

Panel Series

Engineering Solutions for the Next Pandemic: Exploring Ethics Concerns

In collaboration with the American Association of Engineering Education (ASEE) Ethics Division, and the Association for Practical and Professional Ethics (APPE), the National Academy of Engineering Online Ethics Center (OEC) is hosting a series of panel discussions on “Engineering Solutions for the Next Pandemic: Exploring Ethics Concerns.”

We'll explore how engineers might prepare for future pandemics, through new engineering solutions developed with the insight and knowledge gained during this current crisis. What will it take to develop future solutions that adhere to fundamental principles and codes of engineering ethics? What can we learn from this situation that can inform engineering education?

I. Standards of ethics for R&D, infrastructure, and systems during a crisis

June 19, 2:00-3:15PM (Eastern)

To register in advance for this webinar (required):

https://nasem.zoom.us/webinar/register/WN_gW2enrh2QTi_L3SrYQbZsg

About this particular panel:

People are asking FDA and other institutions to “change the rules” because of the extenuating circumstances of the Covid-19 pandemic. Others would argue that it’s never appropriate to compromise the rules of ethics we have already agreed upon. That, in fact, times of crisis are when we should adhere most closely to principles of ethics in guiding our choices and behaviors, as they are directly challenged by competing interests and threats.

This panel will consider how important is it to adhere to established ethics guidelines and codes for engineering R&D during a pandemic, such as we are facing now. What are the questions of ethics that arise when we change the rules in a crisis? Right now, as we proceed to develop and institute responses to the virus, lacking is a common understanding, a shared social agreement, on how far we can deviate from acceptable ethical norms. Compromises are being made because of the crisis context. What engineering standards still apply? What engineering standards are to be considered malleable because of a crisis? Do engineers have a crisis standard that comes into play?

Guardrails are needed to ensure safety while still moving ahead quickly. And since another pandemic is likely in the future, how might crisis standards of ethics help us to prepare?

Panelists

- Steve Ceccio, Vincent T and Gloria M Gorguze Professor of Engineering, Professor of Naval Architecture and Marine Engineering, Professor of Mechanical Engineering and Applied Mechanics, Associate Dean for Research, University of Michigan, Ann Arbor
- Angela Bielefeldt, P.E., Professor, Engineering and Applied Sciences, University of Colorado-Boulder
- Carolyn Compton; Carolyn Compton, M.D., Professor
- Jonathan Beever, Assistant Professor of Ethics and Digital Culture, Department of Philosophy and the Texts & Technology Ph.D. Program, University of Central Florida. Co-founder and director of the UCF Center for Ethics

II. Ethics of Challenge Studies, Avalanche Testing and other Approaches to Vaccine Development

June 24, 1:00-2:15PM (Eastern)

To register in advance for this webinar (required):

https://nasem.zoom.us/webinar/register/WN_OGFctPz6SfawpRFI8F5hwQ

About this particular panel:

We have had pandemics in the past yet we were not prepared for Covid-19. Solutions are being sought with a sense of urgency. For example, human challenge testing will accelerate the vaccination development process. But who are the test subjects to be? At what cost to them is their volunteerism? Testing schemes suggests a solution is needed quickly, but is it right to put risk assessments on the volunteers to evaluate? Short of a vaccine, the “controlled avalanche” approach is proposed to gain herd immunity. Given the need to find solutions quickly, must ethics must be compromised? Such alterations to ethics could have profound implications for engineering practice in terms of R&D supply chains, manufacturing, and production.

Panelists

- Peter Schwartz, Director for Bioethics, Indiana School of Medicine

- Ezequiel Garfinkel, Global Head Ethics, Risk & Compliance, Novartis Research & Development
- David Allison (NAM), Dean & Provost Professor, Indiana University School of Public Health-Bloomington
- Arthur Caplan, William F and Virginia Connolly Mitty Professor, Founding Head, Division of Medical Ethics, NYU School of Medicine
- Stephanie Bird, Founding Editor, *Science and Engineering Ethics*

III. Social (in)justice, disparities in Covid-19 health care delivery

June 26th 1:00-2:00PM (Eastern)

To register in advance for this webinar (required):

https://nasem.zoom.us/webinar/register/WN_OjehYfH-ReSktPENkWfYdQ

About this particular panel:

Racial and social-economic dynamics lack of access to the internet where teaching online is presumed as a way to continue education. Could engineers have seen this coming? Do engineers have a role to play in avoiding the stark social and racial disparities of pandemics such as Covid-19? In anticipation of future pandemics, what engineering solutions might be brought to bear to address and prevent these kinds of discrepancies, and the associated injustices, for Black, Hispanic and Indigenous Americans? Some would argue for the importance of engaging vulnerable communities in engineering solutions. And that the history of socio-technical systems ought to inform engineering solutions.

Panelists

- Cato T. Laurencin, University Professor, Albert and Wilda Van Dusen Distinguished Professor of Orthopaedic Surgery, University of Connecticut; Director, The Raymond and Beverly Sackler Center for Biomedical, Biological, Physical and Engineering Sciences; Chief Executive Officer, The Connecticut Convergence Institute for Translation in Regenerative Engineering
- Lisa M. Lee, Associate Vice President for Scholarly Integrity and Research Compliance, Research Professor, Department of Population Health Sciences, Virginia Tech. Formerly: Inaugural Chief of Bioethics, Walter Reed Army Institute of Research & Executive Director of the Presidential Bioethics Commission
- Monica Peek, *Associate Professor of Medicine*, University of Chicago & Associate Director, Chicago Center for Diabetes Translational Research

- C.K. Gunsalas, Director, National Center for Professional and Research Ethics, University of Illinois Urbana-Champaign & Research Professor in the Coordinated Science Laboratory and Professor Emerita in the College of Business
- Karletta Chief, Assistant Professor and Assistant Specialist in the Department of Soil, Water, and Environmental Sciences at the University of Arizona in Tucson, AZ; a Diné hydrologist, best known for her work to address environmental pollution on the Navajo Nation and increase the participation of Native Americans in STEM.
- Paloma Beamer, Associate Professor, College of Public Health Chemical & Environmental Engineering, University of Arizona, Associate Editor for the Journal of Exposure Science and Environmental Epidemiology. President of the International Society of Exposure Science; lifetime member of the Society for Hispanic Professional Engineers (SHPE) and the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS).