Berkman

The Berkman Center for Internet & Society
at Harvard University

Annual Report
Academic Year 2013-2014

EXECUTIVE SUMMARY

The 2012-2013 Berkman Center Annual Report pointed to three key thematic areas of increased investment and attention for the upcoming year: 1) Internet health, including the relationship between new technologies, civic activity, public discourse, and democratic practice; 2) Information and Communication Technologies (ICT) and the future of learning; and 3) the emerging institutional challenges of the digital transition, i.e., the regulatory, legal, and governance questions accompanying the blurring lines between online and offline spaces. Updates and significant milestones related to each of these thematic areas are described in the following sections of the Executive Summary. In additional to these three focal areas, the Berkman Center has continued to expand its collaboration across institutions and taken a leadership role in building a global research network through collaboration on projects and events. The Center has also invested in the past year to its ongoing organizational development.

A.   Internet Health

The Center's efforts to understand, document, and make accessible information about the state of Internet openness and health—encompassing not only the status of information controls but also of access, infrastructure, and online activity—were a core focus over the past academic year. This work spans a continuum of data collection, analysis, policy, network building, tool development, and outreach, all focused on exploring the relationship between new technologies and civic activity, public discourse, democratic practice, and advocacy efforts.

Over the past year, the Berkman Center has continued work on a cluster of data gathering and analysis projects. Internet Monitor, a Center-wide research project to evaluate, describe, and summarize the means, mechanisms, and extent of Internet content controls and Internet activity around the world, is at the forefront of these. This project, led by Executive Director Urs Gasser and Faculty Chair Jonathan Zittrain, brings together data from a wide range of sources, including

data collected by the Berkman Center, by the Center's partners, and by half a dozen companies and international organizations working in this space. Internet Monitor's public data platform, which launched in July 2014, curates this data into an interactive Access Index, which offers a starting point for further analysis of Internet access conditions in 92 countries. Internet Monitor also works with a network of researchers both within the Center and around the world: the project's special report series, launched this year, includes three publications to date that provide expert analysis on notable events and trends related to Internet access, control, and activity. For Internet Monitor's first annual report, published in December 2013, the project team worked with roughly two dozen experts around the world to develop a collection of essays that highlight some of the most fascinating developments and debates in the digitally networked environment over the past year.

Herdict, the first and only large-scale project to collect and disseminate real-time, crowdsourced information about Internet filtering, denial of service attacks, and other blockages, has constructed a robust platform for collecting data from individuals about the sites that they can and cannot access. In a little over four years since its launch, Herdict has accumulated more than 233,500 inaccessible reports and 513,000 accessible reports, covering over 50,000 sites. Over the past year, the project has partnered with organizations including the Electronic Frontier Foundation, Global Voices, GreatFire, Reporters Without Borders, ASL 19, and Twitter. Herdict is also working with Internet Monitor and the Internet Robustness project to develop a system to enable the automated testing of website inaccessibility.

The Center's Chilling Effects Clearinghouse, a comprehensive and transparent online database of cease and desist notices related to online content, continued to work closely this year with Google and Twitter, its two largest volume data sources. Particularly notable this year were: Chilling Effects' work to aid Twitter with its transparency efforts regarding the Turkish government's blockage of the service, publishing Twitter's first "Country Withheld Content" notices for several new countries, including the Netherlands and Pakistan; beginning to publish YouTube notices unrelated to copyright; and ongoing discussions with Google about how best to handle and make public the notices Google has begun to receive as a result of the European Court of Justice's "right to be forgotten" ruling in the Google Spain case.

Following last year's NSA revelations from Edward Snowden, the number of Internet and telecommunications companies releasing "transparency reports" documenting government requests for user data increased substantially. Working with partners from the Center for Democracy and Technology, the Open Technology Institute, the Global Network Initiative, and others, the Berkman Center has been researching the current state of transparency reporting, interviewing companies about their processes and motivations for releasing reports, and identifying good practices for drafting transparency reports. The Center currently is developing a template for transparency reports and a guide to help smaller companies begin the process of writing reports.

In addition to data gathering and analysis, the Berkman Center has invested in a number of projects focused on building tools to enhance the resiliency of the Internet. Internet Robustness, in its second year, is developing and piloting "Amber," a system to allow websites to seamlessly mirror one another's content as a form of distributed mutual aid. Amber works by making

backups of content linked to by the website on which it is installed, automatically notifying users who click links from that website when those links are broken and serving the backup (mirrored) page instead. Perma, a joint effort led by the Harvard Law School Library, also addresses the problem of broken links. When users create a perma.cc link, Perma archives a copy of the content and makes that copy permanently available through the generated link, regardless of what may happen to the original content. Perma is focusing initially on law journals and courts, where the problem of link rot is acute. In its first year of operation, Perma has assembled over 55 library partners, 100 journals, 2,300 individual account-holders and multiple courts working with its platform. Over the past year, the Mesh Networking project has worked to prevent network disruptions by pursuing an auxiliary communication network using mobile phones. The project began as theoretical solution to the network congestion seen after the Boston Marathon bombing and took shape at a stakeholder workshop hosted by Jonathan Zittrain and FCC Chairman Julius Genachowski in January 2014.

The Center's work to analyze and document Internet health also includes efforts to understand public discourse online. The Media Cloud team, led by Faculty Director Yochai Benkler and Fellowship Advisory Board Member Ethan Zuckerman, continued to build a suite of tools around the corpus of media data collected in recent years, including: the continued work and use of the Controversy Mapping (CM) system, designed to track the evolution of online debates by capturing and mapping the links among online content from a wide variety of digital media sites, and the launch of the MediaMeter Dashboard, a media tracking platform to empower users and news providers to see what news they are receiving and missing in their daily consumption and production of media. Berkman's Mobilization for Change in the Middle East and North Africa project seeks to better understand the role of the networked public sphere as an alternative platform for information sharing and mediating collective action related to political and social life in the Arab world. Over the past year, the project's research team—including Berkman staff and fellows and researchers in Egypt and Tunisia—has completed a remapping of the Arab language blogosphere; the team is also analyzing the structure of Twitter conversations related to Egypt and Tunisia.

B.   ICT and the Future of Learning

As a university-based research center, the Berkman Center's educational mission has always been front and center in its work. The Center strives to be at the forefront of efforts to engage in new modes of teaching students, leveraging the promise of online tools, and enhancing or complementing the use of education technologies with in-person and hybrid learning experiences. Since the late nineties, the Center has been deeply invested in the use of Information and Communications Technologies (ICT) in education and the future of learning, with a particular emphasis on pedagogy and teaching.

The heart of the Center's teaching program remains its long-running Cyberlaw Clinic, which celebrates its fifteenth anniversary in 2014. Founded in 1999 as a "clinical research program" with just three students, the Clinic has evolved into what is effectively a full-service high-tech law firm in which students provide real-world legal advice and representation to a broad range of clients under the supervision of practicing lawyers. The past year was one of transition for the Clinic, following the departure of its long-time Director Phil Malone at the close of the 2012-

2013 academic year and the transition to new leadership under Clinical Professor Chris Bavitz. The Clinic has since reconfigured itself and remains on a path toward expansion to allow it to serve more students and clients than ever before. This year was one of the Clinic's busiest and most successful to date, with more than 50 students enrolled during the academic year and projects focused on issues from copyright to privacy to digital civil liberties.

The Berkman Center's highest-profile educational initiative in the 2013-2014 academic year—the renowned CopyrightX program taught by Faculty Director William Fisher—is a hybrid online/offline copyright course that shares with the Clinic a core belief that direct interaction, close supervision, and frequent communication between students and their supervisors are crucial to productive educational experiences. Offered for the second time in Spring 2014, CopyrightX expanded significantly this year, in large part by serving nearly 300 students through new in-person satellite courses offered at affiliated institutions in Brazil, Ghana, India, Italy, Kenya, the Netherlands, Nigeria, Tanzania, and Uganda. The Center is on track to offer a further expanded version of CopyrightX in Spring 2015.

In addition to its emphasis on offering hands-on learning opportunities and establishing close connections between teachers and students, the Center has focused in recent years on the power of interdisciplinary learning. Berkman's move from an HLS-affiliated research institution to a university-wide one more than half a decade ago was premised on a belief that the best learning opportunities draw on the teachings of multiple disciplines. This belief directly informed the Center's launch of the inaugural Harvard University-wide Digital Problem Solving Initiative (DPSI) during the 2013-2014 academic year. DPSI, developed in close collaboration with HLS Dean Martha Minow and led by Urs Gasser, offered Harvard students a unique forum in which to address complex and concrete digital use cases in collaboration and consultation with faculty, staff, and fellow students from across the university. Students participating in the program were empowered to devise their own modes of engagement with problems and bring principles of law, business, policy, and design to bear on their consideration of solutions to those problems. Like CopyrightX, this project will see a new iteration in 2014-2015, as the Center seeks to expand the reach of the program and document its methodology and approach.

The Center's focus on education extends beyond its proverbial four walls and even beyond the campus of Harvard University. Recognizing that MOOCs (Massive Open Online Courses) may democratize higher education but don't currently focus on peer-to-peer means of knowledge transfer and learning, Berkman Center co-founder and Faculty Director Charlie Nesson led a workshop for Boston community members at the Allston Education Portal as part of the "Socrates in Cyberspace" initiative. This event was focused on eliciting small discussions and exploring the most important facets of the dialogic method. Nesson expanded this discussion by collaborating throughout the year with members of the HLS and Harvard Graduate School of Education student bodies to think further about digital realms and dialogue. This work will continue with a HarvardX course with a similar premise during the 2014-2015 academic year.

The Center is committed to approaching—and encouraging students to approach—complex problems from the vantage points afforded by multiple disciplines and recognizes that international perspectives must inform research and engagement with the Internet and the online law, policy, and business landscape. Now in the midst of its second year, the global Network of

Interdisciplinary Internet & Society Centers represents an attempt to collaborate internationally and discuss and engage with key Internet policy concerns of the day. This past year saw the Network host a symposium in Berlin on social participation and events in Rio De Janeiro and in Istanbul addressing Internet governance issues. The Network looks forward to an active 2014-15 academic year, with a major convening planned for October in Turin, Italy.

Finally, as an organization devoted to the study of technology's impact on our world, the Center believes strongly in the power of technology to support educational initiatives. While robust teaching tools will never replace considered pedagogical innovations, such tools can—and, indeed, must—employ the latest technical means to support learning and teaching in an effort to ensure student engagement and maximize impact. To this end, the Center and the HLS Library have continued to refine their "H2O" suite of classroom teaching tools, with an emphasis on the H2O online open casebook platform. The platform offers law teachers the ability to curate, aggregate, and present to students diverse compilations of materials and offers students the ability to read, share, and engage with class materials in unique ways. Relatedly, an ongoing Library initiative is undertaking to scan and digitize all published United States caselaw, the results of which will become a prime source of content for H2O while serving a broader mission to open up public legal resources to the public that needs access to them.

C.   Digital Transition

An important focus of the Center's current work is the study of the legal, regulatory, and governance disruptions and challenges associated with the integration of digital tools into all aspects of life. Activities traditionally conducted through offline institutions—for example in health, education, media, business, arts, and humanities—are enhanced by digitally mediated knowledge creation and information sharing. However, the logic, process, and effectiveness of existing governance mechanisms are being tested and weaknesses uncovered. Perhaps nowhere has the collision of digital reality with outdated regulatory institutions been more jarring than in the case of government surveillance of private activity online. Over the past year, the Berkman Center has been deeply involved in understanding the depth and scope of the issues that have emerged from the Snowden revelations, and in keeping with its multidisciplinary roots, has begun to explore possible solutions from technological, legal, and political angles. The Center's work in this area has included a number of public events as well as smaller off-the-record events that have included participants from government, the private sector, and civil society. Berkman Center faculty and fellows, including Faculty Directors Yochai Benkler and Jonathan Zittrain, as well as Berkman Fellows Bruce Schneier and Axel Arnbak, among others, have occupied a prominent place in framing the ongoing public debate. This exploratory work has laid the foundation for a larger effort that we hope to launch within the next year that will identify alternative policies for addressing cybersecurity, surveillance, and privacy issues that are consistent with a vibrant, open, and generative Internet.

The Center has continued to invest in better understanding the growing challenges and complex dimensions of privacy in Big Data environments. As part of a multi-year research effort funded by the National Science Foundation and in collaboration with Center for Research on Computation and Society, the Institute for Quantitative Social Science, and the Data Privacy Lab, the Berkman Center is working to develop methods, tools, and policies that will allow

researchers to leverage the benefits and value of sharing research data while more fully protecting individual privacy. The Student Privacy Initiative has focused attention on the issues associated with the use of cloud computing technologies by educational institutions and organized its work around three focal areas: privacy attitudes and expectations, school practices and policy, and law and policy. In addition to convening workshops over the past year, this project has released a series of working papers that explore the emerging regulatory issues and possible solutions.

Several Berkman Center projects have helped to facilitate access to knowledge online, contributing tools, platforms, and policy reform. Over the past year, the Berkman Center has continued to support the Digital Public Library of America (DPLA), a project launched at the Center in 2010 and led by Faculty Director John Palfrey. The DPLAfest, a two-day event in the fall of 2013, marked an important milestone in the DPLA's transition into an independent nonprofit. In the past year, the DPLA has tripled the size of its collections to 7 million items and expanded its partners to over 1300 organizations. The Harvard Open Access Project led by Berkman Fellow Peter Suber has made important strides in moving more of academic publishing toward providing open access to scholarly communication, working pro bono with more than 50 universities, funding agencies, and publishers to implement open access policies. The metaLab at Harvard, led by Berkman Faculty Director Jeffrey Schnapp and Berkman Fellow Matthew Battles, has been expanding the frontiers of networked culture in the arts and humanities through digitally enabled pedagogy, the development of new tools and platforms, and a broad range of demonstration projects and media installations. In the past year, development has commenced on Curarium, a new curatorial platform for bringing together diverse collections.

The Center has also worked to join technology and libraries through the Harvard Library Lab. The Library Lab is an internal grant program, run by the Harvard Library Office for Scholarly Communication, through which members of the Harvard community are invited to improve the Library through new projects or innovative improvements on an existing activity. Under the guidance of Faculty Director Stuart Shieber, this was the third year the Center guided and created software for Library Lab projects that included technology development components. Over a dozen projects were supported by the Center through the program this year.

The regulation of online activity, long a focus of attention at Berkman, continues to occupy a central position in the work of the Center. Recognizing the key role of online intermediaries in enabling online communication and networked activity, the Center has launched a comparative study of online intermediaries and regulatory regimes across several countries, including Brazil, India, Thailand, and Turkey. In keeping with the collaborative and international focus of the Center, this project is being conducted under the auspices of the Network of Interdisciplinary Internet & Society Centers, which was incubated at the Berkman Center in 2012.   In Spring 2014, the Center launched a new initiative, Viral Peace, that will study and explore innovative solutions to youth-oriented online hate speech, including counter-speech strategies.

Exploring the economics, technology, politics, and policy of broadband connectivity continues to be a topic of key importance to the Berkman Center. Research efforts over the past year have focused on better understanding the benefits and limitations of different private and public provision models. Faculty Director Susan Crawford and co-authors have produced two papers focused on the opportunities and challenges of municipal broadband provision in the United

States: a case study of the efforts in Leverett, Massachusetts, a city that has taken a novel approach to investing in fiber to the home connectivity for their community, and a paper that documents the use and limitations of publicly owned broadband infrastructure in Washington DC, San Francisco, and Seattle. In the past year, the Berkman Center hosted a series of meetings with faculty, fellows, student researchers, invited outside experts, practitioners, and local policy makers to explore the potential and viability of different broadband provision models in Massachusetts.

In past year, the Berkman Center has renewed its focus on issues of Internet governance. As the international community debates possible changes in the structures that manage key Internet resources, the Center has participated in the NETMundial and related processes and committed, along with partners in the Network of Interdisciplinary Internet & Society Centers, to a research agenda to study alternative governance models with special focus on bolstering the effectiveness of distributed governance and multi-stakeholder mechanisms. In its first phase, this initiative will examine existing models of distributed, collaborative governance through a series of case studies aimed at informing the evolution of—and current debate around—the Internet governance ecosystem. The case studies explore the characteristics, promises, and challenges of each approach, with the goal of identifying tools, techniques, features, processes, and best practices that may be useful for the formation and operation of so-called Distributed Governance Groups.

The Berkman Center has added another new project to its roster, Global Access in Action, that will focus on improving the lives of the global poor with a rethinking of the legal and economic trade institutions that impact developing countries. This project, led by Faculty Director William Fisher in collaboration with Faculty Director Mark Wu and Quentin Palfrey of WilmerHale, explores laws and policies that govern innovation and commercialization of technologies for the poor. The project aims to develop pragmatic solutions to difficult problems that have tangible impact on the lives of the world's poorest populations.

After seven years of providing legal assistance to independent journalism, the Digital Media Law Project (DMLP) has begun the process of spinning off its most effective initiatives and ending its time as a standalone project of the Center. This landmark project has been at the forefront of studying and responding to the legal needs of online media since 2007. Some elements of the DMLP's work, including its influential legal guide, will remain at Center's Cyberlaw Clinic. Other initiatives, including the DMLP's legal referral service for online media ventures, will find a permanent home with organizations outside of the Berkman Center.

D. Events

The Berkman Center regularly convenes representatives from business, law, policy, and academic circles to wrestle with complex questions about the Internet and its impact on the world. As described elsewhere in this report, many such events take place under the activities of particular projects, such as the Network of Interdisciplinary Internet & Society Centers and Student Privacy Initiative programs (each of which hosted workshops throughout 2013-2014). The Center also continued to host and manage special projects, working closely with collaborators to mount larger events and initiatives related to the Center's areas of research and study.

Among our many activities, the Center hosted a series of expert workshops focused on surveillance and privacy. In December 2013, Yochai Benkler gathered 20 of the leading legal scholars and NGOs working on surveillance, NSA reform, and national security to create a network of scholars engaged in the field. In April, Jonathan Zittrain hosted an off-the-record meeting with representatives of government, civil society, the private sector, and academia to address questions related to cybersecurity, surveillance, and privacy, followed by a public discussion. A third event, "Conceptualizing Communication Security," which was co-hosted by the Berkman Center and the Institute for Information Law at the University of Amsterdam, brought together experts from the US and Europe to discuss and share information on the emerging technological, legal, and policy challenges to secure communication and privacy online. Berkman Center faculty and fellows have featured prominently in media coverage of these topics over the past year. In addition to speaking at numerous events on this topic, Yochai Benkler authored a paper on whistleblowing, criminal law and the media, "A Public Accountability Defense for National Security Leakers and Whistleblowers," to be published in the Harvard Law & Policy Review in July 2014.

In August 2013, the Berkman Center co-hosted with Fudan University and the University of St. Gallen a workshop in Shanghai titled "The Interplay Between Innovation and Law." The purpose of this meeting was to examine the connections between innovation and the law from a cross-cultural and multidisciplinary perspective, building upon case studies, use cases, and examples from around the world. The working meeting—a first in a series—was aimed at stimulating a dialogue between a small group of scholars and practitioners from China, Europe, and the US and contributing to the development of an analytical framework on innovation and law for future reference, which includes a map of approaches, tools, examples, and lessons learned from various jurisdictions.

In February 2014, the Berkman Center hosted researchers, technologists, and human rights advocates working to promote greater openness on the Internet around the world through advocacy, training, and tool development. In addition to small working sessions to share knowledge and discuss technology and policy issues, the workshop included a public forum on "Defending an Unowned Internet," which gathered notable academics, technologists, and corporate representatives to discuss opportunities for reforms in policy, technology, and corporate and consumer behavior given disclosures about government surveillance. A second installment of the discussion took place in April 2014, when two members of the National Security Agency joined Berkman Faculty and Fellows for a conversation on "Intelligence Gathering and the Unowned Internet."

The Berkman Center and UNICEF co-hosted an international symposium on children, youth, and digital media at Harvard University in April 2014. The symposium brought together 150 participants from 5 continents to map and explore the global state of relevant research and practice, share, and discuss insights and ideas from the developing and industrialized world, and encourage collaboration between participants across regions and continents. With half of the participants coming from the Global South and a clear focus on voices and issues from the developing world, this first-of-its-kind symposium addressed the challenges and opportunities children and youth face in the digital environment, including but not limited to issues such as

inequitable access, risks to safety and privacy, skills and digital literacy, and spaces for participation and civic engagement and innovation. The symposium, led by Youth and Media Director and Berkman Fellow Sandra Cortesi, Berkman Fellow Gerrit Beger, and Executive Director Urs Gasser, was preceded by a workshop and major paper release in Fall 2013, focused on discussion around a new scoping study: "A Global Agenda for Children's Rights in the Digital Age: Recommendations for Developing UNICEF's Research Strategy," conducted by Berkman Fellow Sonia Livingstone and incoming Fellow Monica Bulger for UNICEF's Office of Research.

TABLE OF CONTENTS

I. REPORT OF ACTIVITIES

A. Teaching, Practice, and Advocacy

Since the Berkman Center's inception, its top priority has been teaching across the wide range of our areas of inquiry.

1. Contributions to Harvard's Teaching Programs

Berkman faculty, staff, and fellows taught a number of courses during the 2013–2014 academic year, including:

Fall 2013

- "American Jury," a course taught by William F. Weld Professor of Law and Berkman Center Faculty Director Charles Nesson at Harvard Law School;

- "Challenges Facing Emerging Economics," a 1L reading group taught by Assistant Professor and Berkman Center Faculty Directory Mark Wu at Harvard Law School;

- "Intellectual Property Law: Advanced," a course taught by WilmerHale Professor of Intellectual Property Law and Berkman Center Faculty Chair Terry Fisher at Harvard Law School;

- "Internet and Society," a course taught by Charles Nesson at Harvard Law School;

- "Practical Lawyering in Cyberspace," a seminar taught by Clinical Instructors and Lecturers on Law Christopher Bavitz and Dalia Topelson of the Center's Cyberlaw Clinic at Harvard Law School; and

- "Trademark," a course taught by Terry Fisher at Harvard Law School.

Winter 2014

- "Communications and Internet Law and Policy," a course taught by Jack N. and Lillian R. Berkman Professor of Entrepreneurial Legal Studies and Berkman Center Faculty Director Yochai Benkler at Harvard Law School;

- "Driving Digital Strategy," an executive education course taught by Andreas Andresen Professor of Business Administration and Berkman Center Faculty Director Felix Oberholzer-Gee at Harvard Business School; and

- "Intellectual Property and Strategy," an executive education course taught by Felix Oberholzer-Gee and Terry Fisher at Harvard Business School.

- "Cold Storage—An Interactive Documentary Project," a seminar taught by Professor of Romance Languages & Literarature and Berkman Center Faculty Director Jeffrey Schnapp at Harvard College;

- "Communications Law," a course taught by Visiting Professor and Berkman Center Faculty Director Susan Crawford at Harvard Law School;

- "Comparative Online Privacy," a seminar taught by Professor of Practice and Berkman Center Executive Director Urs Gasser at Harvard Law School;

- "Contemporary Issues in Foreign Intelligence Gathering," a seminar taught by Professor of Law and Computer Science and Berkman Center Faculty Director Jonathan Zittrain at Harvard Law School;

- "Copyright," a course taught by Terry Fisher at Harvard Law School (offered concurrently as an online course; in addition to the Executive Summary, please see "CopyrightX" in the section on Research and Scholarship below for further detail);

- "Digital Platforms," a course co-taught by Jonathan Zittrain and Professor Lawrence Lessig at Harvard Law School;

- "Homeless Paintings of the Italian Renaissance: A Hands-On Curatorial Experiment," a seminar taught by Jeffrey Schnapp at Harvard College;

- "International Trade Law," a course taught by Mark Wu at Harvard Law School;

- "Internet and Society: Technologies and Politics of Control," a course taught by Berkman Center Fellow Andy Sellars at the Harvard Extension School;

- "Law and the International Economy," a course taught by Mark Wu at Harvard Law School;

- "Music and Digital Media," a course taught by Christopher Bavitz at Harvard Law School;

- "Online Law and Business in a Globalized Economy," a seminar taught by Urs Gasser at Harvard Law School;

- "Property," a course taught by Yochai Benkler at Harvard Law School; and

- "Teaching Copyright," a course taught by Terry Fisher at Harvard Law School.

As part of the Berkman Center's teaching program, HLS students participated in the Center's Cyberlaw Clinic, which—as described more fully below—offered seats to interested students in

the Clinic's program during the Fall, Winter, and Spring terms and tied closely to the "Practical Lawyering in Cyberspace" and "Music and Digital Media" courses referenced above.

2. The Cyberlaw Clinic

The Berkman 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 this area.

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.

With the departure of the Clinic's former director, HLS Clinical Professor Phil Malone, at the end of the 2012-2013 academic year, this year has been a year of growth and transition for the Cyberlaw Clinic. Clinical Instructor Chris Bavitz was appointed Managing Director of the Clinic effective July 1, 2013, and Berkman Center Faculty Director Susan Crawford—who is visiting at Harvard Law School during calendar year 2014— served as a senior advisor to the Clinic during the Spring 2014 semester.

The Cyberlaw Clinic enrolled 22 students in Fall 2013, 6 in Winter 2014, and 25 in Spring 2014, for a total of 53 student slots during the 2013-2014 academic year. Those students enrolled for a total of 124 credits over the course of the year, and the Clinic's supervising attorneys managed more than 7,400 hours of student work.

During the summer, the Clinic welcomes students from a diverse range of law schools in order to continue its ongoing work for existing clients and help with intake for the coming year. In Summer 2014, the Clinic brought on five law student summer interns.

Further changes are afoot for the 2014-2015 academic year. Chris Bavitz has been promoted to Clinical Professor of Law at Harvard Law School, and Clinical Instructor Dalia Topelson has been promoted to Assistant Director of the Clinic. In addition, long-time Berkman colleague and former Assistant Director of the Center's Digital Media Law Project, Andy Sellars, has been brought on board as a Clinical Fellow in order to continue to meet the demand for the Cyberlaw Clinic by HLS students.

Substantive Practice and Client Base
During the past year, the Clinic has continued to focus its work on a number of key subject areas, including: consumer protection, privacy, and compliance; cybercrime and youth online safety; general Internet business law; government innovation; intellectual property (including copyright, trademark, and patent); litigation and amicus advocacy; online speech, media law, and the First Amendment; and access to justice. The Clinic served a growing number and a wider range of clients than ever before, including individuals, small start-ups, non-profit organizations, academics, and government entities.

During 2014, Faculty Director Susan Crawford oversaw a number of government technology Cyberlaw Clinic projects in partnership with the mayor's office of the City of Boston, including reform of technology procurement processes, work on the possibility of a municipal fiber network in Boston, changes to Boston's open data policies, video privacy advice, and other matters.

Simultaneously, the Clinic intensified its strategy to integrate student representation and legal support with research projects at the Berkman Center. For example:

- Clinical Instructor Dalia Topelson and Cyberlaw Clinic Managing Director Chris Bavitz contributed to the Berkman Center's 2013 Internet Monitor Annual Report: "Reflections on the Digital World," a unique collection of short essays addressing notable events and trends in the digitally networked environment. Dalia Topelson's piece, "The New Guard," reflects on the implications of moving data and information to digital platforms, while Chris Bavitz and former Cyberlaw Clinic student Bryan Han team provided an overview of India's IT Act and the scope of protection for online intermediaries in India.

- In November 2013, the Clinic collaborated with the Student Privacy Initiative to release a briefing document that addressed two of the major federal legal regimes that govern privacy of children's and students' data in the United States: the Children's Online Privacy Protection Act (commonly known as COPPA) and the Family Educational Rights and Privacy Act (commonly known as FERPA). The guide aims to offer schools, parents, and students a basic understanding of some of the laws that may apply when cloud computing tools are used for educational purposes. Clinic students Ritu Gupta and Irina Oberman, along with Dalia Topelson and Chris Bavitz, co-authored the paper.

Clinical students provided representation to the following clients during 2013-2014, among many others: 100kin10; 596 Acres; CommonLit; the Commonwealth of Massachusetts Information Technology Division; the Consortium of School Networks; the Digital Media Law Project (formerly the Citizen Media Law Project); the Electronic Frontier Foundation; H2O; FracTracker; the Massachusetts Trial Court's Special Adviser for Access to Justice Issues; the Mayor of Boston's Office of New Urban Mechanics; the New York Public Library; Nollywood Workshops; Public Radio Exchange; Racing Horse Productions; ShoutAbout, Inc.; StopBadware, Inc.; WGBH; and the Berkman Center's Student Privacy Initiative.

Representative Cases and Matters
A few prominent examples of cases and projects handled by Clinic students during the past academic year include:

(a) Litigation. The Clinic, both directly and working in tandem with law firms located around the United States, has represented individuals and organizations in connection with pre-litigation disputes and active litigation concerning a range of issues, including court access, online speech, and intellectual property. Of note in 2013-2014, the Cyberlaw Clinic assisted the Electronic

Frontier Foundation and other attorneys in filing a formal challenge to the so-called "podcasting patent," held by Personal Audio LLC, which has relied on the patent to pursue podcasters for licensing fees. In April 2014, the Patent Trial and Appeal Board found that the Electronic Frontier Foundation had "a reasonable likelihood" of prevailing in its challenge.

(b) Amicus Advocacy. Amicus advocacy remains a core part of the Clinic's practice, and the Clinic regularly contributes to amicus briefs throughout the year. For example:

- In July 2013, the Cyberlaw Clinic filed an amicus brief in *U.S v. Auernheimer* on behalf of the Digital Media Law Project (DMLP). The DMLP argued that the First Amendment prohibits the government from punishing the disclosure of true, newsworthy information, even if the information was unlawfully obtained.

- In September 2013, the Cyberlaw Clinic filed an amicus brief in *Commonwealth v. Augustine*, a case pending in the United States District Court for the District of Massachusetts, on behalf of the Electronic Frontier Foundation (EFF) in the Supreme Judicial Court of Massachusetts. In the brief, EFF argued that law enforcement must obtain warrants before gaining access to long term cell site data, which is the historical geo-location data that is stored on individuals' mobile devices.

- In October 2013, the Cyberlaw Clinic filed an amicus brief in *Commonwealth v. Gelfgatt* on behalf of the American Civil Liberties Union Foundation (ACLU), the ACLU of Massachusetts, and EFF. In the brief, amici argued that compelling a defendant to decrypt their electronic data for use against them in a criminal proceeding violates the defendant's fifth amendment right against self-incrimination.[1]

Courts issued decisions this year in at least three cases in which the Clinic submitted amicus briefs, ruling in a manner consistent with positions advocated by the Clinic. In April 2014, in the *Auernhemier* case mentioned above, the Third Circuit vacated the defendants' conviction on jurisdictional grounds. In February 2014, the Massachusetts Supreme Judicial Court ruled in *Augustine*, mentioned above, agreeing with EFF and holding that police must obtain search warrants before obtaining long-term cell site data. Finally, in August 2013, the Sixth Circuit issued a decision in *Seaton v. TripAdvisor LLC* that aligned with arguments made by the Clinic in an amicus brief submitted on behalf of the DMLP in February 2013. The court held that a top ten list of the "Dirtiest Hotels" amounted to rhetorical hyperbole, and undermined any impression that TripAdvisor was seriously claiming that the plaintiff's hotel was, in fact, the dirtiest hotel in America. In addition, the Court noted that TripAdvisor could not be held liable for defamatory statements made by TripAdvisor users under the Communications Decency Act, 47 U.S.C. § 230(c)(1). The Clinic's brief for the DMLP asked the Sixth Circuit to make clear

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[1] The court ultimately held in favor of the Commonwealth, holding that "the defendant's act of decryption would not communicate facts of a testimonial nature to the government beyond what the defendant already has admitted to investigators." The question remains whether a court can compel a defendant to decrypt an encrypted computer, absent an admission by the defendant to an investigator.

that website operators that aggregate citizen reports and rely on that data to draw conclusions cannot be liable for defamation based on those conclusions.

(c) Media Law and Online Speech. The Cyberlaw Clinic has been very active in addressing a broad spectrum of legal issues faced by web-based media, including bloggers, website commenters, and other online speakers. The Clinic has provided advice and counsel in matters involving First Amendment issues, defamation claims, immunity under Section 230 of the Communications Decency Act, and anonymous speech online. Most notably, the Clinic continued its long-running collaboration with the Digital Media Law Project and plans to maintain some functions and resources of the DMLP going forward, under the auspices of the Clinic. In addition, the Clinic supported a number of clients that were referred through the DMLP's Online Media Legal Network. In collaboration with WGBH (and in support of the Boston TV News Digital Library project), the Clinic released a "Digitizing News Archives" flowchart, which provides a high-level overview of some key legal questions that may arise when one digitizes news content and makes it available online. The addition of Andy Sellars to the Cyberlaw Clinic's staff in 2014-2015 will ensure that the Clinic continues to address these issues for its clients.

(d) Intellectual Property. The Clinic continued to work with the Electronic Frontier Foundation in 2013-2014 to identify and submit to the United States Patent and Trademark Office examples of relevant prior art in connection with pending patent applications. The project takes advantage of provisions of the America Invents Act, which permit third parties to file such "pre-issuance submissions." The project harnesses the power of the Internet to crowdsource the identification of relevant prior art in specified technical fields. The initial stages of the project have focused on the three-dimensional printing industry, a field in which significant developments have been made by makers and hobbyists, and the second stage involves patents in the mesh networking space. This past year, the Clinic also solicited prior art to prevent a patent from being filed to protect innovation around solar based energy to power laptops and other mobile devices. The Cyberlaw Clinic also addressed a wide range of other intellectual property issues during the past year, including:

- The Clinic's students continued their ongoing work on a project in collaboration filmmaker Aimee Corrigan regarding developments in Nigeria's "Nollywood" film industry. The project seeks to offer input on issues surrounding the piracy, distribution, and funding of movies in Nigeria, as well as a broader host of issues relevant to those who create and disseminate Nigerian films worldwide.

- The Clinic advised a longtime media client on issues relating to content aggregation, including legal questions around negotiating deals with media aggregators.

- For more than one client, the Clinic addressed issues relating to the protectability of state and federal government works and the intersection between copyright and freedom of information laws.

- The Clinic provided documentary filmmakers and others advice on fair use and other copyright-related issues.

(e) Access to Justice. Since early 2010, the Clinic has been assisting the Massachusetts Trial Court's Special Adviser for Access to Justice Issues with research, advice, strategic planning, and development of best practices for using technology to pursue access to justice initiatives throughout the Commonwealth. The project has helped the Court to identify and implement some of the most effective technologies to assist self-represented and other litigants in their dealings with the court system. The Clinic continued this work during the 2013-2014 academic year.

(f) Innovation and Entrepreneurship. The Clinic historically has advised and supported small startups, innovators, and entrepreneurs in a variety of contexts. During 2013-2014, the Clinic's Managing Director served as Harvard Law School's Dean's Designate to Harvard's university-wide Innovation Lab, also known as the i-Lab, assisting with the provision of legal and other resources at the Lab.

(g) Child Protection and Youth Online Safety. The Cyberlaw Clinic continued to promote youth online safety through a wide range of collaborations, and children's privacy issues—in particular—were at the top of the agenda for many of the Clinic's clients:

- Clinic students provided research and related support to clients on questions relating to the Children's Online Privacy Protection Act (COPPA) and Family Educational Rights and Privacy Act (FERPA) as they pertain to children's private information.

- The Cyberlaw Clinic helped the Consortium of School Networks prepare a toolkit aimed at helping K-12 school districts protect student privacy when leveraging online services and tools both for the school and in the classroom.

- The Clinic also joined a collaboration with Fordham Law School's Center on Law and Information Policy (CLIP) to develop and release a curriculum for privacy education geared toward middle-school students. Clinic students helped adapt and roll out this program by launching the curriculum with local middle school students in Cambridge.

The Clinic has also seen a growing interest among its clients and collaborators in issues relating to education technology and the future of education, and the Clinic expects such issues will be central to its docket in the coming years.

(h) Consumer Protection and Regulatory Compliance. The Cyberlaw Clinic has done a variety of work in the area of consumer protection and regulatory compliance. Notably, the Clinic continued its work with StopBadware, an online consumer protection initiative to combat malware that was founded at the Berkman Center and that now operates as a fully independent 501(c)(3) non-profit corporation.

(i) Filtering, Surveillance, and Censorship. Filtering, surveillance, and censorship of online activities are problems in countries throughout the world. The Cyberlaw Clinic has worked with a number of entities at the forefront of global efforts to document and respond to these issues.

During the past year, the Clinic continued to collaborate with the Global Network Initiative (GNI), a multi-stakeholder group of companies, civil society organizations (including human rights and press freedom groups), investors, and academics that have adopted a collaborative approach to protecting and advancing freedom of expression in the information and communications technology sector. In March 2014, Clinical Instructor Dalia Topelson was appointed as an alternate of the board of the Global Network Initiative, representing the Berkman Center as an academic stakeholder in the organization.

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. For example, the Clinic helped sponsor, plan, and/or support the following events:

- Throughout the 2013-2014 academic year, the Cyberlaw Clinic teamed up with other groups on campus–including groups like Harvard's Journal of Law and Technology (JOLT), the Harvard Law and Entrepreneurship Project (HLEP), and the Harvard Innovation Lab–to present conversations with industry and thought leaders in the technology space. These individuals–all HLS alumni and experts in residence at Harvard's Innovation Lab–shared insights with students about innovation and entrepreneurship. Speakers included Neil Flanzraich, Executive Chairman of Kirax Corporation and Parigenix, Inc.; John Williams, partner in the Boston office of the Bridgespan Group; and Michael Fertik, CEO and founder of Reputation.com.

- The Clinic presented a conversation with Electronic Frontier Foundation Legal Director Cindy Cohn about EFF's practice and more broadly about technology law practice in the public interest.

- In December 2013, Cyberlaw Clinic student Alyssa Martin and Chris Bavitz presented a copyright workshop at Cambridge Community Television.

- In April 2014, the Cyberlaw Clinic, with the Harvard Law Documentary Studio, presented a panel discussion about lawyers' use of media, featuring filmmakers and human rights attorneys.

Other noteworthy events involving Clinic staff included the following:

- Cyberlaw Clinic Managing Director Chris Bavitz spoke in July 2013 to participants in Cambridge Community Television's Summer Media Institute about copyright law.

- In July 2013, Chris Bavitz addressed Spanish and Mexican digital business representatives to discuss pragmatic approaches to copyright issues at Real Colegio Comlutense's International Digital Business Seminar.

- In October 2013, Chris Bavitz participated on a panel, "Taking on the Takedown Notice: Copyright & Educators in Harmony," at the NYU School of Law, addressing

questions about digital rights from New York high school, college, and graduate school students. Fellow panelists included NYU Professor of Law Jeanne Fromer; Elisa Kreisinger, Artist-in-Residence at the Eyebeam Art+Technology Center; Jill Lesser of the Center for Copyright Information; and Gigi Sohn of Public Knowledge.

- In November 2013, Chris Bavitz moderated a panel at the Northeast Regional Convening of the American Constitution Society for Law and Policy dealing with "Equality in the Internet Age: Privacy Law, Data Access, and the NSA."

- In December 2013, Dalia Topelson participated in Yahoo's first User First meeting, providing small start ups with advice on how to incorporate and think about human rights issues as they grow a new business and build a platform. Dalia Topelson participated again in the Miami version of this event in June 2014, again helping young start ups think about human rights issues as they build their companies and platforms.

- In January 2014, former Clinical Instructional Fellow Kit Walsh participated on a panel alongside Andy Sellars from the Digital Media Law Project, Berkman Fellows Kate Darling and Nathan Matias, and Berkman Fellow Advisory Board Member Wendy Seltzer to help coders understand their legal rights.

- In February 2014, Chris Bavitz participated on a panel hosted by the Copyright Society of the U.S.A. discussing the state of the fair use defense.

- In February 2014, Dalia Topelson participated on a panel hosted by Common Sense Media and the Annenberg Retreat at Sunnylands, discussing student privacy issues arising out of the use of online services and tools by educators and schools.

- In March 2014, Dalia Topelson joined attorneys from Foley Hoag and Yahoo's global head of human rights Ebele Okobi on a panel discussing what technology companies can do to protect the human and civil rights of their users at RightsCon in San Francisco.

- In April 2014, Chris Bavitz participated in the Harvard Business School Digital Initiative Beta Summit, discussing the state of the digital music industry with Mark Kates of Fenway Recordings and Jim Lucchese of The Echo Nest.

- In June 2014, Chris Bavitz presented to students at University of Geneva's Internet Law Summer School on the topic of "Litigating Internet Cases," sharing insights about substantive, procedural, and strategic concerns involved in counseling tech clients.

- In June 2014, Chris Bavitz addressed the Harvard Club of Switzerland about modes of legal education, talking about the experience of the Cyberlaw Clinic and the application of a clinical teaching model to high-tech practice.

B. Research and Scholarship

The Berkman Center enjoys a global reputation for cutting-edge work centered on the relationships between the Internet, law, and society. Our mode—entrepreneurial nonprofit—embraces our pursuit of scholarly research in the manner and spirit of an academic think tank, anchored by the diverse collaborative and individual work of our faculty and fellows. This year, the Center launched a number of new initiatives and continued work on an extensive array of projects.

1. New Projects

Cyberlearning. With support from the National Science Foundation, the Center began the Cyberlearning Project in Spring 2014. The project is a three year collaboration with two close collaborators: Mimi Ito, Professor in Residence at the University of California Irvine (UCI) Humanities Research Institute and Research Director of UCI's Digital Media and Learning Hub; and Mitchel Resnick, Professor of Learning Research and head of the Lifelong Kindergarten group at the MIT Media Lab. This interdisciplinary project seeks to address resilient challenges in expanding pathways to computational fluency and STEM interests and careers through multiple approaches: designing online tools and environments; researching social and cultural factors; and examining the legal and policy dimensions. The Cyberlearning Project also aims to create diversified pathways to the Scratch programming environment by integrating the interest areas and cultural referents of non-dominant youth. New project research also addresses the national need for a diversified high-tech workforce and a computationally fluent public, as well as informs the design and deployment of related efforts in STEM education. The Center's team, led by Urs Gasser with support from Berkman Fellow Paulina Haduong and in collaboration with the Cyberlaw Clinic, is leading the legal and policy aspects of the project.

Digital Problem-Solving Initiative. The Harvard Digital Problem-Solving Initiative (DPSI), led by Urs Gasser with support from Project Manager Nathaniel Levy, Youth and Media Director Sandra Cortesi, and Berkman Fellow Paulina Haduong, was incubated at the Center over the course of the 2013-2014 academic year. DPSI is an innovative and highly collaborative educational effort that enables students, faculty, fellows, staff, and other members of the Harvard community to work in teams on practicable and concrete digital use cases—problems and opportunities in the digital realm—across the university. It offers students a novel opportunity to enhance and cultivate competency with digital tools and online practices as teams engage with research, creative production, and policies governing the digital world. In 2013-2014, DPSI teams explored five different use cases, all of which required interdisciplinary work, touched on a unique suite of issues, and invited different modes of engagement from its participants. Each use case was designed to be flexible enough to enable and encourage students to incorporate their ideas and thoughts into the project and further shape its vision and goals together with their peer team members and mentors. In the second iteration of DPSI, the Center intends to extend the venture across a greater section of the University, refine DPSI's pedagogical model, enhance its contributions to real-world problem-solving at Harvard, and increase its educational impact. [http://www.cyber.law.harvard.edu/research/dpsi]

Global Access in Access in Action. Global Access in Access in Action (GAiA) maximizes the potential of technology to improve the lives of the global poor. The project, which applies fresh thinking through a practical lens that focuses on impact, explores laws and policies that govern the innovation and commercialization of technologies for the poor. GAiA places a particular focus on on-the-ground implementation and impacts, including among others licensing language, trade policy, investment incentives, regulatory frameworks. GAiA is led by Faculty Director Terry Fisher in collaboration with Sara Boettiger, Quentin Palfrey (of WilmerHale), and Faculty Director Mark Wu. The project has four workstreams: Access to Medicines, Alternative Incentive Mechanisms, Access to Seed, and Trade Policy. In August 2014 GAiA held a workshop on intra-country differential medicine pricing and humanitarian licensing of pharmaceutical products. The workshop, titled "Best Practices for Access to Medicines," also served as GAiA's introduction to diverse stakeholder groups, including the pharmaceutical industry, government, international procurement and donor agencies, civil society, and academia. [http://cyber.law.harvard.edu/research/globalaccessinaction]

Hate Speech Online ("Viral Peace"): Led by Urs Gasser and Youth and Media Director Sandra Cortesi, the Berkman Center launched an effort to form a global network of experts, educators, practitioners, and ambassadors that will facilitate, promote, and strengthen collaboration to counter youth-oriented hate speech online. The initiative builds upon the "Viral Peace" project, which was inspired by the outcomes of a meeting at the Berkman Center in 2008, piloted at the US Department of State in 2011, and is now hosted at the Center. The project seeks to fight hate speech online by enhancing the capabilities of youth, community leaders, social media influencers, and civic activists around the world to stand up to hate and violence online. To form the thematic network, the Berkman Center will work with partners such as former Special Representative to Muslim Communities at the US Department of State and current IOP Fellow Farah Pandith, former Commissioner of the Boston Police Department and current IOP Fellow Ed Davis, technology entrepreneur Shahed Amanullah, the London-based Institute for Strategic Dialogue (ISD), and other "Viral Peace" collaborators, among others. With the Berkman Center serving as the coordinator and research partner, the thematic network will aim to (1) deepen the understanding of youth-oriented hate speech online, (2) develop a set of curricula and learning modules that empower youth to appropriately respond to hate speech online (prevention and intervention mechanisms), (3) field-test these teaching and learning materials on the ground, and (4) to create a network of collaborators worldwide that will include universities, institutions, and communities in every state in the US and in countries on each continent. [https://cyber.law.harvard.edu/node/9106]

Internet Governance. This major Network of Centers project aims to inform the debate about the future of Internet governance. Led by Urs Gasser and Ryan Budish, the Center is identifying, assessing, and testing innovative approaches to distributed and collaborative Internet governance. Among other research outputs, the Internet Governance Project will carefully identify and develop case studies to highlight challenges and successes both inside and outside the Internet space. One study explores the ways in which Switzerland developed a distributed and collaborative approach to improve coordination of the rollout of fiber to the home, in the absence of laws or regulations compelling cooperation between competitors, government, and other stakeholders. The second looks at how various local, national, and regional governments coordinate management of the White Volta River Basin in Northern Ghana. The Internet

Governance Project is also assisting NoC partners with their case studies that include topics such as air traffic slotting regulations, the drafting of the Brazilian Civil Rights Framework for the Internet, and the innovative forms of participation that Brazil's CGI.br has enabled. This project also involved a series of academic roundtables that NoC partners hosted: two in Brazil before and after the NETMundial global multistakeholder meeting on the future of the Internet, and the third in Istanbul, Turkey.

2. Ongoing Projects

Broadband Project. The Broadband Project, led by Faculty Directors Yochai Benkler and Susan Crawford and Research Director Rob Faris, carries out policy-relevant research on questions related to broadband provision domestically and internationally. In the past year, Susan Crawford and co-authors have produced two papers focused on the opportunities and challenges of municipal broadband provision in the United States: a case study of the efforts in Leverett, Massachusetts, which has taken a novel approach to investing in fiber to the home connectivity for their community, and a paper that documents the use and limitations of publicly owned broadband infrastructure in San Francisco, Seattle, and Washington, DC. In the past year, the Center has hosted a series of meetings with faculty, fellows, student researchers, outside experts, practitioners, and local policy makers to explore the potential for different public and private provision models in Massachusetts. The Center's researchers are currently working with data from the National Broadband Map to assess the state of wireline competition in the US. [http://cyber.law.harvard.edu/research/broadband]

Chilling Effects. Led by Berkman Fellow Advisory Board Member Wendy Seltzer and Project Coordinator Adam Holland, the Chilling Effects Clearinghouse is a comprehensive and transparent online database of cease and desist notices related to online content. The project aims to educate the public about the different kinds of cease and desist letters—both legitimate and questionable—that are being sent to Internet publishers. This will provide transparency regarding the ecosystem for such processes and allow researchers to investigate the extent to which complaints are being made within the boundaries of existing law. This year, Chilling Effects continued to work closely with its two largest sources of notices by volume, Google and Twitter. Key developments in those working relationships included: aiding Twitter with their transparency efforts regarding the Turkish government's blockage of the service; publishing Twitter's first "Country Withheld Content" notices for several new countries, including the Netherlands and Pakistan; beginning to publish YouTube notices unrelated to copyright; and beginning discussions with Google about how best to handle and make public the notices Google has begun to receive as a result of the Court of Justice of the European Union's "right to be forgotten" ruling against Google in May 2014. Chilling Effects has also joined a group of Harvard researchers led by Jonathan Zittrain who will be seeking to study the "right to be forgotten" notices in hopes of drawing initial conclusions about the impact of the new policy and to make recommendations about future implementation.

Chilling Effects provided access to its data in raw form to several different research efforts this year, most notably the Takedown Project, a significant effort at the University of California, Berkeley led by Joe Karaganis and Jennifer Urban and of which Chilling Effects is a member. As well, the project's long-anticipated new website will launch later in 2014. The site will not

only contain all of the current database, stored and rendered in a more nuanced and useful form, but will also provide a powerful API for use by notice submitters, academic researchers and casual users. With these new tool in place, Chilling Effects hopes to spend the coming year internationalizing its foundation and reach, conducting and promoting new research efforts and data visualizations, conducting an outreach effort to solicit notices from a wider variety of sources, and investigating how best to standardize the submission process.
[http://chillingeffects.org/]

CopyrightX. CopyrightX is a networked course offered in collaboration the Center, HLS, and HarvardX. The second run of the course was taught in Spring 2014 by Terry Fisher, with support from Project Manager Nathaniel Levy, Berkman Fellow Ana Enriquez, and Technical Support Specialist Ed Popko. The Spring 2014 course reached 525 students via sections taught by Harvard Teaching Fellows and approximately 275 students in satellite courses affiliated with the following collaborating institutions: Nexa Center for Internet & Society in Turin, ITSrio in Rio de Janeiro, National Law University Delhi in India, the Kenya Copyright Board in Nairobi, Ghana-India Kofi Annan Centre of Excellence in ICT in Accra, the Nigerian Institute of Advanced Legal Studies in Lagos, the Centre for Health, Human Rights, and Development in Kampala, the Institute for Information Law in Amsterdam, Kenyatta University School of Law in Nairobi, the Open University of Tanzania and the Copyright Society of Tanzania in Dar es Salaam, and Norman Manley Law School in Kingston. Each section or satellite met for weekly discussions, either online or in person, for the duration of the 12-week course. In addition, students read, watched lecture videos, and participated in asynchronous online forums and four guest speaker special events with students in an HLS residential course on copyright law. The Teaching Fellows were enrolled in a special seminar on copyright law and pedagogy, also taught by Terry Fisher. CopyrightX will be offered again in Spring 2015.
[http://copyx.org/]

Digital Media Law Project. In its final year of operation, the Digital Media Law Project (DMLP) has been actively engaged in a wide range of initiatives designed to study and respond to the legal needs of online media. The DMLP, led by Jeff Hermes and Andy Sellars, maintained and expanded its popular online resources, including its Legal Guide, Database of Legal Threats, and the DMLP Blog. Most significantly, the DMLP launched a new version of its tax-related resources for non-profit journalism, including a new video introduction to Section 501(c)(3) tax exemptions and a library of successful IRS filings. The DMLP's attorney referral service, the Online Media Legal Network, continued serving an active constituency of digital journalism and media projects, placing its 500th client matter during Fall 2013. The DMLP also contributed to a submission by a coalition of media entities to the European Court of Human Rights on the liability of news entities for anonymous reader comments. In its research capacity, the project released two major reports in the past year: (1) "The Legal Needs of Emerging Online Media: The Online Media Legal Network after 500 Referrals," which analyzed client and matter data from the DMLP's referral service for trends and emergent issues; and (2) "Who Gets a Press Pass? Media Credentialing Practices in the United States," a report on a nationwide survey of more than 1,300 journalists regarding their experiences in applying for media credentials from government and private organizations.

Continuing its tradition of advising on media law issues locally, the DMLP worked with Boston NPR member station WBUR on "Bad Chemistry," an interactive report on the Massachusetts drug lab crisis, and served on the Massachusetts Supreme Judicial Court's Online Publication Working Group, a panel of Massachusetts attorneys convened by the Court to analyze issues relating to the publication of attorney discipline reports online. DMLP staff members spoke frequently in public and in the press; in-person appearances included leading a discussion on intermediary liability at South by Southwest, advising attorneys and journalists in London and New Delhi on the development of legal support networks for media, speaking in Rijeka, Croatia about how social media platforms control speech, and keynoting technology law conferences in California and Georgia. In addition, DMLP was very active as an amicus curiae in court cases, filing briefs in the US Courts of Appeals for the Third, Sixth, and Ninth Circuits on a range of legal issues including intermediary liability, crowdsourced journalism, the application of the Computer Fraud and Abuse Act to journalistic activity, and blogging by state officials in their private capacity.

[http://www.dmlp.org/]

Digital Public Library of America. The Digital Public Library of America (DPLA) Planning Initiative, led by John Palfrey, Berkman Fellow Maura Marx, and Senior Project Manager Rebekah Heacock, was founded at the Center in October 2010 to realize the long-standing vision of a national digital library for the United States. In Spring 2013 the DPLA was established as an independent 501(c)(3) nonprofit, hired its initial staff, and launched dp.la, an open source metadata platform containing more than 2.4 million records. Over the past year, the Center worked closely with the DPLA team to support DPLAfest, a free two-day event open to the public that brought together hundreds of librarians, archivists, museum professionals, developers, technologists, publishers, authors, teachers, students, and many others to celebrate the DPLA's successful April 2013 launch, its recent milestones, and its future. Since the launch, the DPLA has nearly tripled both the size of its collections, from 2.4 million to 7 million items, and its number of partners, from 500 to over 1300 organizations; launched an innovative new book-browsing interface for its 1.6 million books; and established a popular volunteer Community Reps" program that has members in all 50 states and on four continents.

[http://dp.la/]

Freeing the Law. The HLS Library has undertaken to scan and digitize all published US case law. The ultimate goal of the Freeing the Law Project is to provide free public access to US case law for the benefit of scholars, researchers, governments, entrepreneurs, the legal community and the general public. The project is led by Jonathan Zittrain, HLS Library Associate Director for Collection Development and Digitization Kim Dulin, and Project Manager Adam Ziegler.

The Global Network Initiative. In 2013-2014, the Center continued serving as a key academic stakeholder in the Global Network Initiative (GNI). In addition to participating in the GNI and the Telecommunications Industry Dialogue on Freedom of Expression and Privacy in Brussels in 2013, the Center's Cyberlaw Clinic continued to support GNI's research initiatives targeted at advancing the protection of human and civil rights on the internet. In March 2014, Clinical Instructor, Dalia Topelson, was appointed as an alternate to GNI's board, further solidifying the Center's participation in the GNI. In addition to her role on the board, she also serves on GNI's learning and policy, and governance and accountability committees.

[http://cyber.law.harvard.edu/research/principles/]

H2O. As part of their commitment to providing open-source online educational resources and materials, the HLS 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. Project Coordinators Adam Ziegler and Brett Johnson have worked closely with Berkman Director of Technology 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. The platform counts 1335 users in the 2013-2014 academic year, including an estimated 20 faculty who use H2O to develop, remix, and share online textbooks under a Creative Commons license. These free online casebooks can be curated to fit the faculty's pedagogy and teaching objectives and draw on a growing corpus of diverse materials. This summer, the HLS Library and the Center are co-hosting a legal pedagogy workshop featuring H2O.
[http://cyber.law.harvard.edu/research/h2o]

Harvard Open Access Project. Led by Berkman Fellow Peter Suber with support from Project Coordinators Adam Holland and Amanda Page, the Harvard Open Access Project (HOAP) fosters open access (OA) within Harvard and beyond, undertakes research and policy analysis on OA, and provides access to timely and accurate information about OA itself. During the 2013-2014 academic year, HOAP consulted pro bono with more than 50 universities, funding agencies, and publishers developing OA policies. It ran the Open Access Tracking Project (OATP) and launched a new version of TagTeam, the open-source, social tagging platform developed to serve as a platform for the OATP. It enlarged the Open Access Directory (OAD), a wiki-based encyclopedia of OA, and expanded the Societies and Open Access Research (SOAR) project, a catalog of open-access journals from learned-society publishers. HOAP also updated its widely-endorsed guide to good practices for university OA policies and published the first print edition of the guide. It deepened its collaboration with Harvard's Office for Scholarly Communication (OSC) and helped the OSC secure OA to the research output of Harvard faculty, fellows, and graduate students.
[http://cyber.law.harvard.edu/research/hoap]

Herdict. Herdict, led by Jonathan Zittrain and Berkman Fellow Ryan Budish, is a platform for collecting and disseminating crowdsourced, real-time information about Internet filtering, denial of service attacks, and other web blockages. Over the past year Herdict received 70,619 inaccessible reports and 230,235 accessible reports. Of those, the majority came from China (59,793 / 202,303), and the majority of those were due to Herdict's partnership with Greatfire.org. Outside of China, Herdict received 2,000 or more inaccessible reports from each of the United Kingdom, United States, Venezuela, and Iran. The reports from Iran were due to the project's partnership with ASL 19, the Iranian circumvention and research team. Working with ASL 19, Herdict helped measure the censorship in Iran in the period before and after Iran's presidential elections. When Venezuela started censoring sites relating to their economy, Herdict received over 4,000 total reports from that country between February and April. That data led to Herdict being used in both the Wall Street Journal (print and online) and TechPresident.
[http://herdict.org]

Information Quality. The Information Quality Research Initiative (IQRI) builds upon numerous Center publications and aims to develop a theory of information quality that reflects fundamental shifts in the information ecosystem in the age of digital media. Led by Urs Gasser, this research examines the history, contexts, perspectives, intervention tools, coping mechanisms, challenges, and implications of this fundamental shift, paying special attention to the complex interplay of law, norms, technology, and markets. This year, Project Coordinator Alicia Solow-Niederman led an initiative to compile a set of academic works and popular media sources covering information and data quality issues, which may ultimately serve as case studies for the project as well as an informal literature review of scholarship and writings to date. A synthesizing book project will not only draw from previous research conducted under the IQRI broadly, but will also tie in aspects of the recently-launched Youth and Media Project to research health and information quality in the digital space.

Internet Monitor. Under the leadership of Urs Gasser and Jonathan Zittrain and in close collaboration with Rob Faris and Rebekah Heacock, Internet Monitor evaluates, describes, and summarizes the means, mechanisms, and extent of Internet content controls around the world. In December 2013 the project published its first annual report, a collection of essays from roughly two dozen experts around the world that highlight some of the most fascinating developments and debates in the digitally networked environment over the past year. Internet Monitor also launched its special report series which focuses on key events and new developments in Internet controls and online activity. This series put forth three publications: "Rationing the Digital: The Policy and Politics of Internet Use in Cuba Today," "Measuring Internet Activity: A (Selective) Review of Methods and Metrics," and "Blogs as an Alternative Public Sphere: The Role of Blogs, Mainstream Media, and TV in Russia's Media Ecology." The project team also worked closely with developer Ryan Westphal over the past year to build the Internet Monitor platform, which makes the data that Internet Monitor has aggregated and analyzed on Internet access, controls, and activity available to scholars, activists, and policymakers. The platform includes the interactive "Internet Monitor Access Index" which offers a starting point for further analysis of Internet access conditions in 92 countries. In February 2014, the Internet Monitor team presented an alpha version of the platform to Internet freedom researchers and practitioners at a meeting hosted by the Center of researchers, technologists, and human rights advocates working to promote greater openness on the Internet around the world.
[http://thenetmonitor.org]

Internet Robustness. The Internet Robustness Project, led by Jonathan Zittrain, Rob Faris, Sebastian Diaz, and Geneve Bergeron, completed the second year of its three-year mission to develop, test, and pilot a system to allow websites to seamlessly mirror one another's content as a form of distributed mutual aid. The system, named Amber for its ability to fortuitously preserve and perpetuate content, serves as a proof-of-concept for the "Mirror-As-You-Link" protocol initially suggested by Jonathan. 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 otherwise would be inaccessible. In the past year, the team brought on a technical project manager and designed technical specifications for the protocol researched in project year one. The team also began to

code and test the system for its compatibility with content management platforms Drupal and WordPress and web servers nginx and Apache. The Internet Robustness project is looking forward to the completion of coding and testing of the remaining Amber components and to conducting a private beta release in partnership with a major Persian-language blogging platform.
[http://cyber.law.harvard.edu/research/internetrobustness]

Library Lab. The Berkman Center has been a key partner in Library Lab, a collaboration spearheaded by the Harvard Library Office for Scholarly Communication in partnership with Harvard University IT Library Technology Services. The program aims to produce useful tools to improve libraries for librarians, instructors, researchers, and the broader scholarly community. Under the guidance of Faculty Director Stuart Shieber, the Berkman Center guided and created software for Library Lab projects for the third year this year. The Berkman Center Geeks provided extensive development work for a number of Library Lab projects, including Author Names/Online Author Questionnaire, Class Request Tool, Collection Shift Tool, FACADE2/Curators' Workbench (a joint project with MIT), HOLLIS Geosearch, Inscriptio, Link-o-matic, Spectacle, TagTeam, Transcription Tool, Library License, and Zone 1. Berkman Digital Media Producer Dan Jones also created 10 new videos about Library Lab projects, contributing to a corpus of over 30 Library Lab videos produced by the Center over the past three years.

Media Cloud. Media Cloud, a joint project spearheaded by Yochai Benkler at the Berkman Center and Ethan Zuckerman at the MIT Center for Civic Media, is an open source, open data platform that allows researchers to examine what media sources cover which stories, what language different media outlets use in conjunction with different stories, and how stories spread from one media outlet to another. During the 2013-2014 year the Media Cloud team, which includes fellows, staff, and researchers from both the Berkman Center and the Center for Civic Media, further developed its tools and technological platforms, research efforts, and team.

- *Tools and Technology.* The Media Cloud team continued to build a suite of tools around the corpus of media data collected in recent years, including: the continued work and use of the Controversy Mapping (CM) system, designed to track the evolution of online debates by capturing and mapping the links among online content from a wide variety of digital media sites; the launch of the MediaMeter Dashboard, a media-tracking platform to empower users and news providers to see what news they are receiving and missing in their daily consumption and production of media; the Media Meter Mentions tool, which uses the Dashboard query tool to generate more detailed lists of matching stories; and the core search tool, which allows researchers to execute queries directly against a Solr server and return matching stories and word counts. The team made key improvements to Media Cloud's core infrastructure, deployed a public API, and conducted experimental work on sentiment analysis, topic modeling, frame detection, and social media metrics. The Media Cloud team, along with outside collaborators at Washington University and MIT Computer Science and Artificial Intelligence Library, explored methods for large-scale topical analysis of the Media Cloud corpus. This work will appear at the "Data Science for News Publishing" workshop at the "Conference on Knowledge Discovery and Data Mining" hosted by ACM SIGKDD in August 2014.

- *Research Efforts.* In the past year, the project team used Controversy Mapper to analyze media controversies around the death of Trayvon Martin, debates around the 2012 California ballot propositions, conversations related to surveillance and the National Security Agency/Snowden leaks, examine political partisanship online, investigate issues of sexual and reproductive health and rights, and research major events in Arabic media. The team is also preparing to submit a paper on mapping the debate around the Stop Online Piracy Act and the PROTECT IP Act for publication to a major political science journal. Media Cloud also recently published, in conjunction with Internet Monitor, a paper analyzing of the role of blogs in the Russian public sphere.

- *Team.* The Berkman Center and Center for Civic Media hired and welcomed two Media Cloud projects fellows to the team. Whitney Erin Boesel is currently working on a research study with the Ford Foundation looking at framing in the Sexual and Reproductive Health and Rights space, including issues related to abortion access, contraception access, access to sexual/reproductive health care, "women's issues," and work with teen parents. Sands Fish is currently beginning work on interactive data visualizations and data management functionality for use by the public and researchers, as well as applying topic modeling and visualization to Media Cloud data. Many other fellows in the Center's community also worked closely with the Media Cloud team, including Berkman Fellows Bruce Etling, Nathan Matias, Dalia Othman, and Rebecca Weiss.

[http://mediacloud.org]

Mesh Networking. Over the past year, the Mesh Networking Project has pursued a novel approach to creating an auxiliary communication network using mobile phones that is resistant to disruption. This approach is intended to complement existing efforts to resist network disruptions by implementing a simple, multi-purpose capability in all mobile phones for communication during emergencies. This capability will make it substantially easier—indeed, newly possible—for ordinary people to send private, secure messages to one another during times of distress. Beginning as a theoretical solution to network congestion seen after the Boston Marathon bombing, Mesh Networking builds upon an approach to mobile ad hoc and mesh networking developed by former Federal Communications Commission Chairman Julius Genachowski and Jonathan Zittrain. The project's practical manifestation took shape at a stakeholder workshop hosted by Genachowski and Zittrain in January 2014. The networking capability this project is pursuing will create ad hoc, peer-to-peer multi-hop networks formed by mobile devices using wireless technologies, such as Wi-Fi and LTE Direct. Instead of taking the typical approach of designing a packet-based mesh capability based on a packet-based protocol—a solution that researchers have often found performs poorly in mesh networks—the Center is pursuing a simple, message-based protocol. The protocol proposed by the Mesh Networking Project will perform well in unstable networking environments, providing a dynamic solution to the serious problems that have occurred repeatedly during natural disasters and terrorist attacks.

metaLAB (at) Harvard. Since 2011, metaLAB has been exploring and expanding the frontiers of networked culture in the arts and humanities. Led by Berkman Faculty Director Jeffrey Schnapp with Berkman Fellow Matthew Battles serving as associate director, metaLAB

expanded its roles and projects over the course of the 2013-2014 academic year both at Harvard and across broader communities in the arts, media, and technology. In technology, metaLAB began development of Curarium, a curatorial platform for bringing diverse collections into conversation with one another. Curarium was used to animate the Homeless Paintings Collection, a newly digitized archive of photographs of missing artworks curated by Harvard's Biblioteca Berenson at the Villa I Tatti in Florence. Now in a soft beta launch, Curarium is working with several collections from the Harvard Art Museums. Work on Curarium was supported by Harvard de Bosis fund for Italian studies, with additional support from the Kress Foundation.

Other metaLAB initiatives explored new avenues in digitally enabled pedagogy: in particular, the Humanities Studio courses, offered under the aegis of the General Education Program of Harvard College, presented students with opportunities to explore media-driven digital humanities methods to questions in art history, cultural history, and design criticism. Students in the first two courses, "Homeless Paintings" and "Cold Storage," produced a variety of rigorous, challenging projects in digital media. At the Graduate School of Design, metaLAB principals Yanni Loukissas and Jessica Yurkofsky fronted an initiative to experiment with digitally enabled classroom space for studio teaching. And with funding from the Getty Institute, metaLAB developed and hosted a two-week summer institute in digital art history, introducing curators, scholars, and technologists from a group of globally renowned institutions to methods in digital curation, design thinking, and media-driven scholarship. metaLAB also hosted a team as part of DPSI, a collaboration that produced and successfully presented a proposal for an interactive media gallery to be developed for a new wing of the Harvard Art Museum.

Beyond Harvard, metaLAB principals are advising the team developing new interactive media installations for the redesign of the Boston Public Library's Johnson Building. Over the past year, members of metaLAB have published articles with the scholarly and popular press, and have presented at a number of scholarly conferences in North America and abroad. July 2014 will see the release of *The Library Beyond the Book* by Jeffrey Schnapp and Matthew Battles, the first of three titles released this year by Harvard University Press in the "metaLABprojects" series of books on topics in the digital humanities.
[http://metalab.harvard.edu/]

Mobilization for Change in the Middle East and North Africa. This project seeks to better understand the role of the networked public sphere as an alternative platform for information sharing and mediating collective action related to political and social life in the Arab world. This research effort is being carried out in close collaboration with a team of researchers at the Access to Knowledge for Development Center (A2K4D) at the American University in Cairo, led by Nagla Rizk, along with Fares Mabrouk and Jazem Halioui in Tunisia. Yochai Benkler, Rob Faris, Dalia Othman, and Bruce Etling, together with Berkman Research Affiliate Helmi Noman, contribute to the research effort from the Center. Over the past year, the researchers have completed a remapping of the Arab language blogosphere and are analyzing the structure of Twitter conversations related to Egypt and Tunisia. This quantitative work is complemented by a series of interviews and focus groups with key digital media actors in the region.

Network of Interdisciplinary Internet & Society Centers. Since the Network of Interdisciplinary Internet & Society Research Centers (NoC) launched in December 2012 at Harvard, the collaborative initiative has focused on events as a means to build robust capacity while encouraging cross-national and cross-disciplinary conversation and engagement. Using the 2012-2013 events hosted by Harvard, Bilgi University, and Fundação Getúlio Vargas as a successful model for in-person touchpoints—combining a region-specific thematic lead by the host country with an attention to mapping the international sphere of Internet and society research—the NoC hosted a symposium on "Chances and Risks of Social Participation" at the Humboldt Institute for Internet & Society in Berlin in October 2013. Other events in Rio de Janeiro and Istanbul stemmed from the Internet Governance Project effort and drew on this framework. In 2013-2014, the NoC grew from a series of affiliations to a group dedicated to hard research outputs and concrete contributions, stimulated by the rich engagement facilitated by the formal cementing of these ties and the identification of rich synergies. Summer and Fall 2014 will see further iterations of this sort, notably one of which will focus on the transfer of the Steering Committee's charge from Wolfgang Schulz of the Humboldt Institute for Internet & Society in Germany to Juan Carlos de Martin of the NEXA Center for Internet & Society in Italy.

This year, the Network has spearheaded two major research projects: Online Intermediaries and Internet Governance. Online Intermediaries is a policy-oriented pilot study on areas of convergence and disagreement regarding the liability and responsibility of online intermediaries. NoC participants have been invited to (A) contribute to a shared repository of relevant research, including methodologies and approaches, data, and expertise on diverse attitudes related to intermediary liability; (B) engage in an initial analysis of recent policy debates and proposals related to online intermediaries around the globe; and (C) collaborate on a shared methodology for assessing the impact of such developments on the open Internet. This pilot process begins with an analysis of various countries' intermediary liability landscape, providing the NoC with an opportunity to develop a sense of key criteria, comparative opportunities, and other analytical approaches aimed at informing and improving Internet policy-making across countries and regions. Following the delivery of individual papers in July 2014 on India, Brazil, and Vietnam, the group will leverage its collective expertise to develop a heat map of areas of convergence and disagreement regarding relevant policy debates and proposals in selected countries across Asia, Europe, and the Americas. Building upon these resources, we seek to produce a high-impact white paper that can be relevant to policy makers and other stakeholders. Throughout the process, learning calls have supported the sharing of research and methods. In August 2014, Online Intermediary case study authors came together in person for a workshop hosted by the Radcliffe Institute for Advanced Study at Harvard to begin to draw syntheses from their various reports.
[http://cyber.law.harvard.edu/research/network_of_centers]

Perma. Perma is an open source, user-directed solution to link rot. It enables authors, journals, 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 or cloud server capacity to the preservation effort. Perma is focusing initially on law journals and courts, where the problem is acute as documented by Jonathan Zittrain, 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 Jonathan Zittrain and a team at the HLS Library that includes Kim Dulin, Adam Ziegler, Matt Phillips and Berkman Fellow Jack Cushman. The Center's Cyberlaw Clinic has also provided significant legal support. Perma currently counts over 55 library partners, 100 journals, 2,300 individual account-holders, and multiple courts as users. Together, they have created over 24,000 Perma Links. [http://perma.cc]

Privacy Tools for Sharing Research Data. Privacy Tools for Sharing Research Data is a multidisciplinary collaboration between four research centers at Harvard: the Center for Research on Computation and Society, the Institute for Quantitative Social Science, the Data Privacy Lab, and the Berkman Center. Together, the partners aim to develop methods, tools, and policies to further the tremendous value that can come from collecting, analyzing, and sharing research data while more fully protecting individual privacy. With support from the National Science Foundation, the Center's team, led by Urs Gasser, Senior Project Manager David O'Brien, Project Fellow Alexandra Wood, and Chris Bavitz and Kit Walsh from the Cyberlaw Clinic, is overseeing the legal and policy aspects of the work. Over the 2013-2014 year, the Center has contributed foundational research, policy analysis, and technical and community development to the project including:

- *Research and Publications*. The Center's team commenced a literature review to analyze legal scholarship, federal and state statutes and regulations, and common contractual terms relevant to research data privacy. This research has served as the foundation for a series of reports, including forthcoming publications evaluating contractual approaches to research data sharing and comparing various statutory and regulatory definitions of privacy. The team has also begun work to package these privacy law resources as a publicly-available toolkit, wiki, or searchable annotated database.

- *Policy Recommendations and Outreach*. The Privacy Tools for Sharing Research Data project contributed to three sets of comments submitted to federal agencies and offices considering policies at the intersection of big data and privacy: the Occupational Safety and Health Administration, on a proposed rule that would publicly release workplace injury and illness reports; the Federal Trade Commission, on privacy issues related to mobile device tracking; and the White House Office of Science and Technology Policy, on issues raised by big data and privacy generally. These comments bring together insights from computer science, statistics, law, policy, and social science research to describe a modern framework for privacy analysis and privacy-protecting data releases.

- *Technical Development*. A substantial portion of the project's efforts has been devoted to developing new tools and instruments for data sharing. One of the tools, DataTags, is designed to generate and assign to datasets machine-readable tags that specify the legal and technical constraints, such as access and sharing restrictions, that apply to individual datasets based on their risk profiles and relevant privacy laws, regulations, contractual agreements, and institutional policies. Working closely with project partners, the team developed an initial architecture and tagging model for datasets containing medical, education, and government records, and will engage in usability testing for the prototype

in Summer 2014. Also in development is an automated license generator, which will create custom agreements for sharing individual datasets.

- *Community Development*. In September 2013, the project team hosted a workshop at HLS on "Integrating Approaches to Privacy across the Research Lifecycle." Over forty leading experts in computer science, statistics, social science, law, and policy convened to discuss the state of the art in data privacy research. Participants considered how emerging tools and approaches from their various disciplines should be integrated in the context of real-world use cases that involve the management of confidential research data. The Privacy Tools for Sharing Research Data team is leading the authorship of two papers examining topical issues that emerged during the workshop: one discussing the management of privacy in long-term longitudinal studies and another addressing the evolving definition of "public" information.

[http://cyber.law.harvard.edu/research/privacy_tools]

Student Privacy Initiative. Over the past year, the Student Privacy Initiative (SPI) has explored the opportunities and challenges that may arise as educational institutions consider adopting cloud computing technologies. With contributions from the Youth and Media Project and the Cyberlaw Clinic, SPI has engaged sustained a multi-disciplinary, multi-stakeholder conversation on student privacy in the age of cloud computing and connected learning. Led by Urs Gasser, with support from Alicia Solow-Niederman, Sandra Cortesi, Paulina Haduong, Leah Plunkett, and Chris Bavitz and Dalia Topelson of the Cyberlaw Clinic, SPI conducted research, organized a series of working meetings and ongoing conversations, and produced a series of outputs that assess federal and state laws, expectations, current practices in the field, and social norms in these contexts. The work of SPI is organized into three clusters:

- *Privacy Attitudes & Expectations.* This component of SPI's work emphasizes the importance of empirical data on actual student and teacher privacy practices and behaviors. The real-word data allows SPI to tailor recommendations for policies and best practices that reflect what could and should be. During the 2013-2014 year, the YaM team worked with SPI to analyze findings from a series of focus groups and surveys conducted with students from across the US.

- *School Practices & Policies.* To understand current district and school practices and policies, SPI has taken part in a series of informal, ongoing conversations as well as convened more formal meetings with organizations and individuals from academia, government, business, educational settings, and the non-profit sector. The Student Privacy Initiative team has also researched and created a taxonomy of many of the ed tech cloud-based services that are currently in use in K-12 contexts, the "K-12 Ed Tech Cloud Service Inventory."

- *Law & Policy.* Understanding the complex and quickly evolving set of laws and regulations (e.g., COPPA, FERPA, PPRA, etc.) that address student privacy and ed tech has been essential to SPI's work. In 2013-2014, SPI and the Cyberlaw Clinic has published the following: "Privacy and Children's Data: An Overview of the Children's Online Privacy Protection Act and the Family Educational Rights and Privacy Act,"

"Protecting Privacy in Learning Toolkit," and "Framing the Law & Policy Picture: A Snapshot of K-12 Cloud-Based Ed Tech in Early 2014."

For the Student Privacy Initiative's next phase, the team intends to look forward and focus even more on the innovative opportunities of educational technology, with a particular eye to evolving educational practices and opportunities (e.g., learning analytics, technology and connected learning, etc.) that may also present unique privacy challenges.
[http://cyber.law.harvard.edu/research/studentprivacy]

Youth and Media. Led by Principal Investigator Urs Gasser and Youth and Media Director Sandra Cortesi, in cooperation with Faculty Director John Palfrey and colleagues, Youth and Media (YaM) encompasses an array of research, advocacy, and development initiatives around youth and digital technology. By understanding young people's interactions with digital media, this highly collaborative project aims to gain detailed insights into youth practices and digital fluencies, harness the associated opportunities, address challenges, and ultimately shape the evolving regulatory and educational framework in a way that advances the public interest.
[http://cyber.law.harvard.edu/research/youthandmedia]

The YaM project is split into a number of research projects and initiatives:

Youth and News Online. In this academic year, YaM served as the research, learning, and development partner to the Chicago-based core group of McCormick Foundation Journalism Program "Why New Matters" grantees and the McCormick Journalism Program team. Our work spanned two core research domains: (1) exploratory research and (2) translational research.

- *Exploratory research.* With the goal of informing and supporting McCormick's investment in news literacy education in underserved communities, the YaM team conducted focus group interviews with 203 participants across the greater Boston area; Chicago; Greensboro, North Carolina; Los Angeles; and Santa Barbara, California. Some of the highlights from the focus groups include:

  - With the Internet and social media, youth discover and consume the news in emerging, non-traditional ways: "I did that when the embassy in Egypt got taken over. When the riot was outside, I went to the front page of YouTube, just to see if I could get a feel for what was going on." (16-year-old male, Greensboro)

  - Youth definitions of the news are diverse, flexible, and include many types of content outside of traditional news media: "Anything that people post counts as news. Cause everything shows up in your news feed." (14-year-old female, Boston)

  - The neighborhood and community context in which youth live affects the types of news and information they consider valuable: "News means to me social networking. Things that mean something to me. Things in my life. For example if someone gets shot in my neighborhood. Like that. People would put it on Facebook." (16-year-old male, Chicago)

Drawing upon the findings from these focus group interviews, Cortesi and Gasser wrote a peer reviewed paper, "Youth online and news: A phenomenological view on diversity," forthcoming in *International Journal of Communication*. The paper takes a closer look at the changing definitions of news, changes in the newsreading ecosystem (such as new forms of participation, changing access modalities, and new types of gatekeepers), developments in social media practices, and emerging genres (such as memes). Against this backdrop the paper argues that a phenomenological approach to diversity, which takes into account a broad range of developments in the digitally networked environment, including behavioral trends related to information seeking, sharing, and creation, might be a helpful starting point when discussing both the problem and solution space related to the different facets of the diversity concept.

- *Translational research*. Through a series of research briefs, the YaM team conducted and translated for accessibility cutting-edge research to help incorporate research findings and insights into local practices. The research briefs are based on secondary research by the YaM team (e.g. literature reviews) as well as original research (qualitative and quantitative data gathered through focus group interviews in the Chicago area/with students from Chicago). Our four [research and practice briefs](#) take diverse yet interconnected approaches to news literacy, and are now available for download through SSRN:

  - "The Challenges of Defining 'News Literacy"

  - "Youth News Perceptions and Behaviors Online: How Youth Access and Share Information in a Chicago Community Affected by Gang Violence"

  - "Mapping Approaches to News Literacy Curriculum Development: A Navigation Aid"

  - "Evaluation in Context: Reflections on How to Measure Success of Your Program"

Digitally Connected. Digitally Connected is a collaborative initiative between UNICEF's Voices of Youth Citizens and the Innocenti Research teams and the Berkman Center building upon a [multi-year partnership for](#) analyzing digital and social media growth and trends among children and youth globally. Digitally Connected has at its core a network consisting of 150 academics, practitioners, young people, activists, philanthropists, government officials, and representatives of technology companies from around the world who together are addressing the challenges and opportunities children and youth encounter in the digital environment. On April 28-30, 2014, Berkman and UNICEF co-hosted, in collaboration with PEW Internet, EU Kids Online, the Internet Society (ISOC), Family Online Safety Institute (FOSI), and YouthPolicy.org, a first of its kind international symposium on children, youth, and digital media at Harvard University, to map and explore the global state of relevant research and practice, share and discuss insights and ideas from the developing and industrialized world, and encourage collaboration between participants across regions and continents. With a particular focus on voices and issues from the Global South, the symposium addressed topics such as inequitable access, risks to safety and privacy, skills and digital literacy, and spaces for participation, and civic engagement and

innovation.
[http://www.digitallyconnected.org/]

Hate Speech Online. This initiative leverages the Berkman Center's national and global networks and takes a collaborative, interdisciplinary, tripartite approach to the issue of youth-oriented online hate speech. The initiative approaches hate speech broadly, encompassing but not limited to attacks on gender, sexual orientation, race, ethnicity, religion, and histories of violence. The initiative consists of three interconnected components:

- *Research*. The first component of the initiative is in-depth research that addresses myriad questions about youth-oriented online hate speech, including: What is hate speech? How does it function online? How does it differ from cyberbullying or trolling? How does it impact youth and their communities? How can it be effectively mitigated and prevented?

- *Curriculum development.* Building off that all-important final question, the second component is a collaborative effort to develop curricula and learning modules that will empower youth to react effectively to online hate while fostering more resilient and tolerant communities.

- *Stakeholder engagement.* The third component involves the creation of a thematic advocacy network of experts, educators, practitioners, and ambassadors that will work together to counter and prevent hate speech.

Youth and Online Privacy. Youth and Online Privacy project aims to better understand youth's online information sharing practices and their evolving notions of and attitudes towards online privacy and reputation. In the past academic year, the YaM team gained insight into youth's conception of privacy, how this conception may differ from an adult perspective, and how it is reflected in the kinds of activities youth engage in online. In collaboration with Pew Internet Research, represented by Lee Rainie, Mary Madden, and Amanda Lenhart, the YaM team studies these questions through mixed methods such as literature reviews, focus groups, and surveys. Additionally, the YaM team is engaging in the Student Privacy Initiative. For further information see: http://cyber.law.harvard.edu/research/studentprivacy.
[http://youthandmedia.org/youth-and-online-privacy/]

Youth Behaviors Online: How Youth Access and Share Information in Communities Affected by Gang Violence. The latest YaM project aims to understand how violence might impact youth online behavior and practices. Preliminary data suggests that the community context appears to influence what information is relevant to youth, how information is shared, and how youth relate that information to maintaining safety. Building off of these preliminary findings, the YaM team intends to initiate a deep dive research study to better understand how at-risk youth in Chicago, Boston, and Los Angeles relate to peers, present their identities, and engage with information– particularly news related to their neighborhoods and/or communities–online.

3. Selected Independent Scholarship

The Berkman Center's institutional advancements, research, and events would be far from complete without including updates from our community. We invited fellows, faculty, faculty associates, and affiliates to contribute short updates to this report about their independent scholarship and accomplishments over the past academic year. While not all community members are represented here, the updates included offer a sense of some of the notable milestones members of the 2013-2014 community chose to share.

Allen Bargfrede spent a predominant portion of his year continuing the work between the Center and Berklee College of Music on the Rethink Music project. Rethink Music hosted two workshops in France and Spain and a startup day in Berlin, continuing its search for new business models in the music industry. The most recent workshop, facilitated along with Berklee students, focused on how copyright impacts business model decisions in the content industry. He also worked on the second edition of his book Music Law in the Digital Age, to be released in early 2015. Due to a personal experience, he also focused efforts on understanding how patients afflicted with controversial "chronic Lyme" disease use the Internet as a resource to locate doctors and compare healing methodologies, as well as to mobilize in efforts to publicize the need for research for better treatment.

Susan Benesch has been researching methods for diminishing hateful and violence-promoting speech online without resorting to censorship. She found evidence that "counterspeech" on Twitter led some users to recant or apologize for their hateful and violence-promoting speech, and began a new two-year project to study this effect at scale. She also expanded her Dangerous Speech Project, collaborating with online activists in Kenya and Myanmar on efforts to prevent intergroup violence. In June 2014, she convened researchers from 10 countries in Yangon to form a new community of practice on non-censorship, anti-hatred methods for preventing violence. Leading research for the Anti-Cyberhate Working Group, she identified new reasons why social media platforms function as safe havens or silos for extremist views--such as the lack of means for expressing dissent--and proposed corrective steps.

Sandra Cortesi continued to coordinate the Youth and Media Project's national and international policy, research, and educational initiatives. She works closely with talented young people and lead researchers in the field as they explore innovative ways to approach social challenges for youth in the digital world, including digital and social media behavior, the production and exchange of media online, and digital citizenship. Together with Urs Gasser and the Youth and Media team, she focuses on topics including inequitable access, information quality, risks to safety and privacy, skills and digital literacy, and spaces for participation, civic engagement, and innovation. (See Ongoing Projects for more information.)

Tim Davies, as part of the World Wide Web Foundation's Open Data Research Network Project, has been focused on research and research capacity building around the emerging impacts of open government data in developing countries. In October 2013, he authored the *Open Data Barometer*, a report that presents a global picture of the open data landscape across 77 countries. Building on this work he has been working with the Web Foundation in partnership with the GovLab at New York University to develop a framework of common assessment methods for

open data policy and practice. He also co-authored a paper with Silvana Fumega for the U4 Anti-Corruption Resource Centre titled "Mixed incentives: Adopting ICT innovations for transparency, accountability, and anti-corruption," and presented a paper on "The construction of open government data: decisions points and discriminatory potential" for a ICA pre-workshop on Data and Discrimination. Over the last year, he has spoken on open data and development at conferences in the UK, US, Canada, Germany, and South Africa, including a presentation at the Open Knowledge Festival in Berlin on findings from case studies conducted by the Open Data Research Network.

Primavera De Filippi has pursued her research on the concept of "governance-by-design" as it applies to online distributed architectures. In this, she focused on the legal challenges raised and faced by decentralized architectures, with particular attention paid to mesh networking and cryptoledger-based applications, such as Bitcoin and Ethereum. She published several articles in *Wired* Magazine and various academic journals, and she has been invited to present her research at international conferences, both in Europe and in the US. In the framework of the Berkman-UNICEF Symposium Digitally Connected, she worked in collaboration with the Youth and Media Lab to run a workshop aimed at teaching complex legal concepts to kids by means of a bottom-up and collaborative approach based on the artistic practice. During her fellowship at the Berkman Center, she had the opportunity to connect with a wide variety of people and to join specific communities that significantly contributed to the further development of her research. She has created strong links with researchers at the MIT, and she is currently working in close relationship with crypto-currency communities to explore the regulatory challenges emerging from the interplay that subsist between technologically enforced smart-contracts and the law. Finally, as part of a European project (P2Pvalue.eu) seeking to investigate the drivers for productivity in commons-based peer-production communities, she has been working on the notion of commons-based crypto-currencies, to identify specific value metrics and reward mechanisms that would allow for the generated value to flow back into the community.

John Deighton served as the L'Oreal Visiting Professor at Oxford University's Said Business School in Spring 2014, where he taught "First Year Marketing and Digital Marketing Strategy." John also co-authored a journal article, "Beyond Bedlam: How Consumers and Brands Alike Are Playing the Web," with fellow Center affiliate Leora Kornfeld. It will be published in *GfK Marketing Intelligence Review* in Fall 2014. He served as the lead author of a study which investigates the amount of incremental value data-driven marketing contributes to the U.S. economy. This study, titled "The Value of Data: Consequences for Insight, Innovation, and Efficiency in the U.S. Economy," estimates the proportion of the value that is accounted for by the flow or transfer of data among firms. He also published three Harvard Business School cases: "The Acquisition by Twitter" (HBS Case #513-091); "Amazon, Apple, Facebook & Google" (HBS Case #513-060); and "Olympic Rent-A-Car US: Customer Loyalty Battles" (HBS Case #913-568).

Jacques de Werra returned to his full time position at the Law School of the University of Geneva after a sabbatical at the Berkman Center last the academic year. At the University of Geneva he taught a seminar on Internet law in the fall term and a class on international intellectual property law, covering many Internet related IP issues, in the spring term. He also launched an Internet law summer school at the University of Geneva which took place in the last

two weeks of June 2014 and in which many experts gave lectures, including experts from Geneva-based international organizations, and from the Berkman Center, including Faculty Director Terry Fisher and Clinical Professor Chris Bavitz. He gave a lecture on the challenges of copyright law in the network age for the celebration of the 125th anniversary of the Swiss Institute of Intellectual Property in November 2013; the paper was subsequently published in *Swiss IP Law Review*. He continues his research on intellectual property transactions building and expanding upon the book that he edited on intellectual property licensing, *Research Handbook on Intellectual Property Licensing*.

Sands Fish joined the Center in April as a project fellow with the Media Cloud team. His focus is on data analysis and visualization, in the service of finding insight in the project's large corpus of news media, and creating tools to empower the public and researchers. His research efforts have initially focused on analyzing partisan news media and the link economy surrounding the online political environment. Building tools that automate this analysis, he has begun designing network visualizations that elucidate the structure and dynamics of these networks. The first applications of these technologies have been focused on controversies such as Net Neutrality, the NSA/Snowden debates, and the Santa Barbara shootings. Other analysis and visualization efforts have focused on topic modeling, data mining for threads and frames in the news that span across a large amount of stories and media outlets. The initial marriage of these techniques and the Media Cloud data are described in a paper he co-authored. This paper, which will be presented at the Knowledge Discovery and Data Mining (KDD) conference in August 2014 at a workshop focused on "Data Science for News Publishing," describes early results of this research. Ultimately, he aims to allow these themes and media attention to be understood by augmenting human insight with large-scale algorithmic analysis. He also presented work with MIT colleague Ali Hashmi at the MIT-Knight Civic Media conference aimed at bringing these tools to the public. In addition to work bridging the Center, the Center for Civic Media, and the data visualization community, his other efforts include news gender analysis with Center Fellow Nathan Matias and development on URLopedia, a tool to provide metadata about locations on the Web.

Dan Gillmor, as a Berkman Faculty Associate and former Fellow, taught digital media literacy at Arizona State University's Walter Cronkite School of Journalism and Mass Communication, where he also worked with students and faculty on bringing the startup culture to journalism education. He continued to speak at conferences around the world and maintained his weekly column in the *Guardian*'s US edition; he also writes on occasion for other publications including *Slate*, *Talking Points Memo* and *Medium*. He continued research on his next book, tentatively entitled *Permission Taken*, a project designed to help people retake control of technology and communications from the centralized powers—governmental and corporate—that have wrested it away.

Alison Head continued her research as the director of Project Information Literacy (PIL), an ongoing national study to investigate how college students conduct research and find information for coursework and their everyday lives. Last fall, PIL released its latest report, *Learning the Ropes: How Freshmen Conduct Course Research Once They Enter College*, which draws on both interviews with 35 first-term freshmen from six US colleges and universities and a comparison between library resources at 30 high school and six college and university libraries.

In partnership with the University of Washington's Information School (iSchool), PIL began a two-year federally-funded study about lifelong learning. This study, which began in Fall 2013, asks how recent college graduates find information for staying adaptive and competitive in the workplace, engaging in civic life, and enriching their personal lives. With the Shorenstein Center's John Wihbey, she also co-authored a commentary piece that advocated teaching knowledge-in-action research skills when preparing undergraduates for the workplace. The article appeared in the *Chronicle of Higher Education* in Spring 2014. Acting also as a research scientist at the iSchool, she has presented across the US and in the UK this year including keynote presentations at three national and international conferences.

Peter B. Hirtle has worked with the Scholarly Communications Office in the Harvard University Library to increase access to digitized Harvard collections by changing policies on distribution and use. He also has drafted material for a presentation at the WIPO SCCR meetings in Geneva. He has given several talks on legal issues in archives in the US, the UK, and Korea, and has written a preface to a new book on the topic. He also successfully completed the CopyrightX course, and continues to work on a half-time basis for the Cornell University Library.

Malavika Jayaram spent the year focusing on privacy, openness, data ethics, and evidence-based policy. As part of an ongoing effort to further dialogue and collaborative problem-solving between the "open data evangelist" and "privacy fascist" communities, she co-organized two events: a data and development workshop at the Center with the Dutch NGO Hivos and the "Responsible Data Forum" in New York with the technology group Engine Room. Both events brought together practitioners and theorists from academia, civil society, government, industry and user communities to highlight problems and potential solutions relating to the use of data for development. She was also a speaker at several international events including the Stockholm Internet Forum; the Surveillance Studies Network's annual conference in Barcelona; RightsCon in San Francisco; the Privacy Commissioner's conference in Warsaw, the Computers, Privacy, and Data Protection Conference in Brussels; Cyber Dialogue at the Citizen Lab in Toronto; the University of Oxford; the Institute for Information Law in Amsterdam; the Royal Society in London; the Dangerous Speech project in Yangon, Myanmar; and the Open Knowledge Foundation, also in London. She also lectured at Yale, Brown, MIT, Harvard, the University of Pennsylvania, and the Center for Internet and Society, India. She was also published in several journals and online fora. She continues to work on her PhD on privacy and identity in India, highlighting the civil liberties issues and discriminatory potential of the world's largest biometric ID project.

Amy Johnson presented invited conference papers on credibility and the sociotechnical affordances of Twitter, and how we imagine material agency and the Internet of things. At Berkman she led two Fellows Hours, one with Tim Maly on online hoaxes and parodies and one with Sara Watson and Hasit Shah on progress narratives and moral panics. With Sara, she is developing a related style guide for journalists. Elsewhere, she presented papers and ran workshops on social media and public scholarship, open research and partial modes of seeing, and haptic interfaces and knowledge production. She co-founded MIT's Digital STS working group, served as the Berkman Center and MIT organizer for the interinstitutional Cyberscholars Working Group, and led the relaunch of the MIT History, Anthropology, Science, Technology,

and Society program's blog as a platform for public scholarship. In Spring 2014 she passed general exams and presented her dissertation proposal. Her dissertation, which examines online parody as a form of social critique in English, Arabic, and Japanese, has been awarded grants by the Wenner-Gren Foundation and the Japan Foundation.

Rey Junco continued his collaboration with the YaM team this year, providing input on surveys, data collection, and research methods. He also focused on writing his book *Engaging Students through Social Media: Evidence-Based Practices for Use in Student Affairs*, which was published in August 2014 by Wiley/Jossey-Bass. This book was heavily influenced through work conducted in collaboration with Urs Gasser and Sandra Cortesi as part of the YaM Lab and received feedback and support from the Berkman Book Club. At the Berkman Center, he led an informal research methods and statistics course and a Fellows' Hour on using digital textbook usage data to build predictive models of student academic outcomes. Thanks to the support of Bruce Schneier, he published op-eds this past year on *CNN.com* and in *The Atlantic*. He was also a regular guest on the National Public Radio show *Tell Me More* where he provided commentary on the societal impacts of social media use. He, along with a colleague, was also awarded a $250,000 grant by the Bill & Melinda Gates Foundation to study the educational impact of 19 apps developed with funding from Gates. He was actively involved in Center events and workshops, participating in the Digital Connected symposium as well as the Gruter Institute and Berkman Center's Law Lab Workshop on Innovation. He also co-authored the report *Who Gets a Press Pass* with the DMLP. (See Ongoing Projects for more information.)

Beth Kolko, as a Berkman Faculty Associate and Professor of Human Centered Design and Engineering at the University of Washington, continued her work on human centered product design with theoretical research as well as practical implementation with her leadership of a startup called Shift Labs. That work looks at both digital products (for example, online services) and physical ones. She also pursued academic work on innovation and technology skill acquisition, working with librarians and non-expert innovation communities in the Seattle area, in Denmark, and in the business community. She has a paper on technical skill acquisition gained via computer games based on a study in Brazil coming out this quarter, "The Value of Non-Instrumental Computer Use: A Study of Skills Acquisition and Performance in Brazil."

Leora Kornfeld continued to investigate the changes and opportunities brought to the creative industries by digital disintermediation. She served as Senior Researcher of "The Value of Data: Consequences for Insight, Innovation, and Efficiency in the U.S. Economy," which investigated the amount of incremental value data-driven marketing contributes to the U.S. economy. The study, which also estimates the proportion of economic value that is accounted for by the flow or transfer of data among firms, was published in Fall 2013 by the Data-Driven Marketing Institute. Her forthcoming journal article, "Beyond Bedlam: How Consumers and Brands Alike Are Playing the Web," co-authored with Center Director John Deighton, will appear in the *GfK Marketing Intelligence Review* in November 2014. She also conducted a forthcoming interview for *Radio Berkman* with Berkman Fellow Kate Darling on her PhD dissertation: "What Drives IP Without IP? A Study of the Online Adult Entertainment Industry." She co-authored three HBS cases with Professor Thales Texeira: "Managing Online Reviews on TripAdvisor" (HBS Case #514-071); "YouTube for Brands" (HBS Case #514-048); and "Groupon for Local Businesses"

(HBS Case #514-047). She began a blog, www.demassed.blogspot.com, which focuses on the demassification of audiences and media production.

Tim Maly joined the Center's community mid-year as a fellow with the metaLAB. He spent Spring 2014 researching and authoring *The Inspection House* with collaborator Emily Horne. *The Inspection House,* a short re-introduction to the architecture of the Panopticon and a field guide contemporary panoptic spaces, is slated for publication in Fall 2014. At metaLAB, he designed and ran "Enter Through the Gift Shop," an intensive weekend workshop that guided participants through a methodology for doing field research and applying collaborative design thinking to a problem. This workshop was part of a larger two week Institute supported by the Getty Foundation. He was one of the facilitators and curriculum designers for this Institute, titled "Beautiful Data," which focused on new ways of exploring museums in the age of the network. He also collaborated with Jessica Yurkovsky on design strategies for crossing the digital-analog divide and with Matthew Battles on new approaches to curation. With Sara Watson, he founded the "Angry Tech Salon," a weekly reading group that matches scholarship with recent issues. He also led two Fellows' Hours at the Center: one on the ethics of prison-made jeans as an entry point to thinking about panopticons, and the other in collaboration with Amy Johnson on the design and analysis of hoaxes and pranks.

J. Nathan Matias, a PhD student at the MIT Center for Civic Media, focuses on computational social science about cooperation across diversity online, work that was featured at NewsFoo, SXSW, CHI, and Theorizing the Web. At the Berkman Center he co-facilitated the Cooperation Group, which convened weekly conversations about the theory, policy, technology, and quantitative research of cooperation. The People's Bot, an experiment to foster inclusion with robotic telepresence for the common good, offered scholarships, journalism fellowships, and an auction for access to three major academic conferences and videogame dances. Together with Kate Darling, Kit Walsh, Andy Sellars, and Wendy Seltzer, he also coordinated "Coders Know Your Rights," a class at MIT on legal risks for informal innovation, authoring proposals for MIT for the creation of an Innovation Law Service. He continued to contribute to the Center's MediaCloud platform in 2014, adding gender analysis to the system's capabilities.

Grant McCracken did several rounds of research on media consumption for Netflix and presented other research results to the White House.

Sarah Newman, a metaLAB fellow, contributed to the Digitally Connected Symposium co-hosted by the Berkman Center in April. Together with Matthew Battles and Luca Simeone, she initiated Media Art Knowledge Engaged (MAKE). MAKE is a series of workshops targeted to young participants and aimed at exploring themes such as copyright laws, privacy, danger and gender equality. She also contributed as a mentor to two DPSI initiatives: "Cataloging, Designing, Evaluating, and Developing Shared Practices Around Innovation Labs" and "Installation/Curatorial Space at the Harvard Art Museums."

Jon Penney has focused this past year in large part on his doctoral project that explores regulatory chilling effects online, that is, how laws may "chill" or deter or other impact online activities. This work has led to involvement in the Takedown Research Network, a team of researchers led by Jennifer Urban (Berkeley) and Joe Karaganis (Columbia), that is planning

large scale research on DMCA-style online "takedown" legal enforcement regimes through a variety of new research/experimental methods. He has also published several popular media and academic pieces, including a forthcoming publication in the *University of Pennsylvania Journal of International Law* based on his 2013 Berkman Luncheon Talk ("The Ghosts of Infowars Past") and his public policy commentary has appeared in *Policy Options Magazine* (published by the Institute for Research & Public Policy, Canada's oldest and most well known non-partisan think tank) and in newspapers like the *Toronto Star*, including pieces on privacy/democratic concerns with electoral voter databases; facial recognition tech privacy threats, and the regulatory challenges of Revenge Porn. He was also an active contributor to the broader online transparency/censorship/surveillance research communities, including as an active program committee member for the Free and Open Communications on the Internet (FOCI), an interdisciplinary workshop on censorship and surveillance at USENIX Security Symposium, his involvement— with Berkman fellow Ryan Budish and other colleagues — with an ongoing Transparency Project (to encourage corporate data privacy online) and as a member of the new International Relations and Digital Technology Project (IRDTP) Collective, a group of academics and practitioners (including Berkmaniacs Erhardt Graeff, Biella Coleman, and Molly Sauter) aiming to "challenge and critique traditional international relations theory within the context of new and emerging technologies." Later this month, he will be speaking on a panel about online corporate transparency at the Citizen Lab's Summer Institute, and joining other workshop participants to help build an online tool to automate transparency reporting.

Leah Plunkett has been a 2013-2014 affiliate with the Berkman Center's Student Privacy Initiative (SPI). She is also an Associate Professor of Legal Skills & Director of Academic Success at the University of New Hampshire School of Law, where she engages in meta-learning work—helping students understand how and why they learn best. She researches and writes in a variety of venues on how laws affect core matters of people's daily lives: education, familial relationships, and financial stability. With SPI, she has focused on the rapidly shifting legal and regulatory landscape of cloud-based educational technology products in primary and secondary school systems. Along with Urs Gasser and Alicia Solow-Niederman, she authored two SPI publications, one of which was featured at a Center Luncheon in June 2014. She also wrote a law review article, "Contraceptive Sabotage," that is forthcoming in Columbia Journal of Law & Gender. She presented "An Improviser's Guide to Law Teaching" at the inaugural LegalEd Igniting Law Teaching conference at American University's Washington College of Law. She has written opinion pieces for *The New Republic* Blog, *Wired*, *Salon*, and the *Huffington Post*, as well as debated these opinions on the *Huffington Post* online TV channel and *Tech News Today*. (For more on SPI, see Ongoing Projects.)

Justin Reich served as the first Richard L. Menschel HarvardX Research Fellow, helping lead HarvardX's inaugural research efforts. He authored and co-authored a series of HarvardX working papers detailing findings from the first 17 courses offered by HarvardX and MITx, including deep dives into "HeroesX," "JusticeX," and the first two courses from the Harvard School of Public Health: "Health in Numbers" and "Health and Global Environmental Change." His co-authored op-ed on these working papers, *The Tricky Task of Figuring Out What Makes a MOOC Successful,* appeared *The Atlantic*. He also shared his research at two events co-sponsored by the Center: "The First Year of HarvardX" at the Harvard Graduate School of Education and "MOOCs and the Science of Learning" as part of the Center's luncheon speaker

series. He contributed to the development of the Asolimar Convention, an effort to rethink for the digital age the principle of the guiding document for human subjects research. This year, he continued to serve on the Massachusetts Digital Leadership Advisory Council, write the EdTech Researcher blog for Ed Week, and teach in the Scheller Teacher Education Program at MIT.

Joseph Reagle is a Berkman Faculty Associate and Assistant Professor of Communication Studies at Northeastern University. This year, he launched the first course in Northeastern's new academic track about online communication. He also published two articles: one on contextualizing Wikipedia in a larger history of encyclopedia production, and a widely read article on the gender gap and sexism in the free cultural movement. He also drafted articles on geek sexism and geek feminism. Most importantly, he worked to draft his latest book *Reading the Comments: Likers, Haters, and Manipulators at the Bottom of the Web*, due out in 2015. Among various presentations, he also delivered a keynote at the Centre for Global Cooperation Research in Duisburg, Germany.

Molly Sauter has spent the last year getting settled into her doctoral program at McGill University in Montreal, where she is working with Gabriella Coleman on issues surrounding disruptive activism, hacker culture, and Internet policy. She has presented research at Case Western University, Yale Law School, ICA, Theorizing the Web, and SXSW, as well as attended several invitational conferences and workshops, including the MSR Social Computing Conference in New York and the Annenberg-Oxford International Media Policy Summer Institute at Oxford University. She has maintained her involvement with the Berkman community as an affiliate researcher, a position she also holds at the MIT Media Lab's Center for Civic Media. She is also a member of the International Relations and Digital Technology Project Collective and a Fellow with the Digital Ecologies Research Partnership. She is particularly delighted to have finished her first book, *The Coming Swarm*, a scholarly analysis of the political use of distributed denial of service actions, to be published by Bloomsbury in October 2014.

Bruce Schneier spent the year researching NSA surveillance, security and society, and the relationship between surveillance and power. This year, he wrote essays for *The Atlantic*, *CNN.com*, *Wired*, and elsewhere; and spoke on these topics at events around the world. He is in the middle of writing his latest book, *Data and Goliath — The Hidden Battles to Collect Your Data and Control Your World*, to be published by Norton in February 2015.

Luca Simeone, along with Matthew Battles and Sarah Newman, initiated a series of workshops this year as part of his metaLAB fellowship. A cross-disciplinary effort, the MAKE series was executed by a group of artists and researchers affiliated with Harvard, MIT, and a host of global partners. He participated in DPSI, serving as a mentor for both "Cataloging, Designing, Evaluating, and Developing Shared Practices Around Innovation Labs" and "Installation/Curatorial Space at the Harvard Art Museums." He also participated contributed to the Digitally Connected Symposium.

Bill Shribman, as an affiliate, was able to enrich many of his projects at WGBH (where he is the Senior Executive Producer responsible for digital content for children) with valuable input from the Berkman Center community. These projects included a digital graphic novel to teach high

school students forensic science, a new multiplatform environmental science project for second and third graders, and a new digital media literacy project. Reciprocally, he was able to cross-promote his relationship at Berkman with his blogging at GeekDad.com and at conferences, including Games4Health, MacArthur's DML conference, and ITK, Finland's largest tech/ed conference where he keynoted.

Peter Suber, faculty fellow, published an op-ed in *The Guardian*, gave eight published interviews, and spoke at a dozen events, including meetings on open access at Brandeis University, Wellesley College, the University of Ljubljana, the Massachusetts Commonwealth Consortium of Libraries in Public Higher Education Institutions, and the Association of Southeastern Research Libraries. His book, *Open Access* was named an Outstanding Academic Title for 2013 by *Choice* magazine. During the year he posted a steady stream of open access updates and supplements to *Open Access* home page, nearly doubling the size of the book.

Dennis Tenen continued his teaching and research at Columbia University in the fields of digital humanities and new media studies. During this academic year he gave a number of talks and workshops, including a keynote address on technology and protest at Glasgow University, a talk on book piracy at Cornell Tech, and a workshop on the ethics of plain text at the Princeton-Weimar Summer School for Media Studies. Several of his publications were either accepted or appeared in print, including "Book Piracy as Peer Preservation" in *Computational Culture*, "Sustainable Authorship in Plain Text" in *Programming Historian*, and "Unintelligent Design" in *boundary 2*. He taught classes at Columbia's School of Journalism on illicit knowledge, media archeology, and "Foundations of Computing," for which he also drafted the curriculum. In addition, he received a grant from the Sloan Foundation to collect and analyze the world's largest archive of classroom materials and began work on Science Surveyor, a web service to improve science journalism, with support from the Brown Institute.

Sara M. Watson, technology critic, published articles about personal data and its uses in popular publications including *Wired*, *Harvard Business Review*, *Slate*, and *The Atlantic*. In particular, "Data Doppelgängers and the Uncanny Valley of Personalization" in *The Atlantic* encapsulated much of her recent work on the subject. She also delivered a number of talks and guest lectures at Berkman, MIT, and the Harvard Extension school on the lived experience of data and algorithms. She also presented at a number of conferences including "Theorizing the Web" and "Quantified Self Europe," where her themes included "Living with Data: Stories that Make Data More Personal" and "What We Talk About When We Talk About Data." Along with Tim Maly she started a new working group, "Angry Tech Salon," to provide a platform for discussing current events in technology juxtaposed with critical theory. She is also developing an alternative style guide for journalists of technology and led a Fellows Hour with Center affiliate Amy Johnson on "Progress Narratives and Moral Panics." She runs a monthly Technology Book Club for members of both the Berkman Center and the greater Boston technology communities, which focuses on all genre of technology books and discusses the formal aspects of different approaches, methodologies, and audiences.

David Weinberger, Berkman senior researcher and co-director of the Harvard Library Innovation Lab, worked mainly on issues that intersect the transformative nature of the Internet and the future of libraries. His "Library as Platform" article in Library Journal garnered some

attention. Two projects from the Lab — StackLife and LibraryCloud — won a Stanford Prize for Innovation in Research Libraries Commendation of Merit. He gave a number of significant talks, including the Alice Bobb Brendel Lecture at Brown University, the closing keynote at the Web Economic Forum, a strategic planning lecture at the University of Pennsylvania, an invited address at the National Library of Colombia, talks at Stanford Library and the National Library of Israel, and keynotes at the Evergreen User Conference, NAHSL, VALE, the 50th Anniversary Gala of the University of Rhode Island Library, and more. In areas outside of libraries, he began as a contributing columnist for CNN.com, the "Next Big Think" section of the *Hemispheres* in-flight magazine, and the new *Technologist* e-magazine. He wrote invited chapters titled "Shakespeare as Network" for *Shakespeare and Textual Studies* (Cambridge University Press, 2014), and "Heidegger's Communication Theory" for *Exploring the Roots of Digital and Media Literacy through Personal Narrative*. In May he was awarded an honorary Doctorate of Letters by Simmons College, where he also delivered the graduate school's commencement address. He continues to research and draft a book about our new conception of the future.

Jeffrey R. Young, as a joint fellow between the Berkman Center and the Nieman Foundation for Journalism, had two areas of focus: the first was the impact of Massive Open Online Courses (MOOCs), and the second was the future of journalism. In the fall he worked with Faculty Director Charles Nesson as a Teaching Fellow for his Internet and Society course, where he co-wrote a case study: "MOOCs and Consequences for the Future of Education." Throughout the academic year he gave several talks and participated in panel discussions, including at the World Knowledge Forum in Seoul, at the MIT Sloan Technology Conference on Disrupting Life, and at the Berkman Center. He also collaborated with a PhD student at the MIT Media Lab, Scott Greenwald, to build a prototype of a journalism app for Google Glass, which he tested with the help of Primavera De Filippi. In June, he returned to *The Chronicle of Higher Education*, where he is leading an internal review of how to make the publication more digital-first.

Dorothy Zinberg is a Harvard Kennedy School Lecturer and Berkman Faculty Associate and this year has enjoyed her proximity to the Center and engaging all it has to offer. She continued to promote the Berkman Center to students and those she meets in the capacity of Faculty Associate at the Belfer Center for Science and International Affairs and as a faculty member with the Program for Science, Technology, and Public Policy. She also traveled to Germany to further collaboration between the Center and the Humboldt Institute for Internet and Society on issues related to the NSA, and moderated two panels: one on "Chinese Internet" at the University of Cambridge, and another on "The Impact of Cellphones on the Arab Spring" at Oxford University. She gave a talk at 10 Downing Street to winners of a distinguished fellowship, one of whom will soon join Berkman as a fellow. It is in this manner that she hopes to continue to serve as a bridge between Berkman and the international sphere. Bridging the pre- and post-Internet world, she also continued a research project that she began in 1968 as a postdoctoral biochemist and social scientist at University College, London. This year she revisited its subjects, then undergraduate chemistry students and now in their 60s. She hopes to recreate the students' collective tale and emphasize the importance of friendships made during university years.

4. Publications

Berkman Center community members produced a number of major publications this past year, and helped fellows and affiliates release five books, including:

- *Black Code: Inside the Battle for Cyberspace*, by Berkman Affiliate Ronald Deibert, describes how cybercriminals, governments, and corporations develop tools to take control of the Internet, and why we should be concerned.

- *Carry On: Sound Advice from Schneier on Security* by Berkman Fellow Bruce Schneier, features more than 160 commentaries on recent events including the Boston Marathon bombing, the NSA's ubiquitous surveillance programs, Chinese cyber-attacks, the privacy of cloud computing, and how to hack the Papal election.

- *It's Complicated: The Social Lives of Networked Teens,* by Berkman Fellow and youth culture and technology expert danah boyd, uncovers some of the major myths regarding teens' use of social media. She explores tropes about identity, privacy, safety, danger, and bullying.

- *The Social Machine,* by Berkman Fellow Judith Donath, addresses topics such visualizing conversations and networks; portraying identity with data and history; delineating public and private space, and bringing the online world's open sociability into the face to face world.

- *The Library Beyond the Book,* by Berkman Director Jeffrey T. Schnapp and Berkman Fellow Matthew Battles, explores what libraries have been in the past to speculate on what they will become: hybrid places that intermingle books and ebooks, analog and digital formats, paper and pixels.

Among the two dozen publications released through the Center's website and other online channels are:

- Nine reports looking at important issues facing youth, including six from the Berkman Center's Student Privacy Initiative and two joint reports with the Pew Research Center's Internet & American Life Project;

- Four reports from the Internet Monitor project;

- Two reports from the Digital Media Law Project; and

- Several other reports covering a wide spectrum - from cloud computing, to interoperability, to the spread of information in blogs, to civics and local network infrastructure.

Each release was promoted over Berkman Center listservs and via social media outlets; in some cases hard copies of the publication were produced. Below are summaries.

<u>Youth and Media/Student Privacy Initiative</u>

- *Framing the Law & Policy Picture: A Snapshot of K-12 Cloud-Based Ed Tech & Student Privacy in Early 2014*: This paper provides a snapshot of key aspects of a diverse—and heated—law, policy, and implementation debate taking place in the rapidly evolving cloud-based ed tech landscape as of early 2014. It aims to provide policy and decision-makers with greater information about and clarity around the avenues available in evaluating privacy options. Authored by Leah Plunkett, Alicia Solow-Niederman, and Urs Gasser.

- *Student Privacy and Cloud Computing at the District Level: Next Steps and Key Issues*: This report recommends next steps and prioritized open issues in the K-12 educational technology (edtech) space regarding student privacy and cloud computing, with a special emphasis on two topics: (1) law and policy and (2) norms, values, attitudes, and practices, as well as an overarching eye to opportunities for collaboration. Authored by Alicia Solow-Niederman, Leah Plunkett, and Urs Gasser.

- *K-12 Edtech Cloud Service Inventory*: Created for and informed by the co-organized Berkman Center and Consortium for School Networking working meeting on November 19, 2013, this report provides those with a non-technological background with a concrete survey of the kinds of cloud computing technologies (categorized by the affordances each offers) that may be adopted in K-12 educational contexts. Authored by Isaac Meister and Alicia Solow-Niederman.

- *Youth Perspectives on Tech in Schools: From Mobile Devices to Restrictions and Monitoring:* This research brief, prepared by the Berkman Center's Youth and Media project for the co-organized Berkman Center and Consortium for School Networking working meeting on student privacy and cloud computing, presents empirical data on student privacy attitudes drawn from a series of focus groups conducted across the country between February and August 2013. Authored by Sandra Cortesi, Paulina Haduong, Urs Gasser, Osman Tolga Aricak, Mark Saldaña, and Zach Lerner.

- *Student Privacy in the Cloud Computing Ecosystem: State of Play & Potential Paths Forward*: This report draws from ongoing Student Privacy Initiative research to map the current landscape and connect the often-siloed perspectives of educational institutions, students, parents, and administrators as well as cloud service providers and policy makers. Authored by Urs Gasser, Alicia Solow-Niederman, and Caroline Nolan.

- *Privacy and Children's Data: An Overview of the Children's Online Privacy Protection Act and the Family Educational Rights and Privacy Act:* This guide from Harvard Law School's Cyberlaw Clinic offers schools, parents, and students alike a sense of some of the laws that may apply as schools begin to use cloud computing tools to help educate students. Authored by Dalia Topelson, Christopher Bavitz, Ritu Gupta, and Irina Oberman.

- *A Global Research Agenda for Children's Rights in the Digital Age:* As national and international policy frameworks and guidelines regarding ICT develop—albeit unevenly and more in the global North than South—it is vital that policy is firmly based in evidence, taking into account children's experiences. This report asks whether sufficient research exists to support evidence-based policy and practice regarding children's rights relating to ICTs. Authored by Sonia Livingstone and Monica Bulger.

- *Teens and Mobile Apps Privacy*: 58% of American teens have downloaded an app to a cell phone or tablet. More than half of teen apps users have avoided an app due to concerns about sharing their personal information—and girls are especially likely to take steps to protect their location data. This report, published jointly with the Pew Research Center's Internet & American Life Project, summarizes data from several intensive focus groups and surveys conducted with teens regarding mobile application use. Authored by Mary Madden, Amanda Lenhart, Sandra Cortesi, and Urs Gasser.

- *Where Teens Seek Online Privacy Advice*: This report explains findings from surveys conducted with teens ages 12-17 report on where they go for advice on managing content sharing and privacy settings. Authored by Mary Madden, Amanda Lenhart, Sandra Cortesi, Urs Gasser, and Aaron Smith.

Internet Monitor

- *Blogs as an Alternative Public Sphere*: This report focuses on new developments in Internet freedom, using data collected from thousands of blogs, mainstream media, and TV sources to examine the role of Russian blogs within Russia's media ecosystem. Authored by Bruce Etling, Hal Roberts, and Rob Faris.

- *Internet Monitor 2013: Reflections on the Digital World:* The Internet Monitor project's first-ever annual report, is a collection of essays from nearly two dozen experts around the world, including Ron Deibert, Malavika Jayaram, Viktor Mayer-Schönberger, Molly Sauter, Bruce Schneier, Ashkan Soltani, and Zeynep Tufekci, and others, representing some of the most salient developments in cyberspace in 2013.

- *Measuring Internet Activity: A (Selective) Review of Methods and Metrics:* This report seeks to describe the conceptual and practical impediments to measuring and understanding digital activity, and highlights a sample of the many efforts to fill the gap between the incomplete understanding of digital life and the formidable policy questions related to developing a vibrant and healthy Internet. Authored by Rob Faris and Rebekah Heacock.

- *Rationing the Digital: The Policy and Politics of Internet Use in Cuba Today:* This report explores Cuba's complex economy of Internet connectivity, how digital expression is regulated in the country, and how recent developments in infrastructure might change the shape of access and use on the island. Authored by Ellery Roberts Biddle.

Digital Media Law Project

- *Who Gets a Press Pass?: Media Credentialing Practices in the United States:* This study, the first of its kind to perform a quantitative examination of media credentialing in the United States, surveys the experience of journalists throughout the country in their efforts to obtain media credentials from different types of credentialing organizations from 2008 to 2013. Authored by Jeffrey Hermes, John Wihbey, Reynol Junco, and Osman Tolga Aricak.

- *Service and Research at the Frontier of Media Law*: This report explores the large body of data gathered over four years of operating the Digital Media Law Project's free nationwide attorney referral service for journalists, the Online Media Legal Network, and identifies notable patterns and trends in the legal needs of a substantial cross-section of the digital journalism ecosystem. Authored by Jeff Hermes and Andrew Sellars.

Interoperability

- *Interoperability Case Study: From Crowdsourcing Potholes to Community Policing: Applying Interoperability Theory to Analyze the Expansion of "Open311:* This case study is part of an ongoing series developed in support of a larger text on interoperability by John Palfrey and Urs Gasser, *Interop: The Promise and Perils of Highly Interconnected Systems* (Basic Books, June 2012). This paper utilizes interoperability as a descriptive lens to examine the emergence of crowdsourced tools for civic reporting, and predict issues. Authored by Manik Suri.

- *Interoperability Case Study: The European Union as an Institutional Design for Legal Interoperability*: This report looks into the governance model of the European Union as a demonstration of the obstacles to and benefits of interoperability within legal systems. Authored by Félix Tréguer.

Additional Reports

- *Why We Engage: How Theories of Human Behavior Contribute to Our Understanding of Civic Engagement in a Digital Era*: This literature review explores the intersection of theories of human behavior with the motivations for and benefits of engaging in civic life. Bringing together literature from behavioral economics, sociology, psychology, and communication studies reveals how civic actors, institutions, and decision-making processes have been traditionally understood, and how emerging media tools and practices are forcing their reconsideration. Authored by Eric Gordon, Jesse Baldwin-Philippi, and Martina Balestra.

- *Citizen-Centered Governance: The Mayor's Office of New Urban Mechanics and the Evolution of CRM in Boston*: Written during the summer of 2013, in anticipation of

Boston Mayor Thomas Menino's retirement in January 2014, this case study examines the ongoing evolution of the Boston Mayor's Hotline into a platform for civic engagement. Authored by Susan Crawford and Dana Walters.

- *Community Fiber in Washington, D.C., Seattle, WA, and San Francisco, CA – Developments and Lessons Learned:* This report provides detailed accounts of planning carried out in connection with community fiber networks in Washington, D.C., San Francisco, CA, and Seattle, WA, including information about existing fiber assets that the cities identified, funding mechanisms that were considered, and roadblocks encountered. This report will be helpful to other cities considering launching fiber optic networks. Authored by Susan Crawford, John Connolly, Melissa Nally, and Travis West.

- *Bringing Municipal High-Speed Internet Access to Leverett, Massachusetts*: This report provides a detailed account of the development of LeverettNet, Leverett, Massachusetts' municipal fiber optic network, including information about the extensive planning and outreach activities carried out from 2011-2013, as well as details of the technical and operational characteristics of LeverettNet. Authored by Susan Crawford and Robyn Mohr.

- *Governments and Cloud Computing: Roles, Approaches, and Policy Considerations:* In this paper, Urs Gasser and David O'Brien synthesize findings from a multi-year cloud computing research initiative led by the Berkman Center in close collaboration with the NEXA Center for Internet & Society (Italy), Keio University (Japan), the Research Center for Information Law (Switzerland), the NCCR Trade Regulation project on digital technologies and trade governance (Switzerland), and the participants at our Cloud Computing Workshop series held in Cambridge, MA, Washington, DC, and Keio University in Japan. Authored By Urs Gasser and David O'Brien.

- *Cloud Innovation and the Law: Issues, Approaches, and Interplay:* This report distills insights about the interplay between cloud computing technology and the legal and regulatory system, and contributes to a broader understanding of an emerging analytical framework for technology regulation in digitally networked environments. Authored by Urs Gasser.

- *Social Mobilization and the Networked Public Sphere: Mapping the SOPA-PIPA Debate:* This paper uses a new set of online research tools to develop a detailed study of the public debate over proposed legislation in the US designed to give prosecutors and copyright holders new tools to pursue suspected online copyright violations. For this study, authors compiled, mapped, and analyzed a set of 9,757 stories relevant to the COICA-SOPA-PIPA debate from September 2010 through the end of January 2012 using Media Cloud, an open source tool created at the Berkman Center to allow quantitative analysis of a large number of online media sources. This study applies a mixed-methods approach by combining text and link analysis with human coding and informal interviews to map the evolution of the controversy over time and to analyze the mobilization, roles, and interactions of various actors. Authored by Yochai Benkler, Hal Roberts, Rob Faris, Alicia Solow-Niederman, and Bruce Etling.

- *Good Practices for University Open-Access Policies*: This is expanded print edition of the open-access guide focuses on recommendations for university policies on open access to faculty research. Authored by Peter Suber and Stuart Shieber.

C. Communications and Digital Media

The Berkman Center's communications outputs are an important component of its commitment to access to knowledge and support for the public good, as well as a driver of community growth. The Center's communications team continues to develop an adaptive and modular approach, with our fellows, faculty, affiliates, faculty associates, staff, and general community contributing to public discussions through a variety of modes, channels, and contexts. Our team has strategically employed multimedia production, social networking, email communications, direct communications with press, and many other tools and methods to have an impact on the dialog and practice of our field.

The Center's communications continue to generate high attendance at Berkman events, and also yield an ever-increasing number of requests for comment from faculty and fellows. Our community is quoted almost daily in a vast range of news publications: the New York Times, the Atlantic, the Economist, BBC, NPR, CBC, Wall Street Journal, Washington Post, Financial Times, Harvard Gazette, Ars Technica, Guardian, MIT Technology Review, Al Jazeera, Business Insider, Wired, the Guardian, La Stampa, Der Spiegel, India Times, El Pais, Toronto Star, and many others.

Berkman's own media, including its websites and mailing lists, anchor the Center's communications and community work. Excluding the Center's many project-specific websites, Berkman's main website and its resources are visited approximately 5 million times per year. Our primary email lists—sharing information about new events, videos, research, and conversations in the Berkman community—have grown to reach tens of thousands of people each week. The Center maintains a substantial presence on platforms such as Facebook, YouTube, and Twitter.

Output	2013-2014
Berkman Buzz	12,799 subscribers (up from 11,600 subscribers in 2012-2013)
Events and Digital Media Roundup	12,377 subscribers (up from 10,900 subscribers in 2012-2013)
YouTube *from May 31, 2013 - May 31, 2014*	8,560 subscribers/176,479 video views/1.202m views overall (up from 6,000 subscribers / 130,492 video views in 2012-2013)

Twitter *as of July 21, 2014*	33,142 subscribers/8,025 tweets (up from 26,115 subscribers/6,366 tweets in 2012-2013)
Facebook *as of July 21, 2014*	10,109 followers (up from 8,351 followers in 2012-2013)
RSS Subscribers for all Berkman Digital Media *as of July 21, 2014*	1,491 subscribers (up from 1,463 subscribers in 2012-2013)
Radio Berkman episode listens/downloads *between May 31, 2013 and July 21, 2014*	105,888 downloads (up from 97,000 downloads in 2012-2013)
SoundCloud Radio Berkman	160 followers/2193 listens (up from 130 followers/1686 listens in 2012-2013)

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. In addition to webcasting and archiving events, the Center produced several unique media packages:

- 10+ short videos about projects created by our partners at the Library Lab at Harvard's Office of Scholarly Communication;

- Several unique video explainers and documentaries, including ones for the Digital Public Library of America, the Digital Media Law Project, and the Law Lab;

- Several unique text, audio, and video pieces produced by 2013 interns introducing the 2013-2014 class of fellows; and

- Several other videos and event recordings/webcasts with the Youth and Media project, for the Digital Problem Solving Initiative, the UNICEF Digitally Connected project, Terry Fisher's edX Copyright course, and for the Digital Public Library of America.

Though the Radio Berkman podcast series has mostly been on hiatus, the audience for its older interviews and produced audio stories has actually grown with the help of its presence on Soundcloud.

The Center's digital media stream is syndicated through a blog, iTunes, and PRX, and also on YouTube; it is frequently re-syndicated, embedded by third parties, and widely linked to by outlets such as The Atlantic. Over 1,000 Berkman media pieces are available online.

The Center is excited to bring on a full time Communications Manager in 2014. With the help of this individual we look forward to improving our strategic focus, building more partnerships with

the press and other amplifiers of our work, and continuing to develop our own in-house capacity for effective communications.

D. Events

Through discussions, lectures, conferences, workshops, and other gatherings, the Berkman 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 Berkman Center's modus operandi. While research and teaching are the Center's top priorities, these auxiliary connections facilitate the continuous expansion and renewal of Berkman'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.

1. Ongoing Events and Series

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):

- **Oliver Goodenough**, Berkman Center Fellow discussed how creating opportunities for learning how technology is shaping legal practice should be a priority for any school looking to provide a useful education for the lawyers of the present and future.

- **Sophie Hood** and **Helen Nissenbaum** from the Information Law Institute at NYU explored whether new information technologies might be deployed to enhance transparency and privacy with regards to access to US judicial records.

- **Eric Osiakwan**, Executive Secretary of the African Internet Service Providers Association (AfrISPA) and the Ghana Internet Service Providers Association (GISPA), hosted a discussion on rethinking startup finance in Africa, aimed at increasing angel investments in African companies.

- **Javier Bargas-Avila** of Google provided an overview of existing research in the field of User Experience and presented the findings that show how usability, aesthetics and affect work together to create great—or not so great—experiences.

- metaLAB's **Jeffrey Schnapp, Matthew Battles and Pablo Barria Urenda** presented Curarium, a Web-based platform aiming to construct sharable, media-rich stories and elaborate arguments about individual items as well as a group of items within a

corpora. Ingesting collections into Curarium will allow engagement with a wider audience, which will then identify, classify, describe and analyze the objects in the collection, as well as reconstruct the stories of objects that have either disappeared or been destroyed.

- **Molly Crabapple** discussed art in the age of the ubiquitous image. In a world where mobile technology has made images instantaneous and ubiquitous, what does visual art have left to say? Drawing on her experiences doing illustrated journalism around Guantanamo Bay and the Greek economic crisis, Molly spoke about the role of art in a world captured by a million cameras.

- **Anupam Chander**, Director of the California International Law Center, focused on today's flow of electronic information across continents and the legal infrastructure for such trade being rudimentary and uncertain.

- **Zeynep Tufekci** drew from research on a variety of social movements including the Arab Spring, European indignados movements, Occupy and Turkey's Gezi protests, to discuss how these mobilizations were impacted by social media.

- **Aimee Corrigan**, Co-Director of Nollywood Workshops, discussed the "New Nollywood," a growing movement towards better quality films in Nigeria.

- **Cheryl Contee**, CEO of Fission Strategy, explored the gap between creators and consumers, and suggests we are in an "innovation intermission," poised on the threshold of another great wave of technological creativity brought about by the democratization of tools and education, within the context of race and gender.

- **Ed Lee**, Professor of Law & Director of the Program in Intellectual Property Law at IIT Chicago-Kent College of Law, explained how a grassroots movement was able to defeat SOPA and ACTA.

- Berkman Center Fellow, **Kate Darling**, focused on the emergence and effect of robots that are designed to interact with humans on a social level and the societal implications to project life-like qualities onto them.

- **Jerome Hergueux** posed the question, how can we start to build a workable theory of individuals' motivations to freely contribute time and efforts for the provision of global public goods?

- **Sara Boettinger** discussed the need to re-think existing models of Intellectual Property Rights (IPR), re-invent our research agenda, and work to shift international debates.

- **Nicholas Gruen**, a widely published policy economist, entrepreneur and commentator explored the economic basis for public/private partnerships, and shares examples of innovative partnerships that thrive in the Internet age.

- **Eszter Hargittai** and **Aaron Shaw** presented findings that suggest efforts to overcome the gender gap in Wikipedia contributions must first address the web-use skills gap.

- **Margot Kaminski** explored how the pending increase in robotic surveillance poses new questions for U.S. privacy law, particularly the application of privacy torts.

- **Veni Markovski** spoke about policies with regards to who controls the Internet. He explored how the 2014 landscape of Internet governance may change.

- **Tricia Wang** explored a new form of sociality among Chinese youth: an elastic self. Tricia believes the changes she has documented will alter the way that people perceive and engage with each other in China.

- **danah boyd** shared her new book, *It's Complicated: The Social Lives of Networked Teens* with Berkman community.

- **Karim Lakhani** discussed how disclosure policies impact search process in open innovation.

- **Camille M. François** argued that we should reflect on the notion of cyberwar and examine its relationship to the idea of peace.

- **Ethan Gilsdorf** discussed how Dungeons & Dragons can be a perfect training ground for law and life.

- **Axel Arnbak** questioned whether governments actually have the ability and the right to hack, and to weaken global communications networks.

- **Susan Benesch** discussed data driven efforts to diminish hateful and violent speech online.

- **Jeff Young** took a close look at who is taking massive open online courses (MOOCs) and why, and explained how free courses fit into broader Internet trends.

- **Primavera di Fillipi** analyzed the interplay between distributed autonomous organizations and the law with a view to explore the dangers and opportunities of Ethereum.

- **Elisa Kreiger** invited artists, users, and lawyers to share their copyright experiences with online platforms in order to facilitate a debate on the future of the distribution of digital arts works online.

- **Sara Marie Watson** shared examples of how we find clues, investigate, and reverse engineer what's going on with our personal data.

- **Hasit Shah** explored the impact of cheap smartphones and digital news on the world's

biggest election in India during June of 2014.

- **Malavika Jayaram** offered a non-western perspective on privacy in order to generate a more inclusive discourse about what it means to be autonomous and empowered in the face of paternalistic development projects.

- **Lauren McCarthy** posed the question, "can we use technology to help us be more human?" Her discussion attempted to understand this question through an artistic practice involving hacking, design, and self-examination.

- **Dalia Othman** shared initial findings of ongoing research being conducted on the Arab Blogosphere and Twitter maps from various countries in the region to identify the role of social media.

- A talk hosted by Berkman's **Student Privacy Initiative** team provided an overview of the rapid transformation in primary and secondary education systems nationwide as they adopt cloud-based educational technologies.

- **Ivan Sigal** explored the effects of citizen media and social movements within the lens of Global Voices coverage and activism.

- **Dino Sossi** hosted a screening of his documentary film, *Home*, which explored issues of personal identity, memory and collective grief.

- **Jim Gettys** looked at security in home embedded devices.

2. Conferences and Special Events

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:

- **After Snowden: Towards Distributed Security in Cyberspace:** Ronald Deibert, Professor of Political Science, and Director of the Canada Centre for Global Security Studies and the Citizen Lab at the Munk School of Global Affairs, helped put the NSA revelations in a broader context, emphasizing the political economy of the cybersecurity industrial complex and its unintended consequences in a world of Big Data, drawing from his book, *Black Code.*

- **A Global Research Agenda for Children's Rights in the Digital Age**: Drawing on the framework of the UN Convention of the Rights of the Child, Berkman Fellow Sonia Livingstone launched a new publication which critically examined the state of play regarding children's rights in the digital age in order to identify the research and policy priorities. The forum took place as part of the launch of a special report for UNICEF's Office of Research, and was preceded by a research workshop with colleagues from UNICEF and other academic institutions.

- **When to Blow the Whistle? A discussion on the role of whistleblowers in society**: Hosted by the Allston Ed Portal, Charlie Nesson, and the Berkman Center for Internet & Society, with a focus on building community and thoughtful discussion, this event explored the unfolding debate around transparency, secrecy, leaks, and morality with Berkman fellows and Harvard-Allston Task Force members.

- **Defending an Unowned Internet: Opportunities for Technology, Policy, and Corporations**: In the wake of the disclosures about government surveillance and the rise of corporate-run applications and protocols, is the idea of an "Unowned" Internet still a credible one? The Berkman Center for Internet & Society hosted a panel discussion on addressed this question as well as explore the potential for reforms in policy, technology, and corporate and consumer behavior. A second installment of the discussion followed in April, **Intelligence Gathering and the Unowned Internet**, where two members of the National Security Agency joined Berkman Faculty and Fellows for a conversation leveraging perspectives from inside and outside the U.S. intelligence community to bring some clarity to a discussion often rife with confusion.

- **The Emerging Cyber Security Paradigm: How New Innovations Meet Unknown Cyber Needs**: Over the past decade Israel has created some of the most innovative cyber security companies in the world today. The Berkman Center for Internet & Society and Jerusalem Venture Partners (JVP) gathered leaders in academia, business, and entrepreneurs to discuss trends we see among cyber security companies, where we will hear from prominent Israeli start-ups and their founders on new approaches to cybersecurity. Participants discussed shifting cyber security paradigms, demonstrate and showcase emerging technologies, and explore the evolving security landscape and ecosystem.

- **US Launch of *impossible***: Since September, the public has been experimenting with an app that relies on the goodness of humankind. Called *impossible*, it leverages the idea of a gift economy through social media to grant wishes. The Berkman Center celebrated the US launch of *impossible* with Lily Cole, founder of *impossible* and fashion model, actress, and social entrepreneur; Sir Tim Berners-Lee, Founder and CEO of the World Wide Web Foundation; Rosemary Leith, Berkman Center Fellow; Judith Donath, Berkman Center Fellow; Jonathan Zittrain, Director at the Berkman Center for Internet & Society and Professor at Harvard Law School; and Urs Gasser, Executive Director of the Berkman Center for Internet & Society.

- **Copyright Reforms in Brazil and the United States**: Professor William Fisher and Pedro Paranagua, senior legal advisor for the Brazilian government on Intellectual Property, discussed comparative perspectives of current bills advancing copyright reforms in Brazil and the US.

- **Boston Activate Talk: Innovating to Connect the Unconnected**: Concluding our Digitally Connected forum, the Berkman Center and UNICEF held a series of webcast

"Activate" talks examining what types of innovations are needed to connect the unconnected.

- **The Social Machine**: Judith Donath, Berkman Center Fellow, launched her book, *The Social Machine*, which explores topics such visualizing conversations and networks; portraying identity with data and history; delineating public and private space, and bringing the online world's open sociability into the face to face world.

- The Berkman Center co-hosted a pre-release screening of **The 5th Estate**—the filmic depiction of the Wikileaks story—at the Brattle Theater in Harvard Square. The screening was accompanied by a Q&A with Charlie Nesson and the film's screenwriter (and HLS alum) Josh Singer, as well as a panel with Singer, Jonathan Zittrain, Yochai Benkler, Larry Lessig, Ethan Zuckerman, and P.J. Crowley, moderated by Sacha Pfeiffer of WBUR.

- **Socrates in Cyberspace**: **Toward the Future of Dialogic Education:** Inspired by the conversations and mode of the Berkman Center Festival of Ideas, Socrates in Cyberspace explored the future of dialogic education—that is, teaching with and through open dialogue—by utilizing the expertise and spirit of the Berkman community. The day focused specifically on development and execution of a small-group discussion methodology, using the recent NSA/national security controversies as a starting point.

- **Public Safety & Private Citizens: The Path Forward for Mobile Ad Hoc Networks**: The Berkman Center for Internet & Society began to explore the technical and social potential of mesh networking in 2012, and more recently, Harvard Professor and Berkman Co-Founder Jonathan Zittrain joined former FCC Chair Julius Genachowski in a June 2013 op-ed to argue that the city of Boston should test an emergency ad hoc network. Beginning with the two visions enumerated in the Zittrain-Genachowski op-ed, the Center hosted a highly interactive conversation that explores concrete next steps for a local ad hoc networking test case.

- **Workshop on National Security and the Emerging Surveillance State**: The Berkman Center hosted a small meeting to discuss National Security legislation, technological interventions, social mobilization, oversight and accountability, and related global issues.

- **Web We Want**: Berkman Center Fellows organized a half-day workshop in late February gathering community members and invited guests to discuss an agenda for conservation, research, and action on building the Web We Want, a campaign celebrating the 25th anniversary of the Web led by the World Wide Web Foundation.

- **Data and Development**: The Berkman Center hosted a workshop examining issues clustered around three broad themes of privacy and security (technical and human), welfare and social justice, and evidence-based policy making.

- **Conceptualizing Communications Security**: This one-day roundtable discussion held at the Berkman Center focused on the question how regulators should think about

communications security. Approximately 25 experts gathered to survey insights from A.I., computer science, security economics, foreign policy theory and constitutional law to gain insight into security conceptualizations.

- **Civic Technology Initiative**: Berkman hosted a vibrant conversation with local community leaders meant to deepen our collective understanding of the tensions, pressures and benefits of organizations using technology for civic engagement. In addition to building a lasting network around a community of practice, this workshop contributed to establishing a research agenda that can be maximally beneficial to practice.

Project-related events are described in preceding sections of this report.

3. Working Groups

Cyberscholar Working Group. The working group is a monthly forum for students, fellows, and affiliates of Harvard's Berkman Center, Yale Law School's Information Society Project, the Comparative Media Studies Department/Future for Civic Media at MIT, and Columbia University to share academic works in progress.

In addition to the Cyberscholar Working Group, Berkman fellows and community members organized a series of informal clubs and conversations over the course of the year, including: The Tech Book Club, the Networked Storytellers Group, the Angry Tech Salon, the Privacy Law Reading Group, the Cooperation Working Group, the Privacy and Cybersecurity Working Group, and an Open Governance Working Group.

4. Visitors and Delegations

The Berkman Center hosted a number of special guests and visitors over the course of the year. Notable guests included: Cindy Cohn, Legal Director for the Electronic Frontier Foundation; Travis Kalanick, CEO of Uber; John Williams, Bridgespan; Dale Cohen, Special Counsel at Frontline; and Steve Ballmer, former CEO of Microsoft. The Berkman Center also hosted a delegation of officials from Uruguay as well as Turkish journalists, among others.

E. Technical Infrastructure and Software Development

"The Geeks"—as the technical staff at the Center are affectionately called—work to sustain two broad (and overlapping) mandates. At the core of the Center's operations, the Geeks build, support, and maintain the hardware and core services on which the Center relies to conduct its day-to-day work; toward the edges, the Geeks develop software solutions and provide project management services, frequently in collaboration with teams working elsewhere within HLS or within the wider University, to meet the needs of the Center's various initiatives.

All software at the Berkman Center, whether developed exclusively in-house or in collaboration with partners, passes through the development group; likewise, all hardware deployed at the

Center—from workstations and mobile devices to enterprise-grade servers—is specified, provisioned, and maintained by the technical infrastructure support group. The Geek team currently consists of Geneve Bergeron, Justin Clark, Sebastian Diaz, Jennifer Jubinville, David Larochelle, Anita Patel, Edward Popko, and Ryan Westphal.

In the past year, the Geeks have liaised with more than three dozen projects and initiatives within and outside the Center, producing novel solutions to technical challenges. Selected outputs of their participation include, but are by no means limited to:

- the redesign and development of a dramatically improved Chilling Effects clearinghouse, developed with assistance from David Larochelle and Anita Patel;

- a suite of coordinated applications (an application tool, a grading tool, and an exam tool) to support the Copyright X networked course, developed by Justin Clark, Anita Patel, and Ryan Westphal;

- the Internet Monitor platform, which presents aggregated and analyzed data on Internet access, controls, and activity, developed by Justin Clark and Ryan Westphal;

- a proposal for new Internet protocols to facilitate content mirroring, shepherded by Ryan Westphal, in support of the Internet Robustness project which is managed by Geneve Bergeron;

- qUeRL, a digital media coding and survey tool to enhance social science research workflows, developed by Anita Patel; and

- dynamic visualizations of student privacy data, UNICEF/Digitally Connected event participant relationships, and Media Cloud controversy data, designed and coded by Justin Clark.

Once again, the Geeks have been instrumental in development and coordination work for the Library Lab, a collaboration among the Harvard Library, the Office for Scholarly Communication, and Harvard University IT Library Technology Services that aims to produce useful tools for librarians, instructors, researchers, and the broader scholarly community. Projects for which the Geeks have provided extensive development work include:

- Author Names (or OAQ: Online Author Questionnaire), a tool that enables publishers to exchange author name and identity metadata with librarians, opening access to valuable data of keen interest to libraries when establishing author identities, disambiguating between authors, and linking to external identity registries;

- Class Request Tool allows instructors to request assistance, space, and time for teaching with primary resources at Harvard's archives and special collection repositories;

- Collection Shift Tool assists library staff to plan and prepare the move of a collection by estimating linear feet required by sets of call number ranges;

- FACADE2/Curator's Workbench is a joint project of Harvard and MIT to collect, archive and preserve architectural records;

- HOLLIS Geosearch, a project that explores the opportunities that georeferencing library catalog data can provide to enhance catalog searches;

- Inscriptio, an application that allows library patrons to apply for a preferred carrel in the Harvard libraries based on a map of locations and current availability;

- Link-o-matic, an online tool that automates the process of linking digital resources created by Harvard Library and stored in the University's preservation repository with the associated metadata located in discovery systems like HOLLIS;

- Spectacle, a library collections slideshow generator that integrates with the Zeega presentation platform;

- TagTeam, middleware between tagging platforms which allows readers to harness the power of social tagging;

- Transcription Tool, a research project that explores options for technology that will assist librarians, archivists, and others in transcribing analog text annotations onto digital assets;

- Media production;

- Library License; and

- Zone 1, a 'rescue repository' which provides lightweight, interim storage for digital files before they are curated and processed for long-term preservation-level storage.

This extensive development work is undergirded by the hardware and software platforms maintained by the infrastructure support group. As of June 2014, the team oversees over 40 servers with over 180 processing cores (a 13% increase over last year) and more than 600 GB of RAM (an increase of 50%), attached to over 20 terabytes of networked storage. These systems run everything from directory services and e-mail to development and production environments for the vast majority of Center projects and collaborations, with 24/7 monitoring and on-call response.

Over the past year, the Geeks also continued to deliver critical infrastructure and technical support to the Center's community of staff, faculty, and fellows out of its 23 Everett Street home base. The infrastructure support group manages a deployed base of over 30 Windows, OS X, and Linux workstations (25% of which were replaced or added over the past year), in addition to a pool of loaner laptops (all of which were replaced this year) and mobile devices, a multimedia conference room, and a full-service media production setup.

The Geeks have continued to provide guidance and expertise to Center projects in ways that go beyond software development and technical infrastructure support. For example, the Geeks have provided project management support for the redevelopment of the Chilling Effects clearinghouse, the Internet Robustness project, and for metaLAB's Curarium project. The team is also heavily involved in support of on-going and stand-alone events—both locally- and remotely-held—serving a critical technical consulting and operations-management role within the events layer of the Center.

The Geeks have always collaborated with teams outside of Berkman and shared practices and understandings regarding how to navigate through technology. To this end, the Center continues to host blogs, wikis, content management systems, and custom applications for use not only by Berkman affiliates, but also by various other Harvard departments and individuals. In addition, the Geeks continually keep up with the latest technological trends and expertise, speaking on topics in which they have expertise at both Harvard and non-Harvard events as well as playing a technical advisory role in a variety of initiatives within the Harvard community and beyond.

II. LOOKING AHEAD

The Berkman Center will not rest on our very substantial laurels. The Internet and the Web have grown and changed profoundly since the Center was founded over fifteen years ago, and to continue pioneering teaching and research will require new, more sophisticated, and more integrative methodologies and partnerships. Over the next academic year, our work will be guided by the following enduring ideals:

- **The Internet is an invitation to build.** We can teach and study by doing -- bringing both people and code into new configurations to model solutions to real problems, documenting as we go. For example, our Chilling Effects project began over a decade ago to document instances of legal and other threats and remonstrations against online speech. It matured into an official repository of the many takedown requests received by intermediaries like Google and Twitter -- quite often the only accessible record of what has been removed from the field of discourse, with or without a court order. It will continue to grow as new phenomena like the European "right to be forgotten" ruling occasion a new round of takedowns. It may not be able to get word of takedowns directly from search engines as it has for copyright claims; in that case, we'll need to devise new ways to be in touch with the broader range of web sites that are the subject of such notices. And while our faculty and affiliates may have strong ideas about the merits and scope of a right to be forgotten, Chilling Effects will simply document its operation, so that researchers around the world can understand and analyze its effects in practice.

- **Distributed and cooperative approaches to digital policy problems are typically overlooked and underused.** Faculty like Yochai Benkler have documented the new public spheres of information, association, and activity made possible by the Internet's expansion. The Berkman Center will make special effort to identify and test approaches to solving online problems through enlisting the public at large, rather than simply imagining new forms of traditional regulation. This includes such things as exploring the

prospects of mesh and ad hoc networking among existing consumer devices, to permit communication to continue even when standard Internet connectivity has disappeared due to natural disaster or other crisis.

- **Academic work means a commitment to rigor and, where helpful, data.** We are less concerned about taking sides than about illuminating elusive truths. We will continue to do that by engaging a range of faculty and fellows from around the world and with differing, at times opposed, points of view, and seek to make the whole greater than the sum of its parts. We will, in the coming months, catalyze a platform that can help measure key elements of the evolving Internet and Web, so that understanding its direction is not limited to the handful of companies and states that possess such data and treat it as trade and state secrets.

As we look ahead, we are awed by the progress of the digital space since our early days when a center on "Internet and society" seemed to risk being too parochial. We will continue to embrace our role as the world's pre-eminent university research center on these topics, and honoring the Internet's invitation, build ew relationships and technologies to chart the network's path and help it attain the best that it can in the public interest.