

CHAIRMAN'S STATEMENT

1. The 22nd Global Annual Meeting of the Science and Technology in Society *forum* took place from October 5 to 7, 2025 in Kyoto, with the participation of more than 1,500 global leaders in science and technology, policymaking, business, and media from over 80 countries, regions, and international organizations.

Regional conflicts continue to recur with no clear resolution in sight, while the international order that has been built over decades is beginning to face strong headwinds. In this context, the need for global cooperation—both in the pursuit of peace and in addressing environmental and social challenges on a planetary scale—has become ever more urgent. Science and technology hold great power to support human health and secure lives, and to guide humanity onto a path of sustainable development. Our gathering and discussions here were therefore both timely and highly relevant. As you return to your home countries, I encourage you to translate our shared understanding into concrete action.

AI and Society

2. Artificial Intelligence (AI) is rapidly transforming every sector of society, with Artificial General Intelligence (AGI) on the horizon promising even greater disruption. By 2030, AI will be deeply embedded across healthcare, business, government, and daily life, demanding robust infrastructures and strong governance. To maximize benefits while mitigating risks, we must foster innovation alongside safeguards for privacy, security, and accountability and respect for cultural diversity. Equitable access, transparency, and sustainability must guide development, particularly as energy and data demands grow. International collaboration is vital to shape standards, manage risks, and ensure AI advances human well-being, economic opportunity, and democratic resilience.

3. Nowhere is this transformation more visible than in medicine. From diagnostics and drug discovery to health system management, AI is reshaping both patient care and global health. AI-powered imaging, predictive analytics, and digital health assistants can enhance accuracy, efficiency, and access, especially in underserved regions. Yet challenges remain: data quality, interoperability, regulatory uncertainty, and risks of bias and inequality. To unlock AI's potential, technologists, clinicians, entrepreneurs, and regulators must collaborate on scalable, equitable, and sustainable solutions. Global cooperation, open innovation, and robust governance are essential to ensure that AI in healthcare reduces disparities, strengthens resilience, and delivers innovation that advances health for all.

4. Beyond healthcare, AI is also transforming public administration, offering efficiency, transparency, and citizen-focused services, while at the same time raising urgent questions of ethics, security, and sovereignty. Governments must harness AI to strengthen decision-making in healthcare, climate resilience, and emergency response, but ensure robust governance frameworks rooted in privacy, dignity, and accountability. International benchmarks—such as UNESCO's Recommendation on the Ethics of AI—provide a foundation, yet stronger enforceable safeguards are needed to prevent manipulation of elections, misuse of data, or erosion of trust. By fostering global cooperation, digital sovereignty, and critical human oversight, AI in government can become a force for inclusive, democratic, and secure societies.

5. At the societal level, AI is also reshaping how people connect, deliberate, and organize. It offers powerful opportunities to foster inclusion, cross-cultural dialogue, and collective action on urgent global priorities such as climate resilience and sustainable development. Yet the same systems risk amplifying polarization, spreading disinformation, and undermining democratic trust. To ensure AI enhances human agency rather than eroding it, we must invest in strong social infrastructures—universal access, lifelong training, and citizen–expert collaboration. Guiding AI with inclusive governance and ethical design will be essential to build resilience, safeguard rights, and secure a digital future where no one is left behind.

Sustainability

6. Decarbonization requires systemic solutions across energy, production, consumption, and resource management. Yet this transition is unfolding in a turbulent context: conflicts and cost disparities challenge progress, even as breakthroughs such as nuclear innovation and the possibility of effectively harnessing fusion bring new hope. Appropriate regulations must accompany the future deployment of these innovations. Companies and consumers alike are increasingly prioritizing sustainability, from supply chains to energy-efficient products, while the global waste crisis looms. Many technologies to achieve net zero already exist and must be scaled, alongside bold new innovations. Governments, businesses, and innovators must align incentives, accelerate permitting, and design markets where sustainable choices are competitive—transforming sustainability from aspiration into widespread practice.

7. The urgency of this transition is underscored by the accelerating impacts of climate change—from record-breaking heat in Japan to devastating wildfires in California to alternating droughts and floods in some of the poorest areas in the world

threatening food security. Since the energy sector drives nearly 80% of global GHG emissions, achieving deep decarbonization will require balancing affordability, security, and public acceptance while pursuing both near- and medium-term solutions. Breakthroughs such as fusion may ultimately reshape the energy landscape, but interim pathways must include renewables, hydrogen, and nuclear innovations. Extending the life of existing nuclear fleets, advancing SMRs and AMRs, and addressing waste management are essential steps. Progress will depend on innovation, credible timelines, and inclusive governance of new energy technologies.

8. At the same time, science warns that our broader economic system has already pushed the planet beyond its safe operating zones, threatening human wellbeing. To steer toward a sustainable future, urgent transformation of social and economic systems is essential. The call for a nature-positive economy, recognized after the Paris Accord, must now be accelerated despite some political backlash against the sustainability agenda. Business, policy, and governance reforms are needed to fully account for the value of nature in decision making. Mobilizing finance, leveraging technology, and fostering effective public–private partnerships will be key to making sustainability both palatable and profitable, ensuring resilience within a fractured global environment.

Science and Technology

9. Rapid technological advances are reshaping both societies and research —accelerating innovation, redefining work, and transforming academic priorities. At the same time, intensifying competition for technological leadership has prompted nations to safeguard critical knowledge, emphasizing resilience and national interests. Geopolitical tensions, particularly around AI, risk narrowing international collaboration to only trusted partners, undermining openness and inclusivity. This is the test of the moment: sustaining predictability for long-term basic research while promoting mission-oriented innovation and global partnerships. Policymakers, institutions, and funding agencies must strike a delicate balance—supporting fundamental science, fostering early-career talent, and ensuring discoveries translate into impactful, real-world benefits. Here again, AI is impacting education and the future of the university must take into account the ubiquitous use of AI by both faculty and students as we promote inter-disciplinary collaborations to address the multi-dimensional complexities of the challenges humanity faces.

10. Within this landscape, science communication plays a central role in building trust, shaping policy, and engaging diverse publics in research. Its goals range from convincing governments to invest in science, to explaining research purposes, to incorporating public input in design and delivery. Yet cultural, religious, and national differences challenge the notion of a single global strategy. With funding disparities and varying trust in scientists, approaches must be tailored and inclusive. As AI transforms information access, the role of science journalism becomes more vital: safeguarding independence, promoting accountability, and ensuring rigorous reporting. Strengthening global support for science communication is essential to protect democracy and knowledge.

11. In a rapidly changing geopolitical and scientific landscape, international movement of researchers (brain circulation) has emerged as an important driver of global progress. Recent policy shifts in the United States have created fresh uncertainty, prompting more researchers to seek opportunities abroad and spurring Europe, Canada, Australia, Japan, and others to expand initiatives to attract talent. Brain circulation today includes relocation, joint and partial appointments, and student mobility, all of which strengthen international networks and build pipelines of future talent. We affirm our shared responsibility to ensure that these flows advance science as a global commons, driving innovation and solutions to urgent global challenges.

12. Equally important is ensuring that open scientific exchange—essential for innovation—remains secure in the face of escalating threats such as cyberattacks, insider risks, and illicit transfers in AI, quantum, and biomedical fields. Protecting knowledge, data, and talent while preserving international collaboration is critical for national security, economic resilience, and societal wellbeing. Institutions and governments must adopt risk-based safeguards, foster trust, and share best practices that mitigate vulnerabilities without stifling discovery. Harmonized global frameworks, rather than fragmented rules, can advance both openness and protection. The research community must lead in designing governance models that safeguard science while ensuring it continues to benefit humanity worldwide. While freedom of scientific research pursuit should be guaranteed, ethical consideration and self-restraint are recommended as research possibilities are now “turbo-charged” through the applications of AI in many fields from Protein Mapping to designing synthetic drugs. Wisdom must guide the development of new knowledge and the deployment of the results of that new knowledge for the benefit of society and the environment.

13. Building on these efforts, science diplomacy is also being reshaped in an age of growing threats to global science—economic, ideological, and political. Online misinformation, polarized politics, and competing agendas now intersect to undermine international collaboration. To respond, a new, practical, and realistic framework for science diplomacy is needed, engaging not only national governments but also cities, states, and industry as active actors. Strengthening resilience in the global science system requires measures such as cross-border data storage, diversified funding, and distributed research infrastructures. By building safeguards through international agreements, science diplomacy can transform from a vulnerable ideal into a vital tool for resilience and trust.

Our explorations of these and other issues are far from over. We will continue our interactions and discussions to accompany the evolving lights and shadows of science and technology in the world. We look forward to convening again next year in Kyoto and have agreed to hold the 23rd Annual Meeting of the STS *forum* from Sunday, October 4 to Tuesday, October 6, 2026.