CNI Executive Roundtable Report

International Tensions and "Science Nationalism" in a Networked World: Strategies and Implications

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Coalition for Networked Information www.cni.org

Background

The Coalition for Networked Information (CNI) Executive Roundtable that took place as part of the CNI Fall 2020 Virtual Membership Meeting examined the collision between developing international tensions and science nationalism on one side, and trends towards global, network-based collaboration and scholarly communication, particularly as driven by the adoption of open science practices, on the other. The call for participation (see Appendix I) gives more detail on the range of prospective topics as well as some background references. The implications of these trends for the US research enterprise and the evolution of the system of scholarly communication were a key focus of the discussions, which took place over the course of two convenings (with different attendees) and that in aggregate included over 40 participants representing 18 member organizations from across sectors (higher education, publishing, library associations, funding entities, cultural heritage and education research organizations, and consultants). Representatives were primarily from organizations based in the United States (US), but also included some that were multinational or based outside the US.

CNI executive director Clifford Lynch opened each session by describing the policy environment and related actions by the US federal government and other actors designed to control access to science and technological knowledge that is viewed as having strategic commercial and/or national security implications. The potential ramifications of some of these measures range from structures and practices in the scholarly communications system, through research information technology (IT) policies and security, to place constraints on foreign nationals (including students), and implement new restrictions on how federally funded research is conducted. He noted especially that, unlike previous waves of global tensions involving science and technology, current developments are taking place within a global networked environment that supports research collaborations, scholarly communication, data sharing, distant students, and network-based attacks without much regard for borders. We are also in a world where there has been much more inter-dependence—everything from large numbers of students from abroad to complex international industrial supply chains—than was the case during, say, the Cold War period.

Prevailing Themes

CNI's goal in holding this Roundtable was to explore developments related to international tensions and science nationalism among member organizations, to understand the challenges universities and other related organizations are encountering, the strategies they are putting into place, and the scenarios that they are preparing for (or discounting) in the coming years. Ways in which the current climate and related events may be reshaping the scholarly communication landscape are of particular concern to CNI. Through these conversations, we sought to better understand what is happening currently, to explore likely scenarios for the coming years, and to consider how best to position our institutions and the broader system of scholarly communication to respond to these developments.

Of the two Roundtable convenings, one was populated almost entirely by teams from major US research universities, comprised, typically, by some combination of the chief information officer, the university librarian, and the chief research officer. What we heard from these US universities was relatively homogeneous; here are the key themes.

Among the higher education institutions represented at the Roundtable, managing evolving US federal agency policies and regulations has dominated the attention of campus research offices and their partners, and is demanding growing resources and increased attention from senior institutional leadership. The numerous challenges include:

- Complying with regulations that may be in conflict with institutional values and/or mission (e.g. openness, global relationships).
- Making decisions and implementing policies and government recommendations when information about threats and vulnerabilities is unclear and lacking in detail (e.g. what risks are being protected against), and the extent of the threats is also unclear (consider, for example, the various Chinese Talents Plans, which incentivize "individuals engaged in research and development in the United States to transmit the knowledge and research they gain [in the US] to China in exchange for salaries, research funding, lab space, and other incentives."[1]).
- Limited details about security standards and how to implement them, although this seems to be improving recently. The landscape of information controlled or regulated by the government is rapidly becoming more complex. Along with the historical collection of technologies controlled by ITAR (International Trafficking in Arms Regulations) and familiar information management regimes such as the Health Insurance Portability and Accountability Act (HIPPA), we now have a range of Controlled Unclassified Information (CUI) resurfacing—the NIST 800-171 guidance and the various levels of the Cybersecurity Maturity Model Certification (CMMC) are highly relevant here (EDUCAUSE is a good source for tracking relevant developments in this area). Roundtable participants discussed these developments but the technical specifics were not explored in detail, and may deserve subsequent examination at CNI-hosted events.
- The lack of a comprehensive list of institutions with which the US federal government restricts or prohibits collaboration—typically, organizations are informed of restrictions as the approval process is underway and they are expected to assess many of these risks independently.
- Demands for researchers and their institutions to disclose a variety of potential conflicts of interest or commitments or foreign engagements, but with a lack of clarity about what will be done with the information they are required to disclose.
- Ambiguity about what government agencies and funders expect of individual investigators and what is expected of institutions doing "due diligence" on disclosure attestations made by their investigators. For example, some institutions are now carrying out or contracting for "open source" intelligence investigations of faculty in foreign countries (typically China), at considerable

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[1] See Senate Committee on Homeland Security and Governmental Affairs, *Threats to the U.S. Research Enterprise: China's Talent Recruitment Plans*, 2019, https://www.hsdl.org/?view&did=831878.

expense, in order to confirm that disclosures are comprehensive. Potential institutional liability is very unclear, and there are also important reputational (in addition to legal) liabilities that need to be assessed.

- Concerns about corporate research collaborations and out-licensing of research results: with whom universities and their investigators can collaborate, under what terms, and what needs to be done to protect data that is produced as part of these collaborations.
- Conflicts between the evolving norms about research reproducibility in scholarly disciplines and strongly supported by research funders on one side, and controls and restrictions on data sharing and analysis systems and software on the other.
- There is enormous demand to inform faculty about the developing situation, and to engage faculty in discussions about appropriate institutional norms in the context of these government demands and pressures.
- US institutions have become much more sensitive and nervous about any kind of collaboration agreements involving China, in particular, and longstanding and sometimes rather informal agreements are now being escalated to the institutional general counsel or the president's office, where they are being reviewed, revised and formalized (or perhaps canceled).

Security concerns are particularly acute in the current climate. Note that these concerns, of course, are not *necessarily* related to science nationalism issues, though they can certainly be used as tools to support science nationalism and espionage. Several institutions reported significant investments in implementing multi-factor authorization on all systems, centralizing computation systems and encouraging researchers to access services and resources via better-secured and managed centralized systems. There is considerable concern over security vulnerabilities, perhaps especially in researcher-managed systems, that could allow for further exploitation via lateral movement within institutional infrastructure or even national research infrastructure components. Nation-state aligned threat actors stealing research-related data and "ransomware" attacks were also discussed as particular issues of concern. Interestingly, fears about subtle corruption, as opposed to theft or destruction, of research data, weren't raised.

The ability to effectively support students, faculty, researchers and collaborators worldwide has grown progressively more challenging. While abroad, US researchers and students increasingly face barriers to data and tools provided by their home institutions due to access blocks enforced by some host countries. For students enrolled in US-based institutions doing coursework abroad, restricted access to their home institution's educational resources presents remote learning challenges; several participants commented on the potential risks and liabilities associated with some strategies for circumventing host country policies that block specific resources, such as virtual private networks, and their concerns with subjecting their students to such risks.

A critical problem involves securing required permission and documentation for extended work and study by foreign nationals. There already exists a backlog of such cases; for example, we heard about admitted students from the fall 2019 term who have yet to receive visas, and neither have they been declined permission to enter the US. The pandemic and related international travel restrictions have escalated the situation to almost surreal levels; many institutions are now trying to support students stranded

abroad in literally 80 or 100 countries as they attend online courses. One important point to consider is that, in the current environment, a university's decision to admit a foreign student (or perhaps even to hire a foreign faculty member) is *not* predicated on the ability of that person to get a US visa, which historically has been a key mechanism for the government to control who is allowed to study what, or to participate in what research.

Staff retention issues resulting from the difficulty of sponsoring green card holders is another byproduct of the foreign status documentation problem. Also related: some participants reported a chilling effect on recruitment of and/or research collaboration with Chinese nationals and institutions. More broadly, there is deep concern about the continued ability of US research universities to effectively compete for the best talent worldwide, both for graduate students and for faculty.

Finally, once students, visiting scholars, or faculty get to the US, there are questions about what research projects they are allowed to participate in, and under what terms. This is a growing area of concern with many implications—for example, the ability of faculty with grants to use grant-funded positions to help support PhD students.

To some extent, the current increase in online activity due to the global pandemic is overriding historic visa problems and travel restrictions. Nearly all scholarly conferences and meetings have moved to a virtual environment since spring 2020, allowing for a large increase in international participation rates, and, as such, nation-state control over participation in such events has been greatly undermined.

In addition to the uptick in organized virtual events, we also heard that some labs and research teams are using this opportunity to re-establish connections with former lab partners and collaborators now residing outside the US, sometimes reincorporating them into existing projects. The increased tolerance for remote research connections has allowed for the exploration of new, long-term working affiliations, though it was also noted that virtual connections tend to be more shallow than those that can be, or already have been, forged in person. More broadly, virtual tools that have become ubiquitous in the pandemic era have allowed connections and collaborations to continue or to be renewed, but most of these rely on social capital that was built up during the era of in-person encounters; they are much less effective in *establishing* connections or collaborations.

Scholarly Communications Systems and Other Closely Related Issues

While there was of course some commonality of themes between the two Roundtable convenings, the second convening, which included non-US research universities, publishers, foundations, museums, and other organizations that were not major US research universities, focused much more intensively on issues related to the scholarly communications system. Many of these issues weren't discussed at any depth in the first convening.

There is a very broad-based effort to restructure the terms of open access (OA) publishing across the globe through so-called "transformative agreements" and efforts

such as the European Union-based Plan S, which stipulates (among other things) that scientific publications resulting from publicly funded research be published in OA journals or platforms. Currently there's a rough and still tentative alignment between the US and Europe on this effort; in particular, there is some ambiguity about the extent of support by US federal funders, as distinct from research universities (who have a wide range of views), for the Plan S style approach. Given the scale of publishing by Chinese researchers, it seems likely that unless China supports this restructuring effort, the economics globally will be at best problematic. While a few years ago some Chinese scholarly organizations seem to have expressed conceptual support for both this kind of OA and related initiatives about open research data, it's unclear where this commitment now stands, or how it may relate to other emerging Chinese scholarly publishing strategies.

"Shadow library" websites such as Sci-Hub that provide free access to pirated commercial journal articles were also discussed, along with the effort by some parties to connect their growth to a concerted effort to compromise university student and faculty credentials that can then be used for other network attacks. Interestingly, while many participants agreed with the notion that Sci-Hub must have tacit if not explicit nation-state backing, suggestions seem to be that such support is *not* originating in China, but perhaps rather with groups aligned with Russia and/or Iran.[2] It seems remarkable that we do not have more clarity on what's going on here.

China is rapidly becoming the largest producer of scholarly articles in many key scientific areas. Many of the publications appear in Western journals, including the most prestigious. Many others appear in Chinese scholarly journals, in some cases in English and in some cases in Mandarin; it appears that the actual massive scale of the existing Chinese publishing system is not well understood.[3] The group discussed a series of questions about whether more or less publishing was occurring in Chinese journals as opposed to in Western journals, and to what extent China was trying to build up a national scholarly publishing infrastructure (that might ultimately also be used by much of the rest of the world, particularly the Global South). Some recent policy announcements seem to suggest that China is de-emphasizing the importance of publishing in very high prestige Western journals; interestingly, this is being cast as consistent with the efforts of Western and global open science advocates to focus assessments of scholarly impact on quality rather than quantity, and to de-emphasize measures such as the impact factor of the journals that results are published in. Note that to the extent that China is, or may be, investing in a national publishing infrastructure, this implies shifting investment away from contributions that might support a global restructuring of the Western scholarly publishing system (discussed above) towards new OA models.

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[2] See, for example, material available on the Scholarly Networks Security Initiative website, www.snsi.info. Also of interest: Rick Anderson, "Watch Out for the Silent Librarian: An Interview with Crane Hassold," *The Scholarly Kitchen*, Jan. 27, 2021, https://scholarlykitchen.sspnet.org/2021/01/27/watch-out-for-the-silent-librarian-an-interview-with-crane-hassold/.

[3] One participant shared data that claimed that of some 5000 STM journals in China, less than ten percent are in English.

There was also discussion about whether the Chinese journal system was moving towards greater use of Mandarin or English, with some consideration of the extent to which Mandarin publishing might help to keep engineering and applied science knowledge within China, much the same way that (for example) publication in Japanese-language journals in the 1980s helped to keep engineering knowledge in Japan for some years. There is some anecdotal evidence that publication in Chinese journals is shifting from Mandarin to English but participants were not aware of good comprehensive data on this. Some suggested that rapidly improving machine translation capabilities today would render language barriers much less significant than they have been historically.

Many participants felt that they did not have a good grasp of the hard data related to the evolution of the international scholarly journal publishing system. There was some sentiment that we need better understanding and assessment of the available resources, and of their scope and quality, and, perhaps beyond that, that there is a need for a systematic data collection program (though it's unclear who would fund this). Too many decisions are being driven by anecdote and limited observations by individual organizations. Separate from data, there is also the challenge of understanding shifting and evolving policy *intentions*, particularly in China. The current escalated tensions make this particularly difficult, as there is less mutual trust, eroding transnational personal relationships, and hence more doubts about what to believe.

Interestingly, we heard little evidence that US research libraries are tracking these developments in the international scholarly communications system. We heard nothing about US research libraries trying to acquire Chinese scholarly journals, or to translate or summarize the Mandarin publications into English to serve US scholars and commercial enterprises.

We also learned that some US government entities, such as the national labs, are tracking patterns of publication in various areas. This is not surprising, but it is interesting that it's not occurring on a broader basis, and that there seems to be no provision for collaboration or information sharing in this area.

An additional aspect of the geopolitics of scholarly publishing and OA is worth noting. Some parts of the world, most notably Latin America, have developed very extensive OA publishing systems based on OA repositories, with very different economic models; COAR has been very helpful in illuminating this model, and trying to ensure that it has a place in the discussions of evolving OA strategies,[4] though there are clearly tensions between this and the approaches advocated by the major western publishers and at least some of the proponents of Plan S and similar programs. The scholarly publishing infrastructure is still very much in flux in other large regions of the Global South. It could, perhaps, be subsumed into Europe's OA approach (and probably America's); it might find its own way. Or, if China develops and subsidizes its own scholarly publishing apparatus, it might well find a home there, with all the implications one would expect for soft power diplomacy and the development of alliance blocks (think

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[4] See materials related to Latin America on the COAR website at *LA Referencia*, https://www.coar-repositories.org/tag/la-referencia/.

about this in conjunction with the Belt and Road Initiative, the Chinese government infrastructure development strategy).

While many US universities have a history of aggressively protecting intellectual property arising from research by their faculty (most notably through patent filings) and licensing it commercially under the provisions of the Bayh-Dole Act (though this is certainly not universal, and indeed norms vary from discipline to discipline—US universities have also made massive amounts of open source software available, for example), we heard from some non-US-based university participants that their institutions operate under very different assumptions. These non-US universities have been less focused on protecting their research outputs from foreign entities. In cases where cross-national relationships are a cornerstone of institutional programs, foreign students continue to be welcomed and heavily recruited, both for the global perspective they bring to campus, but also because they represent an important source of revenue. Furthermore, with respect to global science initiatives, here there are indications to suggest that some Western countries are trending towards increased openness and accessibility, particularly with respect to certain challenges where global cooperation is deemed particularly necessary, such as climate change and covid-19.

There are several issues that are of vital importance to the research enterprise but which also have much broader impact for industry and beyond. Some of these apparently haven't received much visibility. One that was raised in our discussions concerned Chinese government attempts to block or censor GitHub, which functions as essential infrastructure for open source development efforts, leading to the development of a Chinese alternative, called Gitee.[5] Such efforts have encountered resistance from some Chinese programmers. Notably, this was news to most of the participants in the roundtable. Developments here will be important to track carefully; it represents another thread in developing an alternative to the Western-based software application ecosystem (Amazon, Google Search, payment systems, etc.). This is a much more complex perspective to the splintering of the Internet than the overly simplistic emphasis on the "Great Firewall of China" that dominates many narratives.

Concluding Thoughts

While much of the concern from US-based higher education institutions focused on the confusing and unclear current situation which has become very resource intensive and fraught with various forms of liability and risk, as well as on concerns about the ways in which this situation may undermine the ongoing health of the US research enterprise (such as the ongoing ability to recruit talent globally), some very high-level public policy and geopolitical strategy questions lurk in the background. For example, since World War II, the US has invested heavily (and perhaps almost uniquely among nations) in fundamental research, which tends to be global and non-proprietary. This fundamental research underpins, precedes, and supports more applied and proprietary

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[5] See Meaghan Tobin, "China wants to build an open source ecosystem to rival GitHub," *Rest of World*, Jan. 19, 2021, https://restofworld.org/2021/china-gitee-to-rival-github/, and Rita Liao, "China is building a GitHub alternative called Gitee," *TechCrunch*, Aug. 21, 2020, https://techcrunch.com/2020/08/21/china-is-building-its-github-alternative-gitee/.

research, engineering, and technology development that translates into commercial advantages and national security/military capabilities that are established by nations across the world; in a sense, they take advantage of the US basic research investment as "free riders." Discussions are emerging along at least two lines: how to reduce this "free riding" (which is probably hopeless), and the balance of US funding between basic vs. applied research. Another fundamentally new development is that while commercialized technologies, or technologies adapted to national security or military purposes, have long been targeted for systematic collection by intelligence operations (and particularly those initiated by China), we seem to have entered an era where, for the first time, fundamental research is being targeted for similar systematic collection, particularly in advance of the normal functioning of the scholarly communication system to make such knowledge publically and globally available. The system for managing fundamental research isn't designed to deal with this, which is part of what's generating the current stresses.

Note that while much of the discussion specifically addressing science nationalism and related policies was about China, other countries, notably North Korea and Iran, were discussed as problematic threat actors trying to steal or corrupt research information, or simply extort money (e.g. ransomware). Interestingly, Russia was also mentioned regularly, but largely within the historical context of the Cold War, which seems curious considering the massive emerging SolarWinds cybersecurity debacle, which is being widely attributed to Russian-affiliated groups.

In reflecting on the discussions, one participant observed how geopolitical and national security issues, historically, have influenced research priorities in the humanities and social sciences, noting the impact of the Cold War on area studies, including language programs, and how those priorities changed, many of them disappearing entirely, following the end of the Cold War. Language competency and translation issues, for example, have been a long-standing concern that changes depending upon policy concerns. With respect to nationalized publishing, however, the issue here is not just a language issue, but it has to do with hegemony and the recognition and credit for local scholarship. Furthermore, with the advances in machine translation, language issues may diminish in importance.

More broadly, while the discussions focused on science, technology, and engineering, international tensions ripple into many other areas. There are sensitive issues involved in humanities and social sciences, and topics within these disciplines that are "off limits" for various nations (think political science, sociology, history, anthropology, art history and many other disciplines). There are questions about key cultural, artistic, and archeological sites, and access to them, and how materials will be shared with the rest of the world. We should not overlook these developments, which seem to be ignored by current government policy considerations. As a case study here, Cambridge University Press (not represented in these discussions) has faced considerable pressure to redact articles related to Tiananmen Square as it licenses its social science and humanities journals to China, and ultimately yielded to such pressure.[6] This was not discussed, but

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[6] See Danica Kirka and Louise Watt, "Editor says Cambridge University Press to restore articles," *AP News*, Aug. 21, 2017, https://apnews.com/article/695dda3faab8450c9d05f2f720edcf24.

little seems to be known about how widespread such "accommodations" are, or where they are being demanded.

It's worth trying to consider some of these issues from the perspective of emerging nations that may also be dealing with a long history of colonialism and exploitation. Talent recruitment by the US represents a "brain drain" from those nations, for example, and it's not unreasonable for them to think in terms of trying to repatriate talent that has been "stolen" by the West. This is a perspective that's all too easy for institutions in the US to overlook.

Postscript

Two highly relevant events occurred following the December 2020 Executive Roundtables, both suggesting that federal policies and guidelines regarding research practices with foreign entities will generally continue into the Biden administration:

- In mid-January, during the waning days of the Trump administration, the report "Recommended Practices for Strengthening the Security and Integrity of America's Science and Technology Research Enterprise," was released by the Subcommittee on Research Security, Joint Committee on the Research Environment (JCORE) of the US National Science and Technology Council (online as part of the archived White House site: https://trumpwhitehouse.archives.gov/wp-content/uploads/2021/01/NSTC-Research-Security-Best-Practices-Jan2021.pdf). This is an interagency report that we think reflects a well-established consensus among, for example, the US federal funding agencies and perhaps the US law enforcement and intelligence communities. It begins to supply at least some additional specificity around the government-defined issues identified in the Roundtables. The report was accompanied by the National Security Presidential Memorandum 33, issued January 14, 2021 (https://trumpwhitehouse.archives.gov/presidential-actions/presidential-memorandum-united-states-government-supported-research-development-national-security-policy/).
- On Jan. 26, 2021, the University of California Office of Ethics, Compliance, and Audit Services hosted the research security virtual symposium Protecting the Research Enterprise—Transparency, Integrity & Reciprocity, in coordination with the US Federal Bureau of Investigation (FBI) to, in part, "develop a balanced understanding of threats to the American research enterprise and the collaborative research environment." One of the very strong messages from this symposium was that there was expected to be broad continuity between the Trump and Biden administrations on these science nationalism issues, and that the government believes there is a serious problem occurring at significant scale. To the best of our knowledge there is no recording available of this symposium. More details about the meeting were shared in a posting to the CNI community about the event (https://www.cni.org/news/research-security-virtual-symposium-january-26-2021).

CNI Executive Roundtables bring together a group of campus partners to discuss a key digital information issues and their strategic implications. The roundtables build on the theme of collaboration that is at the foundation of the Coalition; they serve as a forum for frank, unattributed intra- and inter-institutional dialogue on digital information issues and their organizational and strategic implications. In addition, CNI uses roundtable discussions to inform our ongoing program planning process.

The Coalition for Networked Information (CNI) is a joint program of the Association of Research Libraries (ARL) and EDUCAUSE that promotes the use of information technology to advance scholarship and education. Over 200 institutions representing higher education, publishing, information technology, scholarly and professional organizations, foundations, and libraries and library organizations, make up CNI's members. Learn more at cni.org.

Appendix 1

CNI Executive Roundtable
Call for Expressions of Interest
December 14, 2020[7]
12:00-2:30 PM ET

International Tensions and "Science Nationalism"
in a Networked World: Strategies and Implications
Deadline: Nov. 16

Background

Both the United States and China are making policy moves towards what might be called "science nationalism" and, perhaps, a new cold war. This science nationalism is a complex combination of policies, objectives, and initiatives that seek to both lead in and control access to science and technological knowledge that are viewed as having strategic commercial and/or national security implications. The potential repercussions range from the structure and practices in the scholarly communications system, through research IT policies and security, to constraints on foreign nationals (including students), and new restrictions on how federally funded research is conducted (see the December 2019 JASON report *Fundamental Research Security*, funded by the National Science Foundation, https://www.nsf.gov/news/news_summ.jsp?cntn_id=299700, and the links there, as well as a talk by Samuel Howerton of the National Science Foundation, presented at the National Academies Forum on Cyber Resilience, summer 2020, https://livestream.com/accounts/7036396/events/9243284/videos/209525364).

A valuable summary perspective on the situation between the US and China, and its implications for science and scholarly communications, by Roger Schonfeld of Ithaka S+R was published just as the invitation to this Roundtable was being finalized. See https://sr.ithaka.org/publications/global-science-and-the-china-split/.

These developments are taking place in a much more networked world than previous post-WWII waves of science nationalism (which might be seen as including the Cold War spanning the late 1940s to the 1990s, or the economic and technology tensions with Japan in the 1980s). In addition, today there is seemingly a much longer list of key dual-use (commercial and national security critical) technologies than in earlier periods, and perhaps the gap between fundamental scientific discoveries and applications has narrowed in some areas. See, for example, Katy Stech Ferek, "U.S. Moves to Protect Technologies Considered Critical to National Security," *Wall Street Journal*, updated Oct. 15, 2020, https://www.wsj.com/articles/u-s-moves-to-protect-technologies-considered-critical-to-national-security-11602752400, and the government report referenced in that article (not yet released apparently as of this writing). Note that while

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[7] Additional dates may be added depending upon demand.

the strongest tensions seem to be between China and the US, science nationalism and issues about research security are certainly not limited to these two countries.

What's strikingly different in the current environment is that so much is happening in the global networked environment: scholarly communication, distant students, research collaborations, data sharing, and network-based attacks.

It is worth noting that, at least in the US, there seems to be substantial bipartisan support for this broad policy direction; depending on the outcome of the November 2020 election, specifics may very well change, but there's good reason to believe that the research and higher education communities will have to address these developments for some years to come.

This Roundtable will seek to explore these developments, to understand what our universities and other research institutions are currently encountering, the strategies they are putting into place, and the scenarios that they are preparing for (or discounting) in the coming years. A particular concern for CNI is how this reshapes the system of scholarly communication, and we believe that many of the diverse CNI member organizations that are involved in various aspects of the scholarly communication system will have insights that will help us to understand these implications.

We want to be clear that CNI is not taking a political stance on these developments and the primary purpose of the convening is not to debate their merits; our goals in organizing this Roundtable are to understand what *is* happening, explore likely scenarios for the coming years, and to consider how best to position our institutions and the broader system of scholarly communication to respond to these developments.

Some specific issues that we might discuss:

- China's national policy moves to build up a national scholarly publishing system, and to encourage its research community to publish using this system. It's valuable to consider this in light of historical policy in China, the open access and open science movements, and experiences from previous science nationalism episodes.[8] A specific point we might explore is if and how the library community

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[8] For some background on this, see (for example): Jie Xu, "Guest Post-How China's New Policy May Change Researchers' Publishing Behavior," *The Scholarly Kitchen*, March 3, 2020, https://scholarlykitchen.sspnet.org/2020/03/03/guest-post-how-chinas-new-policy-may-change-researchers-publishing-behavior/; Roger C. Schonfeld, "Global Science, China's Rise, and European Anxiety," *The Scholarly Kitchen*, Jan. 21, 2020, https://scholarlykitchen.sspnet.org/2020/01/21/global-science-chinas-rise-european-anxiety/; Tao Tao, "China Strives to Catch Up on STM Publishing: An Interview with Dr. Zong-Ming Cheng and Dr. Xiaofeng Wang," *The Scholarly Kitchen*, Dec. 2, 2019, https://scholarlykitchen.sspnet.org/2019/12/02/china-strives-to-catch-up-on-stm-publishing-an-interview-with-dr-zong-ming-cheng-and-dr-xiaofeng-wang/; Tao Tao, "Guest Post-The Emergence of Chinese STM Publishers: Threat or Opportunity? An Interview with Matthias Wahls," *The Scholarly Kitchen*, Nov. 19, 2019,

is making sure that these new national publishing systems are visible to researchers in the US (including language issues and the potential for machine translation). There is interesting history from earlier international tensions and competitions that we might learn from. Note also that this is happening as a very different and separate conversation is simultaneously taking place in venues such as COAR (The Coalition of Open Access Repositories) about how to produce a scholarly communications system that is much more equitable to what is sometimes called the "Global South."

- The implications of various US government policy initiatives dealing with sensitive but unclassified information and technologies, foreign nationals (including foreign students), and related areas, including controls on research data and software.

- New security measures that are being put in place on campuses to control sensitive materials such as grant proposals.

- Responses to the escalating external information security threats in this environment, and even understanding the evolving nature of these threats.

- Issues related to Sci-Hub and large-scale theft of licensed journal content by capturing credentials from members of the higher education community (see https://www.snsi.info/ and particularly the recording of their October 22, 2020 webinar "Cybersecurity Landscape: Protecting the Scholarly Infrastructure").

- Historically, controlling visas of various kinds (and, in some countries, authorization to travel abroad) has been an important tool in reinforcing and managing science nationalism efforts, with implications for admissions, faculty recruitment, and other areas. In contrast, today it is commonplace, particularly given the pandemic, to see universities with admitted and enrolled students scattered all over the world. The implications of these changes are very complex, and they include supporting this student diaspora (which we distinguish from foreign branch campuses or organized study abroad programs), particularly with information and computing resources.

- Scientific meetings and university symposia, seminars and colloquia have shifted to the network with very little or no barriers to worldwide participation. Are member institutions doing anything to track or control foreign participation in seminars and colloquia? Some institutions are making graduate classes "open" as they've been moved to Zoom – is foreign participation an issue here?

- How the group of "sensitive" scientific and technical areas is defined (and re-defined), by whom, and how institutions are viewing the boundaries of these areas.

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https://scholarlykitchen.sspnet.org/2019/11/19/guest-post-the-emergence-of-chinese-stm-publishers-threat-or-opportunity-an-interview-with-matthias-wahls/.

- The interplay between these developments and the established connections between the research community and the ecosystem of startups, venture capital and technology licensing that allows many discoveries to move to commercialization.

- The implications of the splintering of the Internet along national boundaries or blocks of allies (sometimes referred to as "splinternet"), the blocking of various network services and resources, and their implications for research, instruction, and the communication of scholarship, particularly in light of the student diaspora already discussed (see, for example, https://medium.com/cltc-bulletin/internet-fragmentation-beyond-free-and-closed-cb8b1dfcd16a).

- Finally, while the focus here is on science and technology, we should be mindful of the implications for the humanities and social sciences, and to recognize that a great deal of social science data and research have national security (and perhaps science nationalism) implications, and may want to touch on some of these implications.

Participants

Responsibilities in this area are often diffuse within universities. Certainly libraries, information technology and the office of research have strong interests in these matters; faculty and graduate student organizations, and groups responsible for security and privacy, student admissions and support, university presses and others may also have stakes in the discussion at some institutions. Some federal relations officers may have an interest in this conversation. Participation from non-university CNI members with insights into the developments in the scholarly communication system is also particularly welcome.

Any CNI institutional representative may apply to participate in this Roundtable, and either one individual or a team of up to three individuals who have different roles, e.g. a library director, a CIO, a head of research computing, or a chief research officer, can represent the institution. We particularly welcome the participation of such teams. If you would like to have more than three people participate please be in touch with us. In order to have an in-depth discussion, participation in the Roundtable will be limited to approximately 15 institutions; if there is sufficient interest, we'll offer additional Roundtables**.**

Cliff Lynch will moderate this session and provide some framing remarks, and then participants will have an opportunity to discuss issues with peers from other institutions. The Roundtables build on the theme of collaboration that is at CNI's foundation. We want to promote institutional dialogue and inter- and intra-institutional information exchange on digital information issues while informing CNI's planning process. We will disseminate a summary of the issues that emerge from the Roundtable, but in order to encourage frank discussion, there will be no individual or institutional attribution of statements without prior explicit permission from the relevant party.

Reports from previous Executive Roundtables are available:
https://www.cni.org/tag/executive-roundtable-report

To express interest in participating, please complete the form at:
https://cni.formstack.com/forms/cni_er_science_nationalism by end of day Nov. 16,
2020 (if more than one person per institution wishes to participate, please coordinate
and complete only one form). We will choose approximately 20 individuals for each
Roundtable session, using the criteria of position, experience, and balance of institutions
(type, geographic area, etc.) to determine who will attend. Our intention is to offer the
Roundtable ONLY on Dec. 14. If we receive a large response, we will consider offering
additional sessions on Dec. 16 and/or Dec. 17 (each with different participants).

We will notify you by Nov. 23 as to whether you have been accepted or whether you
will be on a waiting list for participation. We apologize in advance that we may have
to turn away some individuals who express interest. If you have any questions about
the Roundtable, please contact Diane Goldenberg-Hart at diane@cni.org.