mitigation, organizational interventions, and preparedness;
- Offer guidance on strategies for maintaining a competitive advantage while addressing critical issues of cybersecurity on a global web.

The program targeted and included board members and senior level executives from across industries, with a focus on large enterprises. Recognizing that board members and corporate executives have different levels of knowledge about cybersecurity, the course aimed to build a shared and consistent knowledge base, provide opportunities for student-to-student exchange and learning, and provide tools that participants can take back to their companies.

### **Assembly**

Led by Jonathan Zittrain, Senior Advisor Jordi Weinstock, Senior Researcher David O’Brien, Research Associate Tiffany Lin, Research Associate Samantha Bates, Berkman Klein Affiliate Shailin Thomas, and Berkman Klein fellow Jack Cushman, the Berkman Klein Assembly launched its pilot program in January

2017. The program experiments with different modes of education, collaboration, and development to work towards solving some of the difficult problems at the intersection of code and policy. In its first iteration, the focus for the cohort was digital security. Sixteen members participated in the fifteen-week program. They were made up of developers, product managers, journalists, and academics from the private sector, academia, and open-source community. It was split into three main components: a two-week intensive course providing a deep dive into Internet law and policy co-taught by Jonathan Zittrain and MIT Media Lab director Joi Ito, a week-long design sprint, and a twelve-week development period where the cohort split into project groups, developing solutions to large digital security issues. Project summaries can be found on the 2017 section of the [Assembly website](https://cyber.harvard.edu/research/assembly). The cohort was surrounded by a diverse community. An Advisory Board made up of senior members of academia and industry provided guidance to the projects on a bi-weekly basis, and the project's affiliates were available for consultation. Additionally, the two-week course provided unique engagement opportunities between the Assembly cohort, Harvard graduate students, MIT graduate students, and esteemed guest lecturers. The project will be launching its next program in January 2018 in partnership with the MIT Media Lab with a focus on the Ethics and Governance of Artificial Intelligence. [\[https://cyber.harvard.edu/research/assembly\]](https://cyber.harvard.edu/research/assembly)

## **CopyrightX**

CopyrightX is a networked course offered under the auspices of the Berkman Klein Center, Harvard Law School, and HarvardX. Terry Fisher led the course's fifth offering during Spring 2016, with support from Berkman Klein fellow and Head Teaching Fellow Ben Sobel, Technical Support Specialist Ellen Popko, as well as from Geek Cave denizens Justin Clark and Sebastian Diaz. As in years past, CopyrightX participants included the students in online sections, affiliated courses, the Harvard Law School Copyright course taught by Fisher, as well as students enrolled in the class as part of the Harvard Extension School. Harvard Law School students served as teaching fellows for the online sections, and led their students in weekly realtime seminars and discussion in online forums throughout the 12-week course. In 2017, the CopyrightX affiliates class grew to a record 23 online sections and 20 foreign affiliates and Extension School sections. Affiliates included universities and organizations in Australia, Brazil, Bulgaria, China, Egypt, Germany, India, Italy, Japan, Kenya, Nigeria, the Netherlands, Palestine, South Africa, Uganda, and the United Kingdom; these affiliate courses produced at least 293 graduates, with the total number to be determined after some affiliates hold July exams. 568 students enrolled in CopyrightX's online sections, 345 of whom took the final exam. Of those 345, 83.2% passed, a record 285 graduates, and 82.6% received a certificate of completion. A highlight of the semester was the CopyrightX Summit held at HLS from May 15-17, which brought together approximately 35 current and former instructors from every continent but Antarctica for presentations on current issues in copyright law, pedagogical interchange, and community-building. [\[http://copyx.org\]](http://copyx.org)

## **Luncheon Series and Public Forums**

### **Berkman Klein Luncheon Series**

The Berkman Klein Center Luncheon Series is a weekly forum designed to engage diverse community members—including academics, entrepreneurs, students, lawyers, fellows, architects, designers, visionaries and others—in conversations about cutting-edge Internet issues and research. It is free and open to the public.

As an established university-wide research center, the Berkman Klein Center convenes a unique mix of individuals working on cross-cutting and interdisciplinary issues applicable to the Internet, technology, and its impact and effects on society. We invite internal and external speakers to engage with a wide spectrum of Net issues, including governance, privacy, intellectual property, antitrust, content control, and electronic commerce. We aim to include leading thinkers and practitioners in the ICT space—broadly defined—to use the opportunity to advance research, share developing projects, and consider governance and policy questions.

The luncheon discussions are focused on inquiry, dialogue, and collaboration. Each session features a guest presenter who offers an issue, a provocation, or a problem as a discussion input, and who engages our community to help further research, inform policy, and/or challenge assumptions. Our hope is to facilitate conversations regarding the challenges and opportunities that technology can provide and its capacity to inform practice and theory, bridge communities and support the public interest.

### **Workshops, Visitors, and Expert Roundtables**

The Berkman Center hosted a number of special guests and visitors over the course of the year. Notable guests included: a delegation from the Centre for Information and Innovation Law, University of Copenhagen for a visit; the ITU Secretary-General Houlin Zhao and Berkman Affiliate, Doreen Bogdan; guests Amanda Palmer and Maria Popova for a live recorded session on the topic, What Do We Do About The Haters?; HLS alum Kristin Fleschner '14 on A Picture Is Worth a Thousand Words: Advocacy by Blind Youth & Young Adults on Social Media; “The Digital Trade Imbalance: Digital Trade, Digital Protectionism, and Digital Rights” with Susan Ariel Aaronson, Research Professor of International Affairs and GWU cross-disciplinary fellow at the George Washington University's Elliott School of International Affairs; Bill Hunt of OpenGov/Sunlight Foundation; a delegation visiting from Korea Education and Research Information Service (KERIS); Assistant Professor in the Department of Information Science at Cornell University, Solon Barocas; Eric Osiakwan, Managing Partner of Chanzo Capital, on The KINGS of Africa's Digital Economy; author, activist and politician from Germany, Malte Spitz; visitor Nithya Sambasivan; talk by Loomio worker-owners around “Moving Platform Cooperativism from Theory to Practice,” hosted by the Cooperation Group; “A More Perfect Internet: Promoting Digital Civility and Combating Cyber-Violence” with Arturo J. Carrillo is Professor of Law, The George Washington University Law School; a half-day Op-Ed Writing Workshop hosted by Bruce

Schneider; an internal community conversation with UN Special Rapporteur on the Right to Freedom of Opinion and Expression, David Kaye; Nighat Dad, a Berkman Klein Affiliate and human rights lawyer; a visit from Amnesty International; a week-long visit and community luncheon with representatives from Google visiting Lumen project; a visit from a delegation from the University of Zurich.

### Digital Media

Social media and an online presence is one path for the Berkman Klein Center to connect outside of our community. The Center’s own media, including its websites and mailing lists, anchor its communications and community work. The Center’s primary email lists—sharing information about new events, videos, research, and conversations in the Berkman community—have grown to reach thousands of people each week. The Center maintains a substantial presence on a growing number platforms, including Facebook, YouTube, SoundCloud, Instagram, Medium, and Twitter.

Output	2016–2017
www.cyber.harvard.edu	~400K user sessions, ~760K pageviews
Newsletters	16,250 subscribers (up from 15,178)
Videos	12,303 (up from 10,584)
Twitter	48,435 followers (up from 43,292)
Facebook	19,226 followers (up from 17,832)
LinkedIn	1,701 followers (up from 1,247)
Instagram	235 followers (up from 89)
Medium	158 followers (new this year)
Podcasts	20,000 listens

Nearly all public meetings, presentations, book talks, lectures, and other relevant events are webcast live and archived online in a variety of formats, and continue to attract unique and growing audiences. Explainers on fair use, censorship and mesh networks were the most popular, as well as recordings of big name events such as Jonathan Zittrain’s talk “Why the Internet Matters.”

AI Videos: A broad range of people from across the Berkman Klein Center and MIT Media Lab communities have been actively working on issues of AI and related topic areas as part of their academic and professional work. We produced a series of accessible, brief videos with leaders in the field related to hard challenges of AI and opportunities for interdisciplinary communities to have impact. The expert voices reflect distinct and nuanced perspectives on a wide range of issues that intersect with AI, and the video series has served to broaden the community of the project, which includes technical experts, policy

makers, academics from an array of disciplines, philanthropists, industry leaders, and impact-oriented organizations.

## **9. Collaborations with Other Schools and Departments at Harvard University**

As discussed in the events section the Berkman Klein Center co-hosted a brown-bag series focused on Digital Health, co-hosted with the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics, and the Global Access in Action Project co-hosted with the Harvard Global Health Institute. The two day workshop “Harmful Speech Online - At the Intersection of Algorithms and Human Behavior” was done in conjunction with the Shorenstein Center.

The Center also worked across schools to conduct research. The Media Cloud project had participation from Brittany Seymour from the Harvard School of Dental Medicine. The Privacy Tools project crosses between Harvard’s Center for Research on Computation and Society (CRCS), Institute for Quantitative Social Science, and Data Privacy Lab, as well as the Program on Information Science at MIT Libraries. The metaLAB team co-taught a course across the Faculty of Arts and Sciences and the Graduate School of Design. The Center continued our fellowship partnership this year with the Nieman Foundation for Journalism with Karin Pettersson as the ‘16-’17 Nieman-Berkman Klein fellow. As always, the public and private events hosted by the Center included members of the University from multiple schools.

## **B. Plans for Academic Year: 2017–2018**

### **1. Executive Summary**

The next academic year will build upon the foundational work over the past year, which spans across research, community building, and managerial efforts. In terms of substantive engagement, the Ethics and Governance of AI initiative will be one main area of activity that brings together the extended Berkman Klein community, includes collaborations across Harvard and with MIT, and involves partners from the Global Network of Internet & Society Centers. At the fundamental level and as part of this collaborative effort, we consider the impacts of AI-based technologies on our conceptions of human autonomy and dignity in core areas of application such as autonomous vehicles, social and criminal justice, and media and information quality, where we are positioned to have transformative impact. Across these use cases, we will examine a series of cross-sectional themes that unite them, including issues related to governance and the ways in which existing national and international governance institutions may be challenged to respond to the fast-paced and transboundary applications of AI; diversity and inclusion and the ways in which the use of AI may reinforce existing biases, particularly against those in underserved or underrepresented populations, and transparency and explanation and the challenges of obtaining human-intelligible and human-actionable information about the operation of autonomous systems. Through activities that build and develop these use cases and cross-cutting areas, we plan to deploy together with

our partners new prototypes, conduct research, directly impact both policy and technologies, build community, teams, and even institutions, and engage in education and outreach that meaningfully connects human values with the technical capabilities of AI and related technologies.

With regard to community building, the focus continues to be on diversity and inclusion across programs—including personnel, events and programming, and impact of our research. We will engage in additional fundraising activities to increase the number of stipends available for fellows, with a focus on candidates of lower socioeconomic status and with financial need. We are committed not only to increase the amount of financial aid, but also to work toward increased visibility of this stipend opportunity and the fellowship program at the Berkman Klein Center. This will include investment in outreach to new communities and working with colleagues and partners to identify organizations and individuals with whom we have not yet been in close contact and who may not already be familiar with the Center’s activities. Additionally, we will work to develop language that describes our activities in new ways and with different details so that people may better understand connections between the Center’s work and their own. In addition, we will bolster our our strategic efforts to better support our fellows. For the first time in the history of the Center, we will establish a “financial kitty” that all fellows will be able to access. This funding is intended for activities or objects that support the needs of the community as a whole, including conference travel and participation, group or community productions of events or activities, hiring student interns, and books, tools, or gadgets.

In organizational terms, we will focus on the implementation of the findings of the strategic planning process conducted over the past academic year. The development of a strategic institutional narrative and a set of supporting priorities that help explain who we are and what we are trying to do more clearly to external and internal communities and funders is one of the priorities. We will also take action to foster strategic planning between research, communications, education, and events to sharpen the arc of our programming and activities. And we will make investments to increase internal communications, transparency, and decision points through a variety of new and improved avenues. One exciting area of growth will focus on outreach and education, with the goal to integrate and cross-pollinate among our formal and informal education programs (such as Executive Education, CopyrightX, Assembly and related projects), people (our fellows, faculty, staff, faculty associate, affiliates, students, and alumni, as well as funders, collaborators, advocates, policy makers, peers, and journalists), and events (like our flagship speaker series, public forums, workshops, conferences, and expert/practitioner visitor briefings).

In parallel to these research, community, and organizational advancements, we will engage in conversations with the incoming and existing members Board of Directors as well as external partners and observers about the vision and mission of the Center, programmatic priorities, and new avenues for collaboration in a rapidly changing world that presents new opportunities as well as challenges to our Center.

## **2. Research, Scholarship and Project Activities**

For the coming academic year, research at the Berkman Klein Center will continue along a trajectory that has been developed over the past several years.

Along with collaborators at MIT's Media Lab, the center will expand its focus on the ethics and governance of artificial intelligence in 2017–2018 with a particular focus on three areas: autonomous vehicles, social and criminal justice, and media and information quality. This work will explore these topics with three cross-cutting themes in mind: global governance, diversity and inclusion, and transparency and explanation.

The center has several ongoing projects in the area of privacy and cybersecurity that will continue in the coming year. The Berklett cybersecurity project will enter its four year, convening experts and policy makers to rethink and evaluate the role of foreign intelligence agencies in promoting cybersecurity. A project focused on developing tools that allow researchers to openly share data while protecting privacy will enter its sixth year and, through several offshoot projects, will continue to work on producing tools and approaches that are applicable to a range of research, government, and commercial data sharing activities. The Assembly project will host its second cohort of developers and specialists to collectively work on solutions to the key challenges in the area of code and policy.

Building upon past work on identifying and documenting Internet censorship globally, the center will build out a data collection and analysis platform with broad global coverage in the coming year along with collaborators at Princeton University, the University of Massachusetts, and the International Computer Science Institute.

In the area of youth and media, the center will build upon prior work in several key topics, including a project to design online tools and environments to increase interest and fluency in computational fields and a project that is developing learning modules for digital citizenship.

In the coming year the center will initiate a 2-year project to better understand and study media manipulation and expand upon the capacity of the Media Cloud platform.

In 2017–2018, the center will complete a three-year effort to study the spread and impact of harmful speech online and the strengths and limitations of the many strategies being used to reduce the incidence and impact of harmful speech.

## **3. Contributions to HLS Teaching Program**

### **Fall 2017**

- “Counseling and Legal Strategy in the Digital Age,” HLS Seminar - a seminar taught Christopher Bavitz at Harvard Law School

- “Cyberlaw Clinic Seminar,” a course taught by Christopher Bavitz at Harvard Law School
- “Advanced International Trade Law,” a course taught by Mark Wu at Harvard Law School
- “Intellectual Property Law: Advanced,” a course taught by William Fisher at Harvard Law School
- “Patent Law,” a course taught by William Fisher at Harvard Law School
- “Technology and Inequality,” a course taught by Yochai Benkler at Harvard Law School

#### **Fall 2017 - Spring 2018**

- “Human and Community Rights,” a yearlong seminar taught by Charles Nesson at Harvard Law School

#### **Winter 2018**

- “Communications and Internet Law and Policy,” a course taught by Yochai Benkler at Harvard Law School
- “JuryX Workshop,” a course taught by Charles Nesson at Harvard Law School

#### **Spring 2018**

- “Music and Digital Media,” a seminar taught by Christopher Bavitz at Harvard Law School
- “Cyberlaw Clinic Seminar,” a course taught by Christopher Bavitz at Harvard Law School
- “Advanced Topics in Evidence,” a seminar taught by Charles Nesson at Harvard Law School
- “Comparative Digital Privacy,” a seminar taught by Urs Gasser at Harvard Law School
- “Copyright,” a course taught by William Fisher at Harvard Law School
- “Fair Trial,” a course taught by Charles Nesson at Harvard Law School
- “Teaching Copyright,” a course taught by William Fisher at Harvard Law School
- “International Trade Law,” a course taught by Mark Wu at Harvard Law School
- “Internet & Society: The Technologies and Politics of Control,” a course co-taught by Jonathan Zittrain and Joi Ito
- “Governance and Ethics of AI,” a reading group taught by Urs Gasser

#### **4. Participation of HLS Students in Program Activities**

Students are invited to all of the Center’s public events and are specifically sought out to attend institutional gatherings such as the fall open house, which showcases the many projects in which we invite student participation and collaboration. Students were also invited to attend the community-building and thought-provoking Community Ideas Day later in September. While most of the Center’s student engagement occurs within the Cyberlaw Clinic, the Center also hires students as Research Assistants (RAs) to work alongside with staff, faculty, and fellows on a variety of projects. This past Spring, for example, Executive Director Urs Gasser hired a number of RAs to work on his next book *Re-Coding Law in the Digital Age*, enlisting them to build the foundational “building blocks” and craft the intellectual flow of the book’s argument. In addition, RAs separately worked on finalizing the manuscript of his forthcoming book *The Future of Digital Privacy*. Further, we were pleased to have L3 Crystal Nwaneri join us as a fellow as she completed her time at HLS.

This year, Adi Kamdar (HLS '18) began a student roundtable at the Berkman Klein Center. Meeting every two weeks over food and drinks, the roundtable brought together students from Harvard Law School, Harvard Business School, Harvard Kennedy School, and various other graduate schools at Harvard, Tufts, and MIT. The goal of the roundtable was to discuss current events in technology, policy, and law, as well as to foster connections between the student community and the Berkman Klein Center's fellows, staff, and faculty.

The Center also hires undergraduates and students from other schools at Harvard.

## **5. Faculty Participation**

The Berkman Klein faculty directors will continue to provide intellectual leadership and be involved in a broad range of activities - including research, community programs, outreach, fundraising, etc. - over the next academic year, in addition to being involved in the Center's governance. As mentioned earlier, we are pleased to include three new faculty to our Board of Directors: Ruth Okediji, Rebecca Tushnet, and Margo Seltzer. We are looking forward to their engagement with our research and community in the coming year along with the existing Directors. As in the past, the expanding board of directors is also the main pool to recruit a future faculty member or faculty members should the Law School need to find a replacement for the current director on short notice.

In addition to expanding the board of directors and other efforts to further increase faculty participation across the school, we engage with faculty members as part of strategic collaborations. For instance, Joi Ito will continue to bridge the work between Harvard Law School at the MIT Media Lab through co-teaching with Jonathan Zittrain and work on the AI Ethics and Governance research and joining Harvard Law School as a Visiting Professor of Practice .

## **6. Other Contributions to the HLS Community**

The Center will be participating in the HLS 200 activities by offering talks and educational programs. Susan Crawford will be presenting [AI and the Practice of Law](#); Jonathan Zittrain, Bruce Schneier, and Brad Smith will present [National Security, Privacy and the Rule of Law](#); Kate Darling, Kendra Albert, and Faculty Director Chris Bavitz will present [Tech Law and Law Teaching](#).

## **7. Law Reform and Advocacy**

The work of the Cyberlaw Clinic will continue to support law reform projects as they arise.

## **8. Connections to the Profession**

### **a. Assembly**

In the 2017–2018 year, Assembly at the Berkman Klein Center in partnership with the MIT Media Lab will be one of the projects taking part in the Ethics and Governance AI Fund. The second round of the program will launch in January 2018 with a cohort made up of individuals from industry, civil society, and academia with a diverse set of skills—including developers, machine learning experts, project managers, and communication experts—who will work together on projects relating to artificial intelligence.

### **b. Attorney General initiative**

The AGTech Forum will provide state attorneys general with opportunities to engage a diverse cohort of those innovators involved in developing new technologies, and tech developers with a chance to understand the how policy makers and enforcers approach their responsibilities. The Berkman Klein Center will bring insights from academic and other constituencies to ensure that all sides benefit from dialogue on neutral ground. In its inaugural year, the Forum will tackle issues relating to privacy, cybersecurity, and—as part of [the Center’s efforts with respect to Artificial Intelligence Ethics and Governance](#)—AI and algorithms, through convenings and other events geared toward facilitating dialogue and promoting efficient and effective public-private engagement on cutting-edge technologies.

## **9. Collaborations with other Schools and Departments at Harvard University**

The Center is planning to continue co-hosted a brown-bag series focused on Digital Health with the Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics as well as Global Access in Action Project co-hosted with the Harvard Global Health Institute.

The Privacy Tools project will continue to move ahead and work with Harvard’s Center for Research on Computation and Society (CRCS), Institute for Quantitative Social Science, and Data Privacy Lab, as well as the Program on Information Science at MIT Libraries.