The Role of Artificial Intelligence in Building Responsible Open Science Infrastructures

Research Data Alliance's (RDA) 10th Anniversary Webinar
Theme: Sustainable Development and Responsible Research

Wednesday, 27 September 2023, 13:00 to 15:00 UTC; 15:00 to 17:00 CEST
Registration link



Organised by the
European Open Science Cloud – Future (EOSC-Future) & Research Data Alliance (RDA)
Artificial Intelligence and Data Visitation Working Group (AIDV-WG)

In collaboration with the
Global Open Science Cloud (GOSC) Initiative
CODATA International Data Policy Committee (IDPC)

Contents

The Role of Artificial Intelligence in Building Responsible Open Science Infrastructures 1
Webinar Agenda 2
Webinar Description 4
Webinar Methodology and Framing Goals 5
Webinar Impact 6
Target Audience 7
Biographies 8

Webinar Agenda

Time	Topic	Presenter
13:00 UTC 15:00 CEST	**Welcome and Opening Remarks**	**Professor Perihan Elif Ekmekci** MD, PhD, Head of History of Medicine and Ethics Department, Deputy Dean of the School of Medicine, Head of the Institutional Review Board, TOBB University of Economics and Technology; Co-Chair, EOSC-Future/RDA AIDV-WG; Ankara, Turkey **Professor Natalie Meyers** Professor of the Practice Lucy Family Institute for Data & Society, University of Notre Dame, USA & CODATA Working Group on the role of integrity in data and AI science, ethics, and policy (Integrity-WG)
13:10 UTC 15:10 CEST	**Keynote Address** This will set the stage by discussing the profound impact of AI on Open Science. The talk will highlight how AI technologies are reshaping data analysis, knowledge discovery, and collaboration in research, and the importance of integrating responsible AI practices to ensure ethical research outcomes.	**Dr. Daniel Hook** CEO of Digital Science Co-founder, Symplectic Research Information Management Provider, Research on Research Institute (RoRI)
13:25 UTC 15:25 CEST	**Panel Discussion** **AI Actions for Sustainable Development** Reflections from the first preliminary results of the survey on AI ethical and legal implications of LLMs Discussions on the essential elements of the AI governance: legal, ethical, and human rights implications of AI in Open Science in AI Bill of Rights Documents Intersections of legal and ethical concerns in AI and Open Science governance	**Professor Perihan Elif Ekmekci** MD, PhD, Head of History of Medicine and Ethics Department, Deputy Dean of the School of Medicine, Head of the Institutional Review Board, TOBB University of Economics and Technology; Co-Chair, EOSC-Future/RDA AIDV-WG; Ankara, Turkey **Professor Natalie Meyers** Professor of the Practice Lucy Family Institute for Data & Society, University of Notre Dame, USA & CODATA Working Group on the role of integrity in data and AI science, ethics, and policy (Integrity-WG) **Dr. Gnana Bharathy** Artificial Intelligence and Research Data

Time	Topic	Presenter
	Does algorithmic regulation lead to enhanced Open Science or does it inhibit Open Science? How do we balance building trust and respect for autonomy with Open Science in the realm of AI? Is DV a reliable tool for finding this balance? Contemporary approaches to informed consent in DV Is consent a personal choice or a social good for Open Science? How do/can/should we redefine the roles and responsibilities ethics committees have for the role of AI in Open Science?	Specialist (Strategy, Design & Data Science), University of Technology; Australian Research Data Commons (ARDC); Melbourne, Australia **Professor Valery Sokolchik** Belarusian Medical Academy of Postgraduate Education, Minsk, Belarus
13:50 UTC 15:50 CEST	**Interactive Discussion on AI Actions for the Sustained Growth of Open Science through AI** How can we develop responsible AI governance for innovation, increased trust, ethical decision-making, and a positive societal impact from EOSC and other Open Science infrastructures?	**Moderators** Professor Perihan Elif Ekmekci Professor Natalie Meyers
14:10 UTC 16:10 CEST	**Panel Discussion Implementing AI into Sustainable Actions through Open Science** Governance for AI in European Open Science Cloud (EOSC) Governance for AI in the Global Open Science Cloud (GOSC) Initiative Modelling governance for AI through the Global Open Research Commons (GORC) Working Group	**Dr. Lili Zhang** Senior Research Scientist, Computer Network Information Center (CNIC), Chinese Academy of Sciences (CAS), Beijing, China **Representative TBC** European Open Science Cloud (EOSC) **Dr. Charles (CJ) Woodford** Global Open Research Commons, RDA; World Data System International Technology Office Research Associate with Ocean Networks, University of Victoria, Canada
14:40 UTC	**Interactive Discussion on Future Collective Actions for AI on Open Science Platforms**	**Francis P. Crawley** Co-Chair, EOSC-Future/RDA AIDV-WG Chairman, International Data Policy

Time	Topic	Presenter
16:40 CEST	How can we responsibly address the challenges faced, lessons learned, and best practices needed for ensuring responsible AI adoption in Open Science infrastructures?	Committee, CODATA GCPA & SIDCER Leuven, Belgium
14:55 UTC 16:55 CEST	**Summary of the Webinar**	**Moderators** Professor Perihan Elif Ekmekci Professor Natalie Meyers
13:00 UTC 17:00 CEST	**Close**	

Webinar Description

As part of the Research Data Alliance's (RDA) 10th Anniversary celebrations under the theme, 'Sustainable Development and Responsible Research,' we are excited to present a thought-provoking webinar that delves into the vital intersection of artificial intelligence (AI) and responsible Open Science infrastructures. We address the question 'How can we ensure a human face to science in an increasingly digital/algorithmized world?' This webinar aims to explore the transformative potential of AI in shaping the landscape of Open Science while highlighting the ethical, legal, and societal considerations to support innovative and responsible AI practices in Open Science infrastructures and tools. The deliverables of the AIDV WG will contribute to this discussion, making the discussion interdisciplinary and inclusive to highlight the importance of a participatory approach when dealing with AI, open science, and the SDGs.

On the one hand, sustainable AI innovation relies heavily on the existence of open, trustworthy data ecosystems that the EOSC aims to provide. In turn, AI develops capabilities that increase the value of shared research assets. However, to ensure that AI and its data foundations are developed to enhance our individual and social lives, it is imperative that framing ethical, legal, and governance frameworks are developed across stakeholders.

We will provide an open platform for interactive discussion on the needs for ethics, human rights, and legal governance frameworks to support Open Science that engender the trust of society while promoting cutting-edge science that addresses the needs of society within the framework of the UN Sustainable Development Goals (SDGs) and, particularly, within the developing EOSC federated environment for sharing research data and services across Europe.

This webinar contributes to RDA's commitment to develop Open Science infrastructures across interdisciplinary and multi-sectoral communities that is responsive to the innovation needs of the major contributors and users of data in the sciences and humanities.

This webinar highlights the outputs of the EOSC-Future/RDA AIDV-WG's deliverables:

1. **Guidance on legal considerations for AI and DV**: a mapping of legal considerations for AI and DV as well as how to navigate legal frameworks for users of EOSC and other Open

Science platforms. Specific attention will be given to the Schrems II decision and the effect of this on DV.

2. **Guidance for informed consent in AI and DV**: The GDPR and other EU data and AI regulations as well as regulations in other jurisdictions have placed heavy emphasis on the role of informed consent in data sharing and data publication. We will examine the role of informed consent in AI and DV, addressing fundamental challenges to current informed consent frameworks and practices. The aim is to provide guidance for researchers and data controllers across disciplines regarding informed consent in AI and DV.
3. **Guidance for ethics committees reviewing AI and DV**: Ethics committees (RECs/IRBs/IECs) have been confronted by new challenges when encountering the need for advice on data management and data sharing as well as in other areas of data processing. The use of AI and DV, especially in health-related research, requires investigation with regard to the ethical, legal, and social issues these raise for ethics committees and those submitting proposals for advice/approval to ethics committees. This guidance will assist ethics committees in understanding questions, methods, and procedures for reviewing AI and DV.
4. **An AI Bill of Rights**: Underlying the growing application and use of AI and DV is a concern to ensure that data subjects are protected by these new technologies. The AIDV-WG will draft an RDA AI Bill of Rights that promotes fundamental human rights and advances trust in AI and federated systems for Open Science.

The webinar unpacks these deliverables within the context of UNESCO's Recommendation on Open Science and its Recommendation on the Ethics of Artificial Intelligence as well as within the EU/EOSC infrastructures for AI and other leading national and international Open Science infrastructures.

Webinar Methodology and Framing Goals

This webinar is designed to be inclusive of a diverse global audience of researchers and professionals in scholarly communication and Open Science practices.

The webinar addresses AI in relation to the EOSC sustainability goals in several ways:

- AI techniques help to analyze and interpret large, complex research datasets and extract valuable insights to demonstrate the usefulness of sharing data through EOSC. This can promote adoption by the research community.
- AI services and analytics tools built on top of shared data assets can provide additional functionality that increases the value proposition of participating in the EOSC ecosystem.
- AI algorithms themselves and training datasets require standardization, transparency, and interoperability mechanisms - principles that are core to the EOSC's technical architectures.
- Developing robust data governance frameworks for ethical use of AI and shared data resources is central to both EOSC sustainability and responsible AI innovation.
- Training programs in data science and AI contributes to developing the human capital and skills needed to fully utilize the potential of shared Open Science infrastructures enabled by EOSC.
- Public-private partnerships around AI/data can lead to innovative services, but require ethics, legal, and governance policies to balance interests and promote open access.
- Incentives and appropriate assessment metrics are needed to promote data contribution and reuse for AI, aligned with EOSC priorities.

- International cooperation on AI standards and systems can benefit from building on the foundations established by interoperable Open Science infrastructures like EOSC.

In a larger, more general way, the webinar considers the ways in which ethics, law, and governance are needed for co-developing AI responsibly in support of Open Science principles. This provides significant opportunities to progress towards the United Nation's Sustainable Development goals (SDGs) while also managing risks and prioritizing societal benefits. AI and Open Science each enable and require the other.

- Promoting AI applications in EOSC and other Open Science infrastructures contributes to healthcare, education, agriculture, environmental protection, and humanitarian responses and achieving specific SDGs when deployed responsibly.
- Open access to data, code, and research knowledge highlighted in the UNESCO Recommendation enables more equitable development of AI across communities and populations globally.
- UNESCO's emphasis on participative science aligns with the need for multidisciplinary and inclusive approaches to developing ethical and beneficial AI applications.
- Principles of transparency, accountability and scientific integrity in the Recommendation are crucial for trustworthy and unbiased AI in EOSC and other Open Science systems.
- Respect for human rights, cultural diversity, and environmental protection should guide AI innovation and prevent unintended harms within EOSC and Open Science ecosystems generally.
- Capacity building for data science and AI skills supports wider participation recommended by UNESCO.
- International cooperation on AI research, development, and governance is necessary to create global public goods, as envisioned by the SDGs.
- AI regulation and standardization should be developed collaboratively with scientific communities, in line with UNESCO and EOSC principles.

Webinar Impact

The AIDV-WG's contributions to AI governance, ethics, and human rights for Open Science in the EU and internationally are expected to lead to several significant impacts across various current issues of importance to EOSC, RDA, and the global Open Science community. The webinar aims to impact the following areas:

- Responsible Innovation: Active participation in AI governance and ethics discussions ensures that Open Science projects leverage AI technologies in ways that align with ethical principles and human rights. This promotes responsible science and innovation by preventing the development and deployment of AI systems that could lead to unintended negative consequences.
- Enhanced Trust: Demonstrating a commitment to AI ethics and human rights builds trust among stakeholders, including researchers, policymakers, the public, and industry players. Trust is vital for the successful adoption and integration of AI technologies in Open Science, encouraging collaboration and knowledge sharing.
- Ethical Decision-Making: Contributions to AI governance enable organizations to make informed and ethical decisions throughout the AI lifecycle. By adhering to established guidelines and principles, Open Science initiatives can navigate complex ethical dilemmas effectively.

- Safeguarding Human Rights: By prioritizing human rights in AI development, organizations contribute to ensuring that AI technologies respect individuals' rights to privacy, freedom of expression, and non-discrimination. This safeguarding protects both researchers and participants in Open Science projects.
- Mitigating Bias and Discrimination: Active involvement in AI ethics efforts helps identify and mitigate biases that can be present in AI algorithms. This reduces the risk of discriminatory outcomes and promotes inclusivity within Open Science initiatives.
- Global Leadership: Contributing to AI governance and ethics positions the EU as a global leader in responsible AI development. It enables the EU to influence international discussions, share best practices, and contribute to shaping global AI norms.
- Standardization and Consistency: Engaging in AI governance efforts supports the development of standardized practices and guidelines. This consistency simplifies compliance for Open Science projects, ensuring that AI technologies are aligned with international norms.
- Ethical Reputation: Organizations that actively address AI ethics and human rights concerns gain a reputation for ethical leadership. This reputation can attract collaboration opportunities, funding, and partnerships that align with responsible Open Science practices.
- Long-Term Sustainability: Contributions to AI governance and ethics ensure that Open Science projects remain sustainable in the long run. By addressing ethical and human rights considerations, organizations prevent potential legal and ethical challenges that could hinder their progress.
- Positive Social Impact: Ultimately, the impact of AI technologies on society depends on how they are developed and deployed. Contributions to AI ethics and human rights ensure that Open Science initiatives generate positive societal impact by advancing knowledge, supporting informed decision-making, and fostering equitable access to scientific advancements.

In summary, this webinar is intended to contribute to the RDA and global discussion on the role of AI governance, ethics, and human rights in EOSC and internationally, particularly in relation to responsible innovation, increased trust, ethical decision-making, and a positive societal impact. The AIDV-WG's deliverables are intended to set high standards for AI technologies while promoting a more inclusive, equitable, and ethically driven Open Science ecosystem in the EU and globally.

Target Audience

This webinar is designed specifically for the EOSC and RDA communities as well as for researchers, data scientists, library scientists, policymakers, ethicists, and individuals interested in the transformative potential of AI in Open Science. Whether you are actively involved in Open Science initiatives, AI development, building Open Science infrastructures or policymaking, this event offers a platform to explore the ethical, legal, and governance dimensions of the intersection between AI and Open Science. The webinar is intended for scientists across disciplines, including the social sciences and the humanities, as well as for those building software and applications, and those at the interface between data and society.

Join us as we unravel the intricate relationship between AI and responsible Open Science infrastructures. Be part of a stimulating conversation that paves the way for a human-focused impactful governance future in research and data-driven innovation. Participants will have an opportunity to ask questions, seek insights, and delve deeper into the nuances of AI's role in responsible Open Science infrastructures.

Biographies

Dr. Daniel Hook, CEO | Digital Science



Daniel Hook is CEO of Digital Science, co-founder of Symplectic, a research information management provider, and of the Research on Research Institute (RoRI). A theoretical physicist by training, he continues to do research in his spare time, with visiting positions at Imperial College London and Washington University in St Louis. Alexander Bernier, Centre of Genomics and Policy, McGill University, Montreal & Doctoral Candidate, Faculty of Law, University of Toronto, Canada

Dr. Gnana Bharathy, Artificial Intelligence and Research Data Specialist (Strategy, Design & Data Science), University of Technology; Australian Research Data Commons (ARDC); Melbourne, Australia



Gnana Bharathy serves as the ARDC national expert in AI/ML for Australian research and educational institutions, and also works as a researcher, at UTS. In the first role, he works as ARDC Research Data Specialist (AI/ML) (an advisory role in the national expertise team situated at UTS), and provides AI/ML based advice to research institutions. In the second role, he carries out research and supervises/ mentor/ teach students. He is also a member of Centre on Persuasive Systems for Wise Adaptive Living (PERSWADE). Outside academia, Gnana has extenstive experience as Design, Decisions and Data Science consulting. Gnana has over 15+ years of experience applying data science (and other advanced analytics approaches), in a powerful combination with design sciences such as design thinking, architecture (business, information, data, product) and diagnostics to add radical transformational value to clients. Gnana has been working in both pure industry consulting as well as university-based, external consulting in the capacities of modeller/ analyst and project manager in several countries (mostly in United States, Australia, New Zealand, and to a lesser extent in Canada, Jamaica, India and Malaysia).

Francis P. Crawley, Chairman CODATA International Data Policy Committee (IDPC) and and Co-chair of the EOSC-Future/RDA Artificial Intelligence and Data Visitation Working Group (AIDV-WG)



A philosopher specialized in research ethics, integrity & methodology as well as in data/AI ethics & law. Expertise in EU, US, international and country-specific ethics, law, and patient and community interests in health-related research. Strong experience working closely with patients, communities, researchers, and policymakers across disciplines. domains, and geographic regions in establishing consortia, developing patient registries, contributing to the development of biobanks, drafting data management and data protection plans, and contributing to building data repositories. He is a Global Fellow in Medicines Development Program (GFMD) and currently a member if the Ethics Working Group of the International Federation of Associations of Pharmaceutical Physicians and Pharmaceutical Medicine (IFAPP).

Professor Perihan Elif Ekmekci M.D. Ph.D, Head of the History of Medicine and Ethics Department and Deputy Dean at TOBB University Medical Faculty, the Head of the International Chair in Bioethics/WMA Cooperation Center



TOBB ETU Medical Faculty. Dr. Perihan Elif Ekmekci is a member of the CODATA International Data Policy Committee (IDPC) and Co-chair of the EOSC-Future/RDA Artificial Intelligence and Data Visitation Working Group (AIDV-WG). She has expertise in the fields of medicine, ethics, and history of medicine. She holds an M.D. and Ph.D. and is currently affiliated with the Department of History of Medicine and Ethics at TOBB University Medical Faculty, Ankara, Turkey. Dr. Ekmekci's educational background includes a medical degree from Ankara University Faculty of Medicine, as well as a Ph.D. in Medical Ethics and History of Medicine from Ankara University. She has held positions as an Assistant Professor and currently serves as the Head of the History of Medicine and Ethics Department and Deputy Dean at TOBB University Medical Faculty, the Head of the International Chair in Bioethics/WMA Cooperation Center (formerly UNESCO Unit for Bioethics) o, member of Open Science Committee of TOBB ETU, and as the Chair of the Institutional Review Board (IRB) of TOBB University Medical Faculty. Dr. Ekmekci is affiliated and is an active member of several professional societies and scientific boards, including the World Association for Medical Law, the European Network of Research Ethics Committees, European Open Science Cloud Task Force, the International Forum of Teachers (IFT) of the International Bioethics Chair in Bioethics, and the Research Data Alliance.

Professor Natalie Meyers, Professor of the Practice Lucy Family Institute for Data & Society, University of Notre Dame, USA



Natalie Meyers serves as a Professor of the Practice in the Lucy Family Institute for Data & Society at the University of Notre Dame in the USA and holds an appointment as a Computational and Data Science Research Specialist at the San Diego Supercomputer Center University of California San Diego (UCSD) USA. Meyers' research focuses on FAIR data management and software preservation for model driven research. Prior to joining Notre Dame, she was co-owner of Content Innovations, LLC, a California certified woman-owned small business in San Francisco. Meyers was previously a programmer analyst and GIS specialist at UC Berkeley where she also received her Masters in Library and Information Systems (MLIS) with a concentration in Systems Analysis and Database Design. She also holds an MA in English from University of Wisconsin, Milwaukee.

Professor Valery Sokolchik, Professor of Bioethics, Belarusian Medical Academy of Postgraduate Education; Minsk, Belarus



Belarusian Academy of Science (Institute of philosophy), Belarusian Medical Academy of Postgraduate Education (Department of Public Health and Healthcare), Head of the Republican Centre of Bioethics – Minsk, Belarus. Professor Sokochik conducts trainings on bioethics, medical ethics, methodology of science and logic with medical doctors, medical researchers, members of research ethics committees, healthcare managers and PhD students. Scientific interests – bioethics and medical ethics, methodology of science, open science approach and research ethics committees (REC, IRB, IEC). Since 2017 she is the team-leader, manager, coach of several international and national projects devoted to the education in bioethics and human rights, supported by UNESCO, WHO, Council of Europe. She is also regularly engaged in scientific research projects (Raul Wallenberg Institute, Sweden, WHO/TDR, UNESCO, RDA, Belarus etc.). She received her studied at the Moscow State

University and received her PhD in Philosophy from the Belarusian State University. Dr. Sokochik is a member of the Research Ethics Committee (REC) of Belarusian Medical Academy of Postgraduate Education, member of the RDA (Research Data Alliance), member of Editorial Board of the Journal Medical Ethics (Russia); 2016 – 2020 Deputy-chairperson of the Committee on Bioethics of the Republic of Belarus; 2017 – 2020 National expert (Belarus) at DH-Bio (Council of Europe), and the longstanding representative of the National Bioethics Committee to the International Congress of Ethics Committees.

Dr. Charles (CJ) Woodford, Global Open Research Commons, RDA; World Data System International Technology Office Research Associate with Ocean Networks, University of Victoria, Canada



Dr. CJ Woodford works full-time as a World Data System International Technology Office Research Associate with Ocean Networks Canada at the University of Victoria. His background in science research informs research data management investigation, trials, and policy on an international scale and is a first step in changing his career trajectory to focus on improving the research arena across disciplines from a data management perspective. He also works part-time as the Education Coordinator for Discover the Universe, bringing astronomy education tools to classrooms in every corner of Canada.

Dr. Lili Zhang, Senior Research Scientist, Computer Network Information Center (CNIC), Chinese Academy of Sciences (CAS), Beijing, China



Lili Zhang senior research scientist at the Computer Network Information Center (CNIC) of the Chinese Academy of Sciences (CAS_ and a CODATA International Data Policy Committee (IDPC) member, Executive Director of the GOSC IPO (International Program Office of the Global Open Science Cloud Initiative). Dr. Zhang received her M.A. and Ph.D. in information management from Peking University, China, with a Dural Bachelor's Degree in Management Science and Economics from Nankai University, China. She was a visiting scholar at CIESIN, Columbia University, during 2017-2018. She is the PI of an NSFC Young Scientist Fund and collaborator for a CAS PIFI program and actively engages in a series of CAS and MOST-funded programs. Currently, as the CAS Global Open Science Cloud Project manager, her research focuses on open science and open data technologies, policies, and the information economy.