

### **Editor's Note**

In the summer of 2024, Clifford Lynch announced his retirement as executive director of the Coalition for Networked Information (CNI) after 28 years at its helm. CNI quietly launched a project to create this Festschrift to document and honor his legacy. Authors began contributing articles in early 2025, with a planned publication date of July 2025. Since the final membership meeting of Cliff's tenure was April 7–8 in Milwaukee, the plan was to surprise him, surrounded by colleagues and friends, with a presentation of the table of contents of this special issue. However, just two weeks prior to the meeting, Cliff's health worsened; he was told about the Festschrift and received project details and articles. Though unable to attend in person, he participated in the CNI membership meeting via Zoom and also virtually joined his retirement reception, which included readings of excerpts from each article in this volume. Sadly, on April 10, 2025, Clifford Lynch passed away. Festschrift contributors wrote their articles prior to his passing, and we have chosen not to alter their original language.



# Clifford Lynch: “Conducting” the Infrastructure of Scholarship

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**abstract:** This article celebrates Clifford Lynch’s transformative leadership at the Coalition for Networked Information (CNI) and his impact on the evolution of digital scholarship. It highlights his ability to foster collaboration among librarians, technologists, and publishers to address challenges and opportunities in the digital age. The authors emphasize Clifford’s role in enabling key infrastructure from their perspective as leaders of ITHAKA, JSTOR, Portico, and Ithaka S+R, all of which have benefited from his advice and support. Clifford’s foresight in areas such as authentication, digital preservation, and international cooperation is highlighted, alongside his commitment to understanding the evolving needs of the academic community and his vision of the infrastructure necessary to foster future impact. Ultimately, Clifford is a mentor and a catalyst, whose influence extends beyond specific projects to shape the broader landscape of scholarly communication.

## Introduction

In the spring of 1997, when Clifford first assumed the role of executive director of the Coalition for Networked Information (CNI), he said: “As a community, we face enormous but often confusing opportunities that can be addressed only by working together on a national and international basis, and I will work to ensure that CNI continues to be a powerful vehicle for sorting through the confusion, fostering dialog, and engaging the opportunities before us.”<sup>1</sup> That is what he has done, with immeasurable impact and success!

As we reflect on his 28-year tenure, it appears to us Clifford has pursued those goals less like the chief executive officer of an organization, and much more like the




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conductor of a global orchestra of librarians, technologists, publishers, and futurists. Somehow, with no self-promotion or fanfare, Clifford has encouraged a diverse collection

of professionals to make incredible music together. As in the case of a conductor, we cannot accurately measure his contributions or know what the music would have been like without him, but we have no doubt that his impact has been immense. The contributions in this special issue affirm that fact. In our entry, we will share the ways that Clifford has encouraged and helped us to deliver our small part of the progress of scholarship, research, and learning as we have faced these "enormous but often confusing opportunities."

Both of us have known Clifford for a long time, and so our reflections here should not be regarded

as objective. We cannot describe our experiences without highlighting Clifford's personal qualities and the way he has connected and sustained important ideas through relationships he nurtured with people over many years. That is part of his legacy and in our opinion an important factor in how his leadership has had such enormous impact.

### JSTOR and ITHAKA

We come to this discussion from the perspective of our work at the Mellon Foundation, JSTOR, and ITHAKA from 1993 to the present. JSTOR now has more than 13,000 colleges, schools, and government agencies from around the world licensing its resources.

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With hundreds of millions of downloads of journal articles and books every year, it has become, for all practical purposes, a basic infrastructure for scholarly research and academic learning. But that was not always so. In its early days, none of the infrastructure we now take for granted existed. As we will try to highlight in this article, Clifford played an important role in focusing attention on important enabling technologies that were necessary

to support the transition to reliance on network-enabled digital resources. Both through direct intervention and through his leadership of CNI, Clifford played a seminal role in enabling enterprises and projects like JSTOR to exist and eventually to thrive. We imagine that Clifford has played a similar enabling role for many other projects, initiatives, and work like ours.

In the early 1990s, there were no commercial Internet service providers, and few people had network access. Although colleges and universities had Internet connections—and some faculty and students did use email and could transmit data—these were fledgling notions used mostly by the specialized few. JSTOR was conceived to reduce



capital and operating costs associated with storing journal volumes while dramatically improving their usability. It was, to use modern parlance, moving the back issues of journal literature “to the cloud.” Instead of individual libraries storing and maintaining long runs of journal volumes on shelves for local access, a shared investment in a faithful replication of the complete record of the original journals could serve scholars and students all over the world. This represented a fundamental transformation in how such content could be cared for and accessed, and it promised an approach to the long-term stewardship of content that was both better and less expensive.

To realize those benefits, however, required cooperation among institutions to invest in and build infrastructure that in many ways transcended individual institutional self-interest. For the broad system-wide impact to be realized, financial models needed to be established to ensure that shared services could be sustained on an ongoing basis. Kevin first met Clifford in 1996 during negotiations over support of JSTOR when Clifford was at the University of California Office of the President. Clifford was a member of a University of California (UC) system committee charged with engaging with JSTOR, among other new digital initiatives. He played a critical mediating role during sometimes contentious conversations between JSTOR and the leadership of what became the California Digital Library. Clifford’s interventions ultimately helped craft an approach that enabled institutions in the UC system to support JSTOR. It was critical for JSTOR to have that support at that early stage, both financially and for its credibility. Clifford’s engagement and intervention demonstrated his ability to see the systemwide impacts of new technologies in an objective and disinterested way.

## CNI

With his ability to maintain objectivity and a prophetic understanding of technological developments and their potential long-term impact, Clifford was perfect for CNI. He saw long before others that infrastructure would be needed to enable the development of new forms of scholarship, research, and learning at the intersection of technology and education. For example, at his first meeting as CNI executive director in the spring of 1997, he highlighted the need for authorization and authentication infrastructure in his meeting roadmap. He wrote that “authentic-

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tion and authorization is emerging as a central issue, and we need your participation in developing these issues.”<sup>2</sup> This technique was characteristic of Clifford’s approach; he would highlight an important need and appeal to those in the community to address it. He would then seek out and attract projects and leaders who had experience with the issue and give them a platform at CNI to engage the community. In the background, he would make time for a meeting, a casual drink, or a series of conversations to help encourage progress. Such gatherings often created opportunities for these leaders and innovators to collaborate and develop workable and sustainable solutions.



For areas of particular importance, Clifford would lead an ad hoc group or task force to tackle the problem. He did so with authorization and authentication, which led to the CNI authentication initiative and the white paper on authorization, authentication, and access management. Clifford and CNI provided the venue for the development of many of the services that emerged to facilitate access, such as Shibboleth and OpenAthens. Over the course of his long tenure, Clifford and CNI have had similar impact on the development of many components of scholarly communications infrastructure, including model licenses, digital object identifiers, standards for reporting usage data, and institutional repositories, among others. Clifford's CNI meeting roadmaps over the years are a chronicle of the advance of the technologies on which our community depends.

### Digital Preservation

One infrastructure challenge of particular interest to Clifford over the course of his career at CNI has been digital preservation. It has been a thread woven through his priorities since he first assumed the leadership role until today. Clifford recognized that for electronic resources, there was no natural assurance that access to content would be preserved for future students and scholars. Not only are digital resources less stable due to the continuous and rapid evolution in media types and the software systems designed to access them, but also the traditional protections offered by the purchase of content by libraries do not exist in the networked environment. Libraries owned and controlled print materials and therefore could make decisions about their long-term care. For licensed digital materials, however, content was delivered on the network from a centrally managed service. Access could be shut off by the publisher, or the publisher could go out of business. How could that access be assured in the future?

At ITHAKA, we developed Portico, a service that offers long-term preservation of journals, books, and digitized collections. Over 1,100 publishers now include their content in the preservation archive of more than 147 million items, which is supported

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by nearly 1,300 libraries. The Portico service could not have been established without Clifford's advice, encouragement, tough questions, and support. He provided a platform for discussion of the general topic of digital preservation on numerous occasions over the years and helped to establish digital preservation as a community imperative. More specifically, Clifford gave JSTOR and Portico the opportunity to update the CNI community at a

series of meetings from 1999 through 2003. He could not have been more instrumental in helping to make the service a reality.

While Clifford was promoting JSTOR and Portico, he provided similar support to the LOCKSS (Lots of Copies Keep Stuff Safe) Program, a complementary digital preservation initiative that approached the challenge in a different way. Many people saw these two initiatives as competitive, and sometimes it felt that way, but Clifford did not seem to see things that way. Instead, he kept his objective focus on the needs of the community and service to scholarship. Given the time and energy Clifford has devoted

over the course of his career to digital preservation, it is no coincidence that at his last meeting, CNI gave the Paul Evan Peters Award, which acknowledges visionary work in the advancement of scholarship, to the cofounders of LOCKSS, Victoria Reich and David Rosenthal, for their work on that important topic.

Clifford was a strong advocate for digital preservation services, and he also devoted himself to ensuring that those services, once developed, stayed on the community's agenda. For example, Roger worked closely with Clifford on the 2011 National Science Foundation (NSF) Blue Ribbon Task Force for Sustainable Digital Preservation and Access, an effort to study the economics of digital preservation and ensure that it extended into new realms of cultural production.<sup>3</sup>

### International Collaboration

Another important element of Clifford's original commitment to the community when he assumed leadership of CNI was that he would work on an international basis. He has fulfilled that commitment many times over, serving on countless international and national committees and task forces. But one relationship we personally witnessed directly was the collaborative relationship he built and nurtured between CNI and Jisc, a nonprofit organization in the United Kingdom (UK) that provides network and IT services and digital resources to higher education. For more than 20 years, CNI and Jisc have jointly sponsored a biennial meeting in the UK that brings together leaders to share important knowledge about evolving research practices in the United States, UK, and Europe. The CNI-Jisc relationship is emblematic of the way that Clifford has served as a catalyst for making things happen. The meetings between the two organizations not only addressed the important concerns of the day, but the gatherings also established important relationships between CNI members and such Jisc leaders as Lynne Brindley, Malcolm Read, Dave Cook, and Norman Wiseman. The trust built through the development of these relationships, even friendships, facilitated alignment and coordination in large-scale investments at an important and transitional time in the use of scholarly resources. The collaboration between CNI and Jisc continues to be a valuable international bridge.

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### Surveys of Educators and Students

Yet another area of Clifford's ongoing focus at CNI has been to monitor the evolution in the community's use of digital resources and its implications. ITHAKA provides research and advisory services through Ithaka S+R. S+R first sought to address critical needs of libraries and publishers, then soon expanded to assess the impact of developments related to online learning, credit transfer, and other topics in educational transformation. Some of our original work was in surveying faculty members to learn about their preferences and behaviors, a project that had its roots in a JSTOR-based study first conducted in 2000.





As we developed our efforts to survey and conduct qualitative studies of faculty members, librarians, and students, Clifford was a strong ally and advocate for the work. CNI's program plan regularly featured a heading of "Transforming Organizations, Professions, and Individuals."<sup>4</sup> Clifford recognized the importance under this heading of ensuring that universities and their libraries understood how practices and perspectives were evolving. As we expanded this work, we have helped hundreds of libraries engage with their users through cohort-based research studies and reexamine their approaches to teaching, research, and providing support for data-driven methodologies. We have also supplied executive guidance on library leadership issues, investigated key strategic and infrastructure issues facing scholarly publishing, and examined funding and policy challenges facing the academic research enterprise. Most recently, at the spring 2024 meeting, Clifford encouraged us to present data and analysis from usage of JSTOR's generative AI-enabled research tool to help build awareness of how these new technologies impact faculty and student behaviors. As we have pursued this work, Clifford has served on project advisory committees, provided private counsel again and again, and brought our findings to the CNI community through his widely read listserv and at CNI membership meetings.

### Creating Connections

Clifford made a transformational impact on the evolution of our sector through a combination of strong personal relationships and a willingness to support the issues he

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viewed as important without fear or favor. Many members of the community know Clifford through the wisdom he brought to the CNI community through his insightful and beautifully organized

keynotes that he shared, from almost no notes, to the CNI community. Clifford has the gift of weaving a compelling narrative that draws the community together even while focusing on future issues that may be discomfiting, if not downright disruptive.

His willingness to be present, seemingly globally and constantly, made a tremendous difference. His grueling travel schedule ensured that he was plugged in to developments from Hawaii to Estonia and almost everywhere in between. His campus visits helped draw connections with librarians, IT and research professionals, and many others. But for us, what we treasure most is the time we shared and what we learned when Clifford dropped by the Ithaka offices, or met us at an Irish pub, or a Penn Station bar, during his travels through New York City.

Clifford has a way of conveying interest in and respect for the work one is doing. His fascination with the latest developments affecting our community is genuine and

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gently infectious. Through his balanced and intelligent vantage point, he is the kind of person you do not want to disappoint; you want to deliver. In that sense, we have spent

our careers working for Clifford. We have reveled in his interest in our work and his enthusiasm not only for what we have accomplished but also in our shared interests outside of work, whether that be our frustrations with the airline industry or geopolitics. He has been both an invaluable mentor and a cherished friend.

Bill Bowen, the late president emeritus of the Andrew W. Mellon Foundation, used to say that it is best to leave “while the band is still playing.” As Clifford embarks on his next chapter, he leaves a band that is not only still playing but is playing pieces he arranged and conducted. That band will continue to serve our community for many years to come. That is infrastructure.

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## Notes

1. Coalition for Networked Information, “CNI Appoints Clifford Lynch as New Executive Director,” May 1997, <https://www.cni.org/wp-content/uploads/2024/09/CNI-Appoints-Clifford-Lynch-as-New-Executive-Director.pdf>.
2. Coalition for Networked Information, “Fall 1997 Task Force Meeting ‘Roadmap’ by CNI Executive Director Clifford Lynch,” <https://www.cni.org/>.
3. Blue Ribbon Task Force on Sustainable Digital Preservation and Access, “Sustainable Economics for a Digital Planet: Ensuring Long-Term Access to Digital Information,” 2010, <https://worldcat.org/arcviewer/1/OCC/2011/11/08/H1320769366004/viewer/file2945.pdf>.
4. Coalition for Networked Information, Program Plan Archive, <https://www.cni.org/program/program-plan-archive>.



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