

THE SHIFTING TECTONICS OF INTERNATIONAL COLLABORATION

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This Article builds upon the author’s 2010 article in the *University of Dayton Law Review*.¹ More specifically, this Article focuses on research management areas that have increased in relevance over the past fifteen years or are essentially “new” to the international research collaboration realm. Now, as then, the author writes about the importance of building international collaborations during this tectonic present and urges the reader to draw their

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¹ James J. Casey Jr., *The GUIRR International Research Collaborations Project: Towards a Greater Understanding of International Collaboration*, 36 DAYTON L. REV. 30 (2010).

own conclusions regarding international research, emerging issues and technologies, and their importance in the future.²

I. INTRODUCTION

International research collaboration remains a necessity despite the challenges to it at the present time. Why is international research collaboration important? The National Science Foundation (“NSF”) posits the following:

The benefits of principled international collaboration include:

- Enabling cutting-edge research that no nation can achieve alone.
- Training a robust science and engineering workforce capable of solving global problems.
- Allowing for significant contributions from international students and scholars to the U.S. research enterprise.
- Strengthening scientific and diplomatic relations.
- Leveraging resources, including funding, expertise and facilities.³

In addition to these benefits, all types of international research collaboration would further benefit from the themes outlined in their definition—cultural, social, and science, technology, engineering, and mathematics (“STEM”) disciplines. International research collaboration improves education at *all* levels. With growing domestic and global challenges, more education—not less—is needed. Research and education go together like hand-in-glove.

Humankind seeks to improve global conditions in every country, and advancing knowledge is a critical dimension to achieve that improvement. Anyone who denies or disputes the importance of international research does not understand how important international research has been in the post-

² The author co-presented a January 2025 GUIPRR webinar focused on the 2010 article and issues discussed elsewhere in this paper. See *International Research Collaborations: Revisiting Challenges, Progress, and Emerging Opportunities*, NAT'L ACADS., (Jan. 28, 2025), https://www.nationalacademies.org/event/44380_01-2025_international-research-collaborations-revisiting-challenges-progress-and-emerging-opportunities (on file with the University of Dayton Law Review).

³ *Research Security at the National Science Foundation*, U.S. NAT'L SCI. FOUND., <https://www.nsf.gov/research-security> (on file with the University of Dayton Law Review) (last visited Sep. 22, 2025). The negotiation of successful international research agreements is the first step in building successful collaborations. James J. Casey, Jr., *Negotiating Successful International Agreements*, RES. GLOBAL, Oct. 2010, at 18, 18–19.

World War II period.

The profession of research management and administration (hereinafter referred to as “research management” or “research managers”) supports efficient management of research.⁴ College professors, faculty, and researchers receive funding from outside sources (government, other universities, industry, foundations, non-profit institutions, etc.) and rely on research managers to support them so that the research objectives are met in an efficient and timely manner. For instance, in the United States, the U.S. Government is a significant funder of research, particularly basic research.⁵ However, the research posture of the U.S. Government is under retrenchment from the present administration, and the following months will show how deeply the U.S. research enterprise has been reduced. Nevertheless, research is a major reason why humankind has made major advances in living standards since the end of World War II.⁶

II. HISTORICAL BACKGROUND OF THE GUIRR INTERNATIONAL RESEARCH COLLABORATIONS PROJECT (2009–2018)

The Government-University-Industry Research Roundtable (“GUIRR”) International Research Collaborations project started in 2009, although the original discussions between GUIRR director Susan Sauer Sloan and the initial project co-Chairs (John Carfora and James Casey) started in fall 2008.⁷ It was apparent from the beginning that Dr. C.D. (Dan) Mote Jr., then-president of the National Academy of Engineering and GUIRR co-Chair, was the main supporter of the project, and his strong belief in international collaboration was critical during the project’s existence.⁸

The GUIRR ultimately released three *advisory* workshop proceedings:

⁴ For the sake of brevity in this piece, professionals who manage research are called “research manager(s).” Other terms that are used across the globe include: research managers and administrators, research administrators, sponsored research professionals, and project managers. In addition, until recently, the “profession” of research management was called a “field.” That change is a discussion for another time, except to say that research management is not a regulated profession like the practice of law or medicine.

⁵ See Christopher V. Pece & Gary W. Anderson, *Analysis of Federal Funding for Research and Development in 2022: Basic Research*, NAT'L CTR FOR SCI. AND ENG'G STAT., (Aug. 15, 2024), <https://nces.ed.gov/pubs/nsf24332> (on file with the University of Dayton Law Review).

⁶ Kevin L. Kliesen, *A Brave New Economic World? The Productivity Puzzle*, FED. RSRV. BANK OF ST. LOUIS, (Jan. 1, 1998), <https://www.stlouisfed.org/publications/regional-economist/january-1998/a-brave-new-economic-world-the-productivity-puzzle> (on file with the University of Dayton Law Review). The author contributed Chapter 13 to Brian Fitzgerald’s *Legal Framework for E-Research: Realising the Potential*. James Casey, *The University-Industry Demonstration Partnership: An Incremental Improvement to University-Industry Collaboration*, in *LEGAL FRAMEWORK FOR E-RSCH.: REALISING THE POTENTIAL* 298 (Brian Fitzgerald ed., 2008). This chapter discussed the University-Industry Demonstration Partnership and its contribution to university-industry collaboration. *Id.*

⁷ Casey, *supra* note 1, at 33, 47.

⁸ See *id.*; *Faculty Directory*, UNIV. OF MD., <https://me.umd.edu/clark/faculty/570/CD-Dan-Mote-Jr> (on file with the University of Dayton Law Review) (last visited Sep. 22, 2025).

1. Examining Core Elements of International Research Collaboration (2011);⁹
2. Culture Matters: International Research Collaboration in a Changing World (2014);¹⁰ and
3. Data Matters: Ethics, Data, and International Research Collaboration in a Changing World (2018).¹¹

These three multi-day workshops brought together a global group of subject matter experts from the fields of government, university, industry, and philanthropy.¹² The substance of the reports remains relevant today; however, as the next section illustrates, some existing issues have increased in importance, and new hot-button issues have emerged in the intervening years. In other words, the international research collaboration ecosystem continues to grow increasingly complex by the month. The following section discusses such emerging and developing issues.

III. THE WAY FORWARD: EMERGING AND DEVELOPING ISSUES IN INTERNATIONAL RESEARCH COLLABORATIONS

A. ARTIFICIAL INTELLIGENCE

A course at the University of Oxford defines artificial intelligence (“AI”) as: “[t]he capacity of computers or other machines to exhibit or simulate intelligent behavior; the field of study concerned with this.”¹³ AI is one of the major developments in technology that spans all aspects of the global economy. As such, it will ultimately impact every aspect of human

⁹ SUSAN SAUER SLOAN & TOM ARRISON, NAT'L ACAD., EXAMINING CORE ELEMENTS OF INTERNATIONAL RESEARCH COLLABORATION: SUMMARY OF A WORKSHOP (Nat'l Acad. Press 2011).

¹⁰ SUSAN SAUER SLOAN & JOE ALPER, NAT'L ACADS., CULTURE MATTERS: INTERNATIONAL RESEARCH COLLABORATION IN A CHANGING WORLD: SUMMARY OF A WORKSHOP (Nat'l Acad. Press 2014).

¹¹ SUSAN SAUER SLOAN & JOE ALPER, NAT'L ACADS., DATA MATTERS: ETHICS, DATA, AND INTERNATIONAL RESEARCH COLLABORATION IN A CHANGING WORLD: PROCEEDINGS OF A WORKSHOP, (Nat'l Acad. Press 2018).

¹² See *International Research Collaborations Group Meeting: Ethics, Data, and International Research Collaboration in a Changing World*, NAT'L ACADS., <https://www.nationalacademies.org/event/03-14-2018/international-research-collaborations-group-meeting-ethics-data-and-international-research-collaboration-in-a-changing-world> (on file with the University of Dayton Law Review). In 2024, GUIPRR released several workshop proceedings that are adjacent to international research collaborations. See PAULA WHITACRE, NAT'L ACADS., GUIRR AT 40: REIMAGINING THE TRIPLE HELIX OF INNOVATION, INVESTMENTS, AND PARTNERSHIPS: PROCEEDINGS OF A WORKSHOP—IN BRIEF 1–2 (Nat'l Acad. Press 2024); PAULA WHITACRE, NAT'L ACADS., INCENTIVIZING URGENCY, SPEED, AND SCALE TO SUPPORT FUTURE U.S. INNOVATION: PROCEEDINGS OF A WORKSHOP—IN BRIEF 1 (Nat'l Acad. Press 2025).

¹³ *Artificial Intelligence Concepts: An Introduction*, U. OXFORD, <https://lifelong-learning.ox.ac.uk/courses/introduction-to-artificial-intelligence-online> (on file with the University of Dayton Law Review) (last visited Sep. 22, 2025). It must be emphasized, however, there is no “right” definition of AI. There are many definitions, and all definitions will continue to evolve as the technology continues to mutate. See generally Lucas Caluori, *Hey Alexa, Why Are You Called Intelligent? An Empirical Investigation on Definitions of AI*, 39 AI & SOCIETY 1905 (2023) (examining the disagreements over the definition of AI).

existence. AI is developing so quickly that nation-states are having a hard time keeping up with the technological developments.¹⁴ As with many issues in the law-technology-science interface, the law is chronically behind technological and scientific advances.¹⁵ In the world of AI, technological advances come quickly, and the rapid movement from AI to Generative AI, and now to Agentic AI, is just one example.¹⁶

The proliferation of AI has given rise to legal and ethical challenges that lawyers and non-lawyers must consider.¹⁷ There are currently two significant issues with AI that are worth consideration. One is the impact of AI on human cognitive abilities. AI should supplement human cognition, not replace it. As with many technological developments in the internet age, society often learns about the disadvantages of new technology only after the products have already entered the marketplace—a concern captured by one lawyer in the article, “Staying Human in the Age of AI.”¹⁸

The second issue is one that impacts all users of AI: AI hallucinations. In the legal profession, AI may create phantom cases and courts, invent quotes, misattribute quotes, and misstate holdings or law.¹⁹ These problems happen whether one is a lawyer or a judge.²⁰

What are the effects of hallucinations in the legal system? It has been pointed out as follows: (1) “[e]rosion of court trust and integrity”; (2) “[w]asted resources and delays”; (3) “[s]anctions, malpractice, and professional liability”; and (4) the deterioration of “[c]lient trust and relationships.”²¹ To avoid these issues, the following have been recommended:

¹⁴ See Esmat Zaidan & Imad Antoine Ibrahim, *AI Governance in a Complex and Rapidly Changing Regulatory Landscape: A Global Perspective*, HUMANITIES & SOC. SCI. COMM’CS 2, 9 (Sep. 1, 2024), <https://www.nature.com/articles/s41599-024-03560-x> (on file with the University of Dayton Law Review).

¹⁵ See *Is the Law Playing Catch-Up with AI?*, HARV. L. TODAY (Jan. 16, 2025), <https://hls.harvard.edu/today/is-the-law-playing-catch-up-with-ai/> (on file with the University of Dayton Law Review).

¹⁶ See Bernard Marr, *Artificial Intelligence 101: Its Evolution, Implications and Possibilities*, FORBES, (Feb. 8, 2024, at 10:43 ET), <https://www.forbes.com/sites/bernardmarr/2024/02/08/understanding-ai-in-2023-its-definition-role-and-impact/> (on file with the University of Dayton Law Review); Ericka Watson, *Beyond Innovation the Legal and Ethical Challenges of AI*, 21 THE SCI TECH LAW. 5, 5–7 (2024). See Eric Goldman, *Generative AI is Doomed*, MARQUETTE LAW., Fall 2024, at 17, 17–27, for a thought-provoking piece on Generative AI and the regulation thereof.

¹⁷ See Ericka Watson, *supra* note 16, at 5–7. The SciTech Lawyer is the magazine for the Science and Technology Law Section of the American Bar Association. *The SciTechLawyer*, A.B.A, https://www.americanbar.org/groups/science_technology/resources/scitech-lawyer/ (on file with the University of Dayton Law Review) (last visited Sep. 22, 2025). Legal considerations are replete throughout international research collaboration. See James J. Casey, Jr., *The Legal Dimensions of Research Administration*, RSCH. MGMT. REV., Winter 1998, at 7. See *id.* for an early article by the author.

¹⁸ Matthew M. Beier, *Staying Human in the Age of AI*, 98 WIS. LAW. 39, 39–40 (2025).

¹⁹ See Brent J. Hoeft, *When AI ‘Lies’: The Legal Risks of Hallucinations*, 98 WIS. LAW. 39, 39–40 (2025).

²⁰ See *id.*

²¹ *Id.* at 40–41.

- “Develop protocols to double-check every citation and quote,”
- “Use reliable tools and demand sources,”
- “Maintain human oversight and judgment,”
- “Stay educated and follow emerging guidance,”
- “Be candid and correct mistakes promptly,” and
- “Follow the Judicial Guidelines from the Judicial Conference if you are a judge.”²²

Some of these suggestions are, in general, good recommendations for the research manager. As areas of research management become increasingly legalistic in nature, it is useful for research managers to improve their basic skills in the law.

The use of AI by lawyers and judges (and their clerks and assistants) does not relieve them of their professional responsibilities of due diligence. Because law is a regulated profession, and research management is not, lawyers and judges who fall short with their professional responsibilities of due diligence are subject to professional discipline.²³

The day may come when AI systems will no longer create/invent hallucinations. But until then, lawyers and research managers must exercise extreme care in the provision of their services.²⁴

B. RESEARCH SECURITY

A good operational definition of research security is: “safeguarding the research enterprise against the misappropriation of research and development to the detriment of national or economic security, related violations of research integrity, and foreign government interference.”²⁵ Additionally, “[r]esearch security involves safeguarding certain types of data and information (such as sensitive data, intellectual property, export-controlled information, proprietary information) and protecting against other risks.”²⁶ Recently, the federal government has increased its research security oversight efforts “by issuing and proposing new legislation, policies, and regulations related to research in foreign countries and with foreign collaborators.”²⁷

²² *Id.* at 41.

²³ See MODEL RULES OF PRO. CONDUCT SCOPE (A.B.A. 1983).

²⁴ See Joshua Rothman, *A.I. Is Coming for the Culture*, NEW YORKER (Aug. 25, 2025), <https://www.newyorker.com/magazine/2025/09/01/ai-is-coming-for-culture> (on file with the University of Dayton Law Review), for an excellent non-legal essay on AI.

²⁵ *Research Security*, CUNY, <https://www.cuny.edu/research/research-compliance/research-security/> (on file with the University of Dayton Law Review) (last visited Sep. 22, 2025).

²⁶ *Id.*

²⁷ *Id.*

The Council on Governmental Relations (“COGR”), “an association of research universities, affiliated medical centers, and independent research institutes,”²⁸ has developed a quick, useful reference table for current and upcoming federal research security requirements.²⁹ A quick perusal of the table provides a dizzying array of current and upcoming requirements.

On the x-axis, there is a color-coded status of requirement implementation, as well as specific areas of requirements (biographical & support disclosures, agency risk assessment, financial conflict of interest and conflicts of commitment, training, certifications, research security program).³⁰ On the y-axis, there are sources of federal-wide requirements and agency-specific requirements (depending on where an organization receives funding from).³¹ Without a doubt, this expansion of requirements has resulted in an additional administrative burden for colleges and universities, a battle they have fought for years. These additional requirements also come at a time when the present U.S. administration is working to significantly reduce administrative overhead costs reimbursed to grantees as part of the *real costs* of administering grants, contracts, and other contractual instruments.³² As a final note, the COGR table illustrates that the phrase “research security” now has an expansive definition, and, if history is a guide, enhanced security requirements never go completely away.³³

C. CYBERSECURITY

Cybersecurity may be defined as “the art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information.”³⁴ The definitional area of cybersecurity has been around for the past quarter-century, but the reality is that the idea has been around in a loose fashion since the birth of the computer age after World War II.³⁵ The growth, complexity, and power of computers have compelled a never-ending quest to secure computer systems, initially in the defense and intelligence sectors, followed

²⁸ COGR, <https://www.cogr.edu/> (on file with the University of Dayton Law Review) (last visited Sep. 22, 2025).

²⁹ *Quick Reference Table of Current & Upcoming Federal Research Security Requirements*, COGR, (Aug. 15, 2025), <https://www.cogr.edu/sites/default/files/Quick%20Reference%20Table%20of%20Current%20updated%20aug%202015%202025.pdf> (on file with the University of Dayton Law Review).

³⁰ *Id.*

³¹ *Id.*

³² See *Tracking the Trump Administration’s Moves to Cap Indirect Research Funding*, HIGHER ED DIVE, (Aug. 18, 2025), <https://www.highereddive.com/news/tracking-the-trump-administrations-moves-to-cap-indirect-research-funding/751123/> (on file with the University of Dayton Law Review).

³³ See COGR, *supra* note 28.

³⁴ *What is Cybersecurity?*, CISA (Feb. 1, 2021), <https://www.cisa.gov/news-events/news/what-cybersecurity> (on file with the University of Dayton Law Review).

³⁵ See Katie Chadd, *The History of Cybercrime and Cybersecurity, 1940-2020*, CYBERCRIME MAG. (Nov. 30, 2020), <https://cybersecurityventures.com/the-history-of-cybercrime-and-cybersecurity-1940-2020> (on file with the University of Dayton Law Review).

by the security of computer systems in the civilian economy.³⁶

The author had his first in-depth experience with cybersecurity when he worked in the research division of The University of Texas at San Antonio (“UTSA”). The experience with cybersecurity included a partnership with the Southwest Research Institute (“SwRI”) by joining GUIRR.³⁷ UTSA and SwRI were members of GUIRR from 2009 through 2013. Walt Downing at SwRI and the author successfully proposed to the GUIRR council a GUIRR meeting theme titled, *Cybersecurity in the Coming Decade: Using Security to Support the Value of Intellectual Property*.³⁸ This intellectually engaging workshop resulted in the following after-meeting summary in the 2011 GUIRR Annual Report:

On February 8-9, 2011, GUIRR members came together for a discussion on “Cybersecurity in the Coming Decade: Using Security to Support the Value of Intellectual Property.” With this particular meeting, we asked: How might we best develop a reliable, resilient, and trusted digital infrastructure? Discussion revolved around ways to reduce or mitigate the damaging effect that IP theft has on American jobs and our economy. The group further considered the challenges associated with a lack of internationally accepted standards that help enterprises (businesses, universities, government agencies) identify and curb cybersecurity risks. Although total protection is impossible, meaningful levels of security appear achievable, so we heard – as long as cybersecurity remains an ongoing, proactive response to a continuously evolving threat.³⁹

Over fourteen years later, several points made in the summary still stand out. First, cybersecurity remains an issue in all sectors of our economy, and in the global economy, with proactive steps remaining critically important.⁴⁰ Second, protecting against intellectual property (“IP”) theft remains an American (and global) concern.⁴¹ The current U.S. administration has made protecting American IP against theft—particularly Chinese theft—

³⁶ See Carl E. Landwehr, *Computer Security*, SPRINGER-VERLAG 3, 3–5 (July 27, 2001), <https://www.landwehr.org/2001-ijis-landwehr-computer.pdf> (on file with the University of Dayton Law Review).

³⁷ *UTSA, SwRI Partner to Join Elite National Research Roundtables*, SWRI (Mar. 24, 2009), <https://www.swri.org/newsroom/press-releases/utsa-swri-partner-join-elite-national-research-roundtables> (on file with the University of Dayton Law Review).

³⁸ See NAT'L ACAD. OF SCIS. ET AL., 2011 ANNUAL REPORT GOVERNMENT-UNIVERSITY-INDUSTRY RESEARCH ROUNDTABLE (GUIRR) 1 (2011).

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

a major concern.⁴² With that being said, the theme today is clear: cybersecurity will remain a permanent fixture of international research collaboration.

D. DATA PROTECTION AND PRIVACY

Data protection is defined as “the practice of safeguarding sensitive information from data loss and corruption.”⁴³ The “goal is to protect data and ensure its availability and compliance with regulatory requirements.”⁴⁴ Conversely, privacy refers to an individual’s right to be free from unwanted interference or intrusion.⁴⁵ Information privacy means having a level of control over the collection and use of one’s personal data.⁴⁶

The author considers data protection and privacy to be siblings, and, along with cybersecurity, constitute a suite of topics that many people will consider to be synonymous with each other. For the purposes of this Article, it was important to discuss them separately in this section to point out similarities and differences.

In some ways, privacy is a broader concept than data protection because privacy includes considerations that are not exclusively data-specific. For instance, in Europe, privacy is considered a fundamental right, while in the U.S. Bill of Rights to the Constitution, there is no mention of privacy as a fundamental right.⁴⁷ These thoughts were broadly spelled out in a March 2023 CUNY (The City University of New York) blog post by the author, specifically outlining five reasons why privacy matters every day:

⁴² *Fact Sheet: President Donald J. Trump Encourages Foreign Investment While Protecting National Security*, THE WHITE HOUSE (Feb. 21, 2025), <https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-encourages-foreign-investment-while-protecting-national-security/> (on file with the University of Dayton Law Review). See PATRICK VAN ECKE ET AL., MONITORING AND ANALYSIS OF TECHNOLOGY TRANSFER AND INTELLECTUAL PROPERTY REGIMES AND THEIR USE (2009), for an excellent book on intellectual property and technology transfer. The book is “the result of a study jointly undertaken by law firms DLA Piper UK (Brussels) and Mason Hayes+Curran (Dublin), following the invitation to tender ‘*Monitoring and analysis of technology transfer and intellectual property regimes and their use*’, issued in 2005 by the Research Directorate General of the European Commission.” *Id.* at 3. Some of the legal topics covered in the study include professor’s privilege, prior user rights, and the experimental use exception, all analyzed from a comparative law perspective. *Id.* at 5. The jurisdictions covered in the book include most European Union member states as well as the United States and Japan. *Id.* at 16.

⁴³ Annie Badman & Matthew Kosinski, *What Is Data Protection*, IBM, <https://www.ibm.com/think/topics/data-protection> (on file with the University of Dayton Law Review) (last visited Sep. 23, 2025).

⁴⁴ *Id.*

⁴⁵ *What Is Privacy*, IAPP, <https://iapp.org/about/what-is-privacy/#> (on file with the University of Dayton Law Review) (last visited Sep. 23, 2025). See Samuel D. Warren & Louis Brandeis, *The Right to Privacy*, 4 HARV. L. REV. 193 (1890), for an influential essay on a proposed right to privacy authored in 1890 by Samuel D. Warren II and Louis Brandeis (years before the latter became a member of the U.S. Supreme Court).

⁴⁶ *What Is Privacy*, *supra* note 45.

⁴⁷ Compare Charter of Fundamental Rights of the European Union arts. 7–8, 2012 O.J. (C 326) 397 (outlining the rights to the respect for private life and the protection of personal data), with U.S. CONST. amends. I–X (stating no fundamental right to privacy).

The right to privacy is at the core of democratic governance and is reflective of *human autonomy* and *free will* as key concepts for all human beings. . . . The right to privacy, like the personal rights expressly enumerated in the U.S. Bill of Rights, is best exercised through an educated citizenry. . . . The rise of technological innovations such as algorithms, algorithmic decision-making, and machine learning have increased tensions with the U.S. Bill of Rights (in particular the 1st, 4th, 5th, 6th, and 8th Amendments[]). . . . AI must be designed to *enhance* humanity in addition to privacy. AI tools must not be allowed to dehumanize or degrade people. . . . The Security Field (where I cluster the areas of cybersecurity, national defense, and international collaboration) are broad and each deserve separate treatment. . . . [T]hese are part of the larger balancing act incorporating law, technology, and democracy.⁴⁸

E. WRAPPING UP: TECHNOLOGY AND HUMAN SKILLS

In technology, although primarily based on hardware, software, and related areas, it remains important that human skills—interpersonal/soft skills—are given equal importance. It may sound rather dated, but people should control these areas, not the other way around. This is especially true with AI and its future iterations. Technology, such as AI, should supplement human skills and reasoning, not replace them. It is easy to imagine nightmare scenarios if people do not retain ultimate control of these technologies and of the technologies to come. In the field of international research collaboration, it is easy to see that new technologies could enhance collaboration, subject to the concerns above.

F. THE ROLE OF PROFESSIONAL DEVELOPMENT

Education and professional development are critical to international research collaboration and economic and social development in general. Education is critical, too, for successful citizenship in a democracy.⁴⁹ As President Eisenhower said during a press conference on February 9, 1955: “Education is really bread and butter citizenship. It is just necessary to the developing of citizens that can perform their duties properly.”⁵⁰

⁴⁸ James Casey, *Why Privacy Matters*, MEDIUM (Mar. 23, 2023), https://medium.com/@CUNY_SPS/why-privacy-matters-bad91ef71ac2 (on file with the University of Dayton Law Review).

⁴⁹ *Importance of Citizenship Education*, YOUNG CITIZENS, <https://www.youngcitizens.org/resources/citizenship/importance-of-citizenship-education/> (on file with the University of Dayton Law Review) (last visited Oct. 1, 2025).

⁵⁰ *Quotes*, EISENHOWER PRESIDENTIAL LIBR., <https://www.eisenhowerlibrary.gov/eisenhowers/quotes#education> (last visited Oct. 1, 2025).

Beyond formal education, the American Bar Association and state bar associations offer extensive professional development opportunities across the nation through their divisions, sections, and committees.⁵¹ There are many professional development opportunities for lawyers.⁵² For research management professionals who work in the international space, it is nearly a full-time job to stay abreast of changes in these areas. Professional associations like the National Council of University Research Administrators (“NCURA”), Society of Research Administrators International (“SRAI”), and the European Association of Research Managers and Administrators (“EARMA”) provide professional development opportunities in these areas, and the Government-University-Industry-Philanthropy Research Roundtable (“GUIPRR”) provides intellect-stretching workshops and webinars to its members and the public.⁵³ In January 2025, the author co-led a GUIPRR webinar on international research collaboration and its progress, challenges, and opportunities.⁵⁴

IV. CONCLUSION

In wrapping up this Article, a quote from Thomas Jefferson seems fitting:

“[LIBERTY] IS THE GREAT PARENT OF SCIENCE AND OF VIRTUE . . . A NATION WILL BE GREAT IN BOTH ALWAYS IN PROPORTION AS IT IS FREE.”⁵⁵

Not only is liberty a critical concept of civics and government, but

⁵¹ E.g., *ABA Professional Development*, A.B.A, <https://www.americanbar.org/topics/profdev/> (on file with the University of Dayton Law Review) (last visited Oct. 20, 2025); *ABA Professional Development*, A.B.A, <https://www.americanbar.org/topics/profdev/> (on file with the University of Dayton Law Review) (last visited Oct. 20, 2025).

⁵² William R. Bay, *A Year of Accomplishments, a New Year of Challenges*, A.B.A. (Dec. 23, 2024), <https://www.americanbar.org/news/abanews/aba-news-archives/2024/12/year-of-accomplishments-year-of-challenges> (on file with the University of Dayton Law Review). Writing this piece reminded the author of how educational his time on the *University of Dayton Law Review* was. He has often reflected on what that service has meant in terms of acquiring research, writing, and editing skills. Coincidentally, the *Marquette Lawyer* Fall 2024 issue contains an article by the Honorable Cynthia M. Davis, a Milwaukee County Circuit Court judge, where she explains that, in her experience, serving on a law review builds character as well as learning skills. *See generally* Cynthia M. Davis, *Lessons Learned Since Life on the Law Review*, 107 MARQ. L. REV. 1127 (2024). Her article reflects my experience too, and as anyone who has served on a law review can attest to, those skills are for life.

⁵³ *About Us*, NCURA, <https://www.ncura.edu/AboutUs.aspx> (on file with the University of Dayton Law Review) (last visited Oct. 21, 2025); *Discover SRAI*, SRAI, <https://www.srainternational.org/about/who-we-are> (on file with the University of Dayton Law Review) (last visited Oct. 21, 2025); *Membership Benefits*, EARMA, <https://earma.org/membership-benefits/> (on file with the University of Dayton Law Review) (last visited Oct. 26, 2025); *About the Government-University-Industry-Philanthropy Research Roundtable*, *supra* note *.

⁵⁴ *International Research Collaborations: Revisiting Challenges, Progress, and Emerging Opportunities*, *supra* note 2.

⁵⁵ Thomas Jefferson, Thomas Jefferson to Joseph Willard, 24 March 1789, *reprinted by NAT'L ARCHIVES: FOUNDERS ONLINE*, <https://founders.archives.gov/documents/Jefferson/01-14-02-0437> (on file with the University of Dayton Law Review). This quote is engraved on the front of the Keck Center, a National Academics (NASEM) building in Washington, D.C.

this quote illustrates that liberty is the foundation upon which science and virtue will be great. This must be remembered when international research collaboration is considered and is equally applicable when discussing domestic research collaboration. The world of international research and collaboration is undergoing tremendous changes. As noted in Section III above, the areas of AI, research security, cybersecurity, and data protection/privacy continue to change at a rapid pace.⁵⁶

In addition to these emerging areas, often brought on by exceedingly rapid change in technologies, international research continues to be affected by other aspects of an international nature. These include: political and social structures, differences in educational systems and the extent of education in the general populace, cultural differences, language differences, differences in expectations and missions, intellectual property and contract negotiation differences, and differences in how data is conceived and why it matters.⁵⁷

Aside from educational differences, these issues were explored in greater depth in the three original GUIRR workshop proceedings noted earlier in this Article.⁵⁸ In the estimation of the author, the original workshop proceedings remain as valid today as they were years ago—supplemented by the newer areas discussed in this paper.

What does the future hold for international collaboration? Well, change will continue at an even quicker pace. Lawyers and research managers will need to stay abreast of changes in the global research system. Professional development will be a lifelong requirement, coupled with a positive point of view. International research collaboration is an exciting field and will remain that way long into the future.

⁵⁶ See *supra* Section III.

⁵⁷ *International Research Collaborations: Revisiting Challenges, Progress, and Emerging Opportunities*, *supra* note 2.

⁵⁸ See SLOAN & ARRISON, *supra* note 9, at 1–6, 8–9, 15; SLOAN & ALPER, *supra* note 10, at 1–2; SLOAN & ALPER, *supra* note 11, at 1–3.