

Issues at the Intersection of Engineering and Human Rights

Date: November 18-19, 2024

Location: Online and In Person (NAS Building, Room 120)

Purpose:

Engineering touches every aspect of human life, and as a result, engineers have the power to help alleviate or exacerbate societal harms. This workshop will gather experts in the fields of human rights and engineering to discuss how engineers can promote the realization of human rights and how human rights can provide a valuable framework for addressing engineering challenges, including those related to climate, privacy, AI, equity, and public health.

MONDAY, NOVEMBER 18 (9 AM-6 PM ET)

8:30 am **Breakfast and Registration**

9:00 am **Welcome/Opening Remarks**

[John Anderson](#), President, National Academy of Engineering

[Charles F. Bolden](#), Founder & CEO Emeritus, The Charles F. Bolden Group LLC

9:15 am **Bridging Human Rights and Engineering**

The international human rights framework is a useful lens for examining societal challenges related to engineering, but what do we mean by “human rights,” and how does it differ from and overlap with concepts related to ethics, peace, and social justice? This conversation will seek to clarify these concepts and explore tools and strategies engineers can use to ensure human rights principles are applied in their work.

[Theresa Harris](#) (Moderator), Director, Center for Scientific Responsibility and Justice, American Association for the Advancement of Science

[Maya Carrasquillo](#) (Virtual), Assistant Professor of Civil and Environmental Engineering & PI of the Liberatory Infrastructures Lab, University of California, Berkeley

[Tyler Giannini](#), Clinical Professor of Law and Director, Human Rights Entrepreneurs Clinic, Harvard Law School

[Shareen Hertel](#), Wiktor Osiatyński Chair of Human Rights and Professor of Political Science, University of Connecticut

10:30 am **Break**

- 10:45 am** **Human Rights and Engineering Education**
Panelists will discuss ways in which they incorporate human rights principles into undergraduate and graduate engineering curriculum and provide examples of exercises they use in their teaching.
- [Muhammad Zaman](#) (Moderator), HHMI Professor of Biomedical Engineering and Director, Center on Forced Displacement, Boston University
[Bernard Amadei](#), Distinguished Professor and Professor of Civil Engineering, University of Colorado, Boulder; Founding President, Engineers Without Borders - USA
[Mira Olson](#), Associate Professor of Civil, Architectural and Environmental Engineering and Co-founder and Director, Technical Extension, Peace Engineering, Drexel University
- 11:45 am** **Special Lecture**
[Shirley Ann Jackson](#), Former President, Rensselaer Polytechnic Institute
- 12:00 pm** **Lunch**
- 12:45 pm** **Engineering to Promote Climate Justice**
This discussion will explore the intersections of engineering, human rights, and climate change, including opportunities for engineers to participate in minimizing climate-related harms and reconciling historical injustices.
- [Darshan Karwat](#), Associate Professor, School for the Future of Innovation in Society, College of Global Futures, Arizona State University in conversation with [Carlton Waterhouse](#), Professor of Law and Founding Director, Environmental and Climate Justice Center, Howard University School of Law
- 1:30 pm** **Addressing Inequities in Public Infrastructure**
This panel will explore how public infrastructure and policies for its implementation can give rise to disparities among communities, and what engineering, through a human rights lens, can do to reduce those disparities.
- [Davis Chacon Hurtado](#) (Moderator), Assistant Professor, School of Civil and Environmental Engineering & Human Rights Institute; Co-Director, Engineering for Human Rights Initiative, University of Connecticut
[Eric Buckley](#) (Virtual), Director of Oxygen Engineering, Build Health International
[Bethany Gordon](#), Assistant Professor, Civil and Environmental Engineering and Adjunct Assistant Professor, Evans School of Public Policy and Governance, University of Washington
[Kimberly Jones](#), Professor, Department of Civil and Environmental Engineering, Howard University
- 2:45 pm** **Break**

- 3:00 pm** **Activity Session: A Case Study on a Human Rights-Based Approach to Engineering and Inclusive Transportation**
In recent decades, researchers and policymakers have increasingly recognized how transportation affects social inclusion for individuals with disabilities and the aging population. This session will examine how a human rights-based approach to engineering—grounded in principles of distributive justice, participation, accountability, indivisibility of rights, and responsibilities of duty-bearers—can inform inclusive transportation infrastructure design. Participants will explore strategies to incorporate these principles into the public and private sector dimensions of transportation systems design.
Facilitators: [Davis Chacon Hurtado](#), [Michael Ashley Stein](#), and [Shareen Hertel](#)
- 4:45 pm** **Day One Observations and Wrap Up**
[Glen Daigger](#), Professor of Engineering Practice, University of Michigan and President and Founder, One Water Solutions, LLC
- 5:00 pm** **Networking Hour**

TUESDAY, NOVEMBER 19 (9 AM- 4:15 PM ET)

- 8:30 am** **Breakfast and Registration**
- 9:00 am** **Welcome & Day One Recap**
[Alton D. Romig, Jr.](#), Executive Officer, National Academy of Engineering
[Deb Niemeier](#), Clark Distinguished Chair in Energy and Sustainability, University of Maryland, College Park
- 9:15 am** **Participation and Inclusion in Engineering Decision-Making**
Meaningful public participation is considered a foundational human rights principle and underlies the advancement of human rights more broadly. Early and continuous community participation—particularly from groups that have been historically marginalized—is essential for responsible engineering. Panelists will discuss the value of and opportunities for facilitating inclusive community engagement.

[Amy Smith](#) (Moderator), Founding Director, MIT D-Lab and Senior Lecturer, Mechanical Engineering, Massachusetts Institute of Technology
[John B. Kleba](#), Full Professor of Social Sciences, Aeronautics Technological Institute (Brazil)
[Michael Ashley Stein](#), Co-Founder & Executive Director, Harvard Law School Project on Disability
- 10:30 am** **Break**

- 10:45 am** **Seeking Justice and Remediating Human Rights Harms**
Panelists will examine issues of accountability for engineering outcomes resulting in human rights violations, ways to mitigate past harms, and what options—both formal and informal—exist to assess engineering impacts on society and remedy harms.
- [Betsy Popken](#) (Moderator), Executive Director, Human Rights Center, University of California, Berkeley School of Law
[Jay Aronson](#), Professor of Science, Technology, and Society & Founder and Director, Center for Human Rights Science, Carnegie Mellon University
[Julie Owono](#), Executive Director, Internet Sans Frontières & Inaugural Member, The Oversight Board (Meta)
[Jose Torero](#) (Virtual), Professor & Head of Department, Civil, Environmental & Geomatic Engineering, University College London
- 12:00 pm** **Lunch**
- 1:00 pm** **Integrating Human Rights Principles into Systems and Product Design**
Panelists will discuss how human rights norms and principles such as privacy, accessibility, and nondiscrimination can be considered throughout the design process of new systems and technologies.
- [Lindsey Andersen](#) (Moderator), Associate Director, Human Rights, Business for Social Responsibility
[Alice Agogino](#), Roscoe and Elizabeth Hughes Professor of Mechanical Engineering, Emeritus, University of California at Berkeley
[Tamara Brown](#), Former Vice President, Sustainability, Linde (Retired)
[Wendy Hui Kyong Chun](#), Canada 150 Research Chair in New Media; Professor, School of Communication; and Director, Digital Democracies Institute, Simon Fraser University
[Katie Shay](#), Associate General Counsel & Director of Human Rights, Cisco
- 2:15 pm** **Break**
- 2:30 pm** **Activity Session: How to Conduct a Human Rights Assessment of AI**
The session will begin with a tutorial to prepare attendees to engage in the practice session, including an introduction to human rights and their connection to AI, followed by an overview of human rights assessments, a comparison of human rights assessments to other audit frameworks, and a walkthrough of human rights assessment methodology, using a practical example. Attendees will assemble into groups and assess the human rights risks of a journalist using (large language models) LLMs to report on Covid-19 and provide recommendations for how engineers developing the LLM, the media organization procuring the LLM, and the employee using the LLM might mitigate those risks.
Facilitators: [Lindsey Andersen](#) and [Betsy Popken](#)
- 4:00 pm** **Summary Observations and Closing Remarks**
[Wesley Harris](#), Vice President, National Academy of Engineering; Charles Stark Draper Professor of Aeronautics and Astronautics, Massachusetts Institute of Technology
- 4:15 pm** **Meeting Adjournment**