Policy Brief

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Broadband as Civic Infrastructure: Community Empowerment, Equity, and a Digital New Deal

John B. Horrigan & Jorge Reina Schement

The coronavirus pandemic has shined a spotlight on equity issues in communications policy. As policymakers turn their attention to digital equity, they can build upon community-driven digital equity initiatives that have been developed in the past decade.

These initiatives offer the cornerstone of a Digital New Deal that aims to ensure that digital tools foster democratic values and participation. Numerous cities and communities are seeking to shape the fit of broadband into their civic infrastructures. In this context, federally imposed restraints on communities must change to allow local governments to shape their broadband futures.

Integrating broadband into civic infrastructure calls for planning and financing across levels of government, as well as coordination with the private sector in order to ensure that digital tools are available and affordable to address community needs. Supporting the role of broadband in civic infrastructure can turn the stimulus generated by the coronavirus crisis into an enduring force to address digital equity.

Unequal access to broadband Internet threatens to undermine the ability of Americans to participate in their economy, their communities, and in their democracy. Without change in this regard, the country will have a difficult time rebuilding after the coronavirus pandemic, especially when confronting long-standing shortfalls in economic fairness and social justice. At a time when the nation faces a crisis of commitment to social and physical infrastructure, access to broadband carries the potential to create opportunities for individuals and communities.

"This is what the 'New Deal' means to me, an era of acute social consciousness and realization of mutual responsibility, a time of reciprocal helpfulness, of greater understanding and willingness to work together for the good of all."

Secretary of the Interior Harold L. Ickes, January 31, 1936.*

Broadband has become an essential element in the building of civic infrastructure. The movement in this direction can be seen in community-driven initiatives—often at the neighborhood level—that seek to improve the broadband environment for citizens. Examples include initiatives to increase the number of people with high-quality home Internet service and computing devices. The movement promotes the development of alternative networks to open up new and more affordable ways for Internet access. These efforts also contribute to community spirit that builds social capital through the provision of digital skills training and tech support by community anchor institutions such as public libraries. Collectively, these initiatives are part of the building blocks for a Digital New Deal. By addressing equity issues in broadband consumer adoption and network deployment, digital technologies can be a force to combat misinformation and improve civic outcomes.

These are more than a collection of diffuse undertakings. Broadband and civic infrastructure initiatives amount to a new communications policy compact, one that should guide policymakers. It calls for:

- A stronger role by the federal government in the financing of broadband for public purposes, with a strong commitment to oversight, enforcement, and assessment of progress toward goals for community connectivity.
- Ensuring that states have the capacity for broadband planning and the means to deliver services on digital platforms.
- Building local capabilities for serving citizens' needs for digital skills training, tech support, and information literacy.

The Telephone as Civic Infrastructure

The role of communications networks in civic infrastructure has origins in President Franklin D. Roosevelt's New Deal with the passage of the Communications Act of 1934. The telephone was not initially thought of as an element of civic infrastructure—the early days of mass-market telephony viewed it as a productivity tool for business. Sales brochures stressed efficiency, time savings, and the effect on customers who would see a business with a telephone as technologically savvy. But customers had other ideas. Much to the surprise of early telephone companies, the household telephone became a tool for chat, mainly for women managing households in the 1920s.¹

The social affordances of the telephone helped to shape demands for universal connectivity. Progressives sought a regulatory framework to curb tendencies toward monopoly. Telephone companies sought

^{*} Secretary of the Interior Harold L. Ickes, the longest-serving of President Franklin D. Roosevelt's cabinet secretaries, was a major implementer of the New Deal. Speech to the Associated General Contractors of America (January 31, 1936) as quoted by Jason Scott, Building New Deal Liberalism: The Political Economy of Public Works, 1933-1956, Cambridge University Press, 2006.

¹ Claude Fischer, America Calling, University of California Press, 1992, pp. 66-67, 114-116, 147-150.

protection from each other.² The business-regulatory dynamics, along with the desire for interconnectedness, found their way into the Communications Act of 1934. Its goal was to make communications networks widely available for the purposes of national defense and "promoting safety of life and property."³

Together with the public purposes underpinning the allocation of the electromagnetic spectrum for radio and television, voice and video networks became the stage on which civic engagement played out in communities across the nation. They became tools for collective problem-solving and a shared sense of community. In that way, these networks served as civic infrastructure-inputs into building "capacity to create and sustain civic capacity."4 Operationally, civic infrastructure encompasses a "city's public spaces and civic assets [...] as well as the social processes.⁵ Community groups, civic planners, and city governments are beginning to view broadband networks as part of civic infrastructure, as evidenced in a range of broadband initiatives. These position broadband as a means to build a community's social capital, contribute to information literacy, and foster civic engagement. By conceiving the adoption and use of broadband as part of civic infrastructure, community leaders see digital tools as sources of community improvement, not just as vehicles for e-commerce and consuming digital content.

Broadband as a Civic Asset

The American Reinvestment and Recovery Act (ARRA) of 2009 reoriented federal broadband policy toward civic infrastructure. The act wrote the civic dimension of broadband into legislation by creating

the Broadband Technology Opportunities Program. This invested in "schools, libraries, medical and healthcare providers, community colleges and other institutions of higher education, as well as other community support organizations," in order to improve broadband for communities.⁶ By writing the term "anchor institution" into law, the ARRA helped facilitate the term's use in broadband policy to convey civic purposes.⁷ The National Broadband Plan of 2010, which the ARRA authorized, emphasized the economic importance of broadband networks, but also devoted attention to "national purposes" through the use of broadband for the improvement of government service delivery and civic engagement.

Additionally, three initiatives developed in the aftermath of the ARRA-era initiatives indicate an appreciation for the growing civic dimension of broadband.

Gig.U: This project sought to give community leaders a playbook for deploying next-generation networks and leveraging assets contributed by universities. In Cleveland, Ohio, for instance, Case Western Reserve University used its network resources to provide connectivity for Ashbury Senior Computer Connectivity Center. Though the project's impact was limited, Gig.U brought together community stakeholders to address connectivity problems.

E-Rate modernization: The Federal Communication Commission in 2014 took steps to update E-Rate—a program that provides discounts to schools and libraries to make the Internet more affordable—by expanding its budget from \$2.4 billion to \$3.9 billion, setting ambitious connectivity goals for broadband speeds for schools and libraries, and giving schools and libraries more latitude for negotiating prices for service.⁸ This recognized the growing importance of

² Paul Starr, The Creation of the Media: Political Origins of Modern Communications, Basic Books, 2004, pp. 206-212, 359-361.

³ Communications Act of 1934, section 1, p. 1.

⁴ Jill Blair and Malka Kopell, <u>21st Century Civic Infrastructure: Under</u> <u>Construction21st Century Civic Infrastructure: Under Construction</u>, The Aspen Institute, Spring 2015, p. 7.

⁵ Elizabeth Greenspan and Randall Mason, Civic Infrastructure: A Model of Civic Asset Reinvestment, Penn Praxis for the William Penn Foundation, March 2017, p. 10.

^{6 &}lt;u>The American Recovery and Reinvestment Act of 2009, section 6001.</u>

⁷ Ellen P. Goodman, "<u>Smart Cities' Meet 'Anchor Institutions': The Case</u> of Broadband and the Public Library," Fordham Urban Law Journal, Vol. XLI, 2014.

⁸ Jon Sallet, <u>Four Steps Toward E-Rate Connectivity and Competition</u>, Benton Institute for Broadband and Society, March 2020.

high-speed connectivity for community anchor institutions to serve citizens' needs for using digital tools in the educational and civic spheres.

The National Digital Inclusion Alliance: This coalition came together in 2016 to protect the Lifeline program that enables telephone access for low-income Americans. It soon turned into a coalition of non-profits and local-government officials seeking resources to increase broadband adoption and share best practices. It aggregates voices from initiatives across the country and has evolved into a voice for practitioners seeking to provide digital connectivity and training to low-income populations.

Broadband and Civic Infrastructure

The coronavirus pandemic has further reinforced the idea that broadband plays a crucial role in civic life. The "homework gap" forced the issue, as the inability of children to go to school online underscored the risks of lacking access. More broadly, the pandemic accelerated community-driven broadband efforts that had been unfolding throughout the 2010s. Communities increasingly visualize broadband networks in the mix of indispensable ingredients for cultivating civic life, as the following examples illustrate.

The "Homework Gap"

No issue has done more to thrust the digital divide into the limelight than the forced closing of schools because of the pandemic. The widespread assumption that everyone could go online for school proved to be far off the mark, with nearly 17 million students lacking adequate online access.⁹ The shock produced a flurry of local initiatives—many funded by the Coronavirus Aid, Relief, and Economic Security (CARES) Act to connect students with home Internet subscription plans and computers. But government funding alone proved insufficient. In many places, local philanthropy stepped in, often with computer donations for low-income households, as Dalio Education did in Connecticut.¹⁰ Census data shows that more students have access to computers for education since the pandemic began.¹¹

Arts and Cultural Institutions

In Seattle, Washington, the city's Music Commission and Office of Arts and Culture requested that the mayor achieve "digital equity for all of Seattle's youth," in recognition that widespread Internet adoption is crucial to the development of the city's cultural environment. In Austin, Texas, a Grants for Technology Opportunities Program funds community non-profits for technology access programs. Grants include arts programs that encourage young people to use digital technology for creative purposes.

The Institute for Museum and Library Services launched an initiative in 2018 that encourages museums to share digitized collections with teachers and students. In California, cultural institutions such as the Getty Museum, the Monterey Bay Aquarium, and The Exploratorium have tapped into the state's high-speed educational research network for the purpose of sharing collections beyond the walls of their facilities. Museums, inherently local civic institutions, have begun to recognize how broadband networks can extend their reach.

Parks and Recreation

The National Science Foundation recently awarded a "rec to tech" grant to the Digital Harbor Foundation in Baltimore, Maryland, to develop computer science learning hubs at four recreation centers in Baltimore as well as in Pittsburgh, Pennsylvania. The Parks, Recreation, and Neighborhood Services Department of San Jose, California, functions as a principal agency in the city's campaign to engage urban youth, promote digital literacy, and encourage online access

⁹ Future Ready Schools Initiative, <u>Students of Color Caught in the Homework Gap.</u>

¹⁰ Amanda Blanco, "Dalio Education announces new effort to get tens of thousands of Connecticut schoolchildren access to internet, computers for online learning," Hartford Courant, July 27, 2020.

¹¹ John B. Horrigan, "<u>Digital Tools & Learning</u>," Benton Institute for Broadband & Society, December 2020..

at home. In the parks and recreation context, civic institutions leverage their roles as trusted places to promote access and digital skills, which, in turn, generates the social capital that contributes to the value of public spaces.

Digital Inclusion Funds

The idea that cities should set aside funds to address the digital divide dates at least to the late 1990s when cities such as Austin and Seattle established grant programs aimed at improving technology access for citizens. Austin created its Grant for Technology Opportunities Program, while Seattle established a Technology Matching Fund. Both funds shared similar goals—use a modest amount of city dollars (on the order of \$200,000) to leverage resources from local business or philanthropy for technology projects that help lower-income residents. These programs took their cues from the federal government's Technology Opportunities Program, a Clinton administration grant program for states and cities.

More of these opportunity funds have come online in recent years. Philadelphia, Pennsylvania, operates the Digital Literacy Alliance, a \$700,000 fund supported by a public-private partnership, that includes Verizon and AT&T, to provide resources for community-based digital inclusion programs. In California, San Jose formed the Digital Inclusion Partnership, an ambitious \$24 million public-private initiative aiming to bring 50,000 city residents online. In Kansas, Kansas City's digital inclusion fund came into being in 2013 as an outgrowth of Google Fiber (though financially supported by local foundations). It has given \$1.8 million in grants since its inception.

A common denominator across these initiatives is the application of leverage points by local leaders. Philadelphia's fund was an outgrowth of a cable franchise, and San Jose's emerged from negotiations over rights-of-way access for 5G small-cell deployment. Kansas City's grew out of a highly publicized market entry by Google Fiber. In Charlotte, North Carolina, use of federal funds for digital inclusion unfolded in the context of an already well-developed local digital inclusion movement.¹²

Gap Networks

Prior to the pandemic, Detroit, Michigan, established the Equitable Internet Initiative, which employs wireless mesh technology to provide low-cost or no-cost service for low-income households.13 The initiative trains "digital stewards" from local neighborhoods to operate and maintain the network, and to provide support to subscribers. A related development to emerge from the pandemic involves the formation of networks that offer an affordable Internet option for low-income households. In Pittsburgh, Carnegie Mellon's Meta Mesh project provides free Wi-Fi for homes in three low-income neighborhoods.¹⁴ Similar undertakings include Project Waves in Baltimore,15 as well as NYC Mesh in New York City.¹⁶ These networks may not serve large numbers of households, but they all stress community ownership as a way to provide low-cost Internet service.

Such locally initiated and funded networking projects stand out as community collaborations because they require significant voluntary cooperation. They usually begin with community members, who in turn do the outreach to enlist subscribers. They must find places to install antennas and procure backhaul, the means by which Internet signals from nearby homes connect to the Internet trunk lines that transport data to Internet. That backhaul is sometimes donated by generous local network providers or obtained at a significant discount. Even if modest in reach, neighborhood "do it yourself" networks rate consideration as a solution for local digital divides.¹⁷

¹² Cory Burkharth, <u>City of Charlotte Invests \$3.25 Million to Close Digital</u> <u>Divide</u>, City of Charlotte, November 10, 2020.

¹³ Detroit Community Technology Project, <u>Detroit Community Technolo-</u> <u>gy Project</u>.

¹⁴ Meta Mesh Wireless Communities, Meta Mesh, 2020.

¹⁵ Project Waves, <u>A Community-Owned Network</u>, 2021.

¹⁶ NYC Mesh, Join our community network!, 2020.

¹⁷ Shira Ovide, "<u>Think Local About the Digital Divide</u>," New York Times, December 3, 2020.

Direct Access and Single-Payer Agreements

Improvement of Internet access for school children has emerged in response to the pandemic as a communications policy priority. On their own initiative, schools, local governments, and community philanthropies have distributed computers and explored low-cost options for households in need, such as wireless hotspots near student households without Internet access. Another strategy matches qualifying households with discount offers available from wireline providers.

Taking this approach one step further, some groups have established "single-payer agreements" that purchase subscriptions in bulk from an Internet service provider and then resell or donate them to a specific population, usually low-income households with children in school. Perhaps the most prominent example comes from the Connected Chicago initiative. Such schemes are also under consideration in Central Ohio, in Chattanooga, Kansas City, and in Connecticut. As with gap networks, single-payer agreements require significant cooperation among public officials, school districts, and private-sector Internet service providers.

Reinterpreting Broadband's Civic Role

When taken together, the push of initiatives and the pull of problems demonstrate the deepening role of broadband in civic infrastructure. For example, "arts and parks" programs have established themselves as community anchors for the provision of tech access—a function usually reserved for schools and libraries. Frustration with incumbent providers may drive community involvement for building wireless mesh networks; but these initiatives also signal new impetus at the local level for a say on network quality, service affordability, and the broadband network environment.

But such initiatives are not widespread, have intermittent funding streams, and often face obstacles. Not many cities have digital inclusion funds and the federal government has limited one possible funding source—franchise fees from companies building 5G wireless networks.¹⁸ Gap networks have limited reach in city neighborhoods, while state laws in many places prohibit more ambitious municipal broadband networks, which could address affordability through competition.¹⁹

These examples nonetheless emphasize the devolution of broadband policy to the local level and the pioneering ways in which communities view the potential of broadband infrastructure. As civic infrastructure, broadband becomes a means to several ends:

Developing social capital: Gap networks require far more than hardware and airwaves to operate. Motivated community activists with technological skills must collaborate with community institutions for network installation and uptake among community members.

Contributing to information literacy: Libraries are the "go to" civic institution for connectivity for those without broadband access and for building digital skills. Moreover, libraries and librarians are also the most highly trusted source of information, even more so than local or national media.²⁰ When combined with their role as community tech hubs, libraries can coordinate with other community organizations to advance information literacy. And, as the "rec to tech" examples show, other institutions are positioned as contributors to information literacy.

Fostering civic engagement: When digital inclusion funds support broadband access and emphasize workforce skills, they also cultivate social connectedness and education. "Rec to tech" can open doors for youth to go on to more advanced tech education at community or four-year colleges. Such investments in broadband and skills for community members foster civic engagement.

¹⁸ Jon Brodkin, "FCC Beats Cities in Court, Helping Carriers Avoid \$2 Billion in Local 5G Fees," ArsTechnica, August 13, 2020.

¹⁹ Kendra Chamberlain, "<u>Municipal Broadband is Roadblocked or Outlawed in 22 States</u>," BroadbandNow, May 13, 2020.

²⁰ John B. Horrigan, <u>Libraries 2016</u>, Pew Research Center, September 2016.

A Renewed Policy Compact for Broadband as Civic Infrastructure

The emergence of broadband as civic infrastructure marks a departure from the policy outlook of the late 20th and early 21st centuries that distrusted regulation and discounted government oversight. This perspective sought to restrain government in order to "unleash" innovation, after which economic and social goods would flow.

By contrast, practitioners of broadband as civic infrastructure do not see innovation as an end in itself. Instead, they view innovation as derivative. They set policy objectives first, such as the expansion of broadband adoption, and then find the tools to meet them. Some tools may be innovative in a technical sense mesh networks—but their application serves the goal of affordability. Others may be novel in the sense that city-funded digital inclusion funds are a new idea; but they serve the primary goal of the development of digital capacity among citizens and community institutions. In these ways, community-led projects to fold broadband into civic infrastructure seeks to harness innovation for specific ends, not simply to unleash it.

This has several implications for stakeholders at all levels of government.

The Federal Government

To cultivate the civic dimensions of broadband, the federal government should:

- Fund community broadband initiatives more consistently.
- Oversee progress toward universal broadband more aggressively.
- Integrate digital inclusion initiatives into the delivery of government services more intentionally.

The federal government periodically takes up the role of banker for the deployment of segments of the telecommunications infrastructure. In the last decade, this included investment in networks, but also investment in community initiatives. The ARRA of 2009 was the first example of this and the CARES Act of 2020 the latest. The coronavirus crisis and the ensuing recession have underscored the need for universal broadband adoption and government investment. In particular, the federal government should provide a consistent funding stream for these investments. Increased oversight and assessment should also accompany federal community broadband investments. After all, the federal government does rigorous assessment of workforce development programs—it should do the same for broadband.

From the standpoint of this new perspective on broadband, federal agencies should invest in government information technology systems that ensure that beneficiaries have the digital tools to take full advantage of government services.²¹ Medicaid recipients, for example, should have the online tools available at home to take advantage of telehealth services.²²

State Governments

The past decade has seen states engage in broadband policy (especially planning), even if these efforts have unfolded in fits and starts. Beginning in 2009, the ARRA funded states to conduct broadband mapping and establish state offices for the purpose of broadband planning. That funding stream ended by 2011; but by mid-decade some states had begun to appropriate funds for broadband infrastructure and digital skills.²³ The pandemic has further intensified interest in broadband policy among states, some of it driven by CARES Act funding.²⁴ Research has shown that states that committed broadband funding and planning capacity had improved the quality of their networks.²⁵

- Pew Charitable Trusts, <u>How States Support Broadband Projects</u>, July 31, 2019.
- 24 Pew Charitable Trusts, <u>States Tap Federal CARES Act to Expand Broad-</u> <u>band: Coronavirus relief funding supports access and infrastructure</u>, November 16, 2020.
- 25 Brian Whitacre and Roberto Gallardo, "<u>State Broadband Policy: Impacts</u> on <u>Availability</u>," Telecommunications Policy, July 30, 2020.

²¹ Catherine Rampell, "<u>The Covid-19 Pandemic has Revealed Another</u> <u>Area of Critical Government Underinvestment</u>," The Washington Post, April 13, 2020.

²² Blair Levin and Larry Downes, <u>The Internet after COVID-19: Will we</u> <u>Mind the Gaps?</u>, Aspen Institute Communications and Culture White Papers, April 20, 2020.

States should take steps to coordinate grantmaking with communities for broadband investments and take the lead on broadband planning. This might take the form of stand-alone plans or explicit efforts to integrate planning into regional economic development strategies.

Local Governments

For broadband to contribute to civic infrastructure, communities should claim the locus of program design and implementation. The pandemic has accelerated the role of community institutions—local governments, philanthropy, non-profits, schools, and libraries—in the implementation of broadband, particularly to advance equity goals. It has also spurred new creativity at the local level for the extension of broadband to more people, as the use of broadband in cultural and other institutions shows.

For cities to identify the civic dimensions of broadband, they should embrace a collective-action framework that involves coalitions of community actors in the design of projects to fully exploit broadband's civic potential.²⁶ However, communities' use of broadband funds in civic infrastructure departs from the 20th century communications policy practice in which the federal government played the preeminent role. For the time being, momentum is on the side of communities using broadband funds for the design and implementation of programs in their own civic spaces.

The Private Sector

The private sector already has a role in the civic infrastructure dimension of broadband. Many service providers offer discount Internet plans to address affordability barriers for low-income households. Some also invest in local organizations that provide digital skills training.²⁷ Local governments, however, rely on the goodwill of companies for these initiatives, or they set one-off requirements as conditions for corporate mergers.²⁸ And, even though the pandemic has encouraged the growth of such initiatives, sustaining them as it recedes poses a challenge for all stakeholders.

The private sector should participate in civic broadband initiatives in more enduring ways. The tradition in telecommunications of corporate community engagement is an old one, spanning the telephone and cable eras. However, in more recent times, corporate actors have driven hard to maximize profits. Consequently, appeals to corporate-community partnerships may not find a warm embrace in all corners of the industry. Yet they are important ingredients in addressing inequities in broadband deployment and adoption.

A New Broadband Policy Compact

Many of the developments looked at here arise from a moment in history. The pandemic has put a spotlight on the debilitating consequences that result from a lack of Internet access. Digital divides further emphasize racial and economic fissures at a time when social and racial injustice resurges in political discourse. At the same time, the inadequacy of broadband networks in rural areas takes on greater significance as a reflection of political polarization that also falls along ruralurban lines.

But the pandemic-influenced initiatives identified here are more than just the response to a crisis. They grow out of communities of practice that have evolved in the past decade. Across the nation, cities, and communities, from large to small, are exploring broadband's potential as an essential component of strong civic infrastructure. In effect, they are writing a new communications policy compact that recognizes

²⁶ John Kania and Mark Kramer, "<u>Collective Impact: Large-Scale Social</u> <u>Change Requires Broad Cross-Sector Coordination, yet the Social Sector</u> <u>Remains Focused on the Isolated Intervention of Individual Organiza-</u> <u>tions</u>," Stanford Social Innovation Review, Winter 2011.

²⁷ Ruth Umoh, "<u>Google to Provide Digital Skills Training at HBCUs As</u> <u>Part of \$15 Million Pledge</u>," Forbes, October 14, 2020.

²⁸ Brian Fung, "<u>It Shouldn't Take A Merger For Low-Income Americans</u> <u>To Get Cheap Broadband</u>," Washington Post, March 5, 2014.

G | M | F

March 2021

the importance of communities shaping their broadband futures.

The Federal Communication Commission and the National Telecommunications and Information Administration should initiate policy planning for the post-pandemic era. The Consolidated Appropriations Act of 2021 funded both agencies to help with connectivity in light of the pandemic, including \$3.2 billion for a broadband service and computing device subsidy for qualifying low-income households.²⁹ As worthwhile as this is, the new benefits do not address digital equity comprehensively. Setting goals, identifying action to be taken to meet them, and tracking progress are the first orders of business. By leveraging broadband's role in building civic infrastructure, a new broadband policy compact can contribute to a Digital New Deal that fosters democratic values, opportunity, and participation for all.

²⁹ Benton Institute for Broadband & Society, <u>The Last Broadband Gifts</u> from the 116th Congress, January 15, 2021.

Policy Brief

March 2021

About the Author(s)

John B. Horrigan is senior fellow at the Technology Policy Institute, with a focus on technology adoption and digital inclusion. He previously served as an associate director for research at the Pew Research Center, where he focused on libraries and their impact on communities, as well as technology adoption patterns and open government data, and was part the leadership team at the Federal Communications Commission for the development of the National Broadband Plan, where he was responsible for the plan's recommendations on broadband adoption. The views expressed in this paper are the author's alone.

Jorge Reina Schement is a distinguished professor in the School of Communication and Information at Rutgers University-New Brunswick. He previously served on President George W. Bush's Council of Advisors on Science and Technology, the Technology Advisory Committee for Governor Jerry Brown of California, authored the telecommunications policy agenda for the Congressional Hispanic Caucus, and advised the FCC Transition Team for President Barack Obama. He is a founding member of the FCC Federal Advisory Committee on Diversity in the Digital Age, and has served on boards for the National Academy of Sciences, National Research Council, National Science Foundation, National Endowment for the Humanities, Office of Technology Assessment, and U.S. Commission on Civil Rights, among others.

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