2021 IEEE International Symposium on Ethics in Engineering, Science and Technology (ETHICS 2021)

Virtual Conference
28 – 31 October 2021

IEEE Catalog Number: CFP21ETI-POD
ISBN: 978-1-6654-0802-8

Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number: CFP21ETI-POD
ISBN (Print-On-Demand): 978-1-6654-0802-8
ISBN (Online): 978-1-6654-0801-1

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

IEEE ETHICS-2021

Table of Contents

Preliminaries

Welcome Messages from ...

Clint Andrews, SSIT President

Greg Adamson, Conference Chair

Joe Herkert, Technical Program Chair

Murty Polavarapu, Organizing Chair

Marc Cheong, Publications Chair

Record of Committee Members and Organizers

Sponsor Acknowledgements

ISTAS21 Conference Program

Keynote

Top of Mind Ethics (TOME)

Will Griffin

Corporate social responsibility and engineering education 1

Qin Zhu, Jessica M. Smith, Larkin Martini, Carrie McClelland, Linda Battalora, Greg Rulifson, Marie Stettler Kleine, Scott West, Juan Lucena, Ali Ilhan, Stephanie Claussen & Rachel Geiger.
Moderated by Jessica M. Smith.

Panel – Role of ethics officers and ethics programs 4

Ed Carr, Anne Harris, Gretchen Winter & Chitra Radhakishun. Moderated by Greg Adamson.

Author meets the critics – '*Extracting Accountability: Engineers and Corporate Social Responsibility*' by Jessica Smith 9

Author: Jessica M. Smith.
Critics: Sean Field, Angela Bielefeldt & Elaine Englehardt. Moderated by John Impagliazzo.

Ethical and Responsible Research program (ER2) at the US National Science Foundation 19

Wenda B auchspies, Julie S impson, Grisselle C enteno, K ingsley A . Re eves, Jr., Brent J esiek, Stephanie Claussen, Carla Z oltowski, Qin Zh u & S cot t Streiner. Introduction by Katherine Duncan.

Moderated by Wenda Bauchspies.

Author meets the critics – '*Engineering Ethics: Contemporary and Enduring Debates*' by Deborah Johnson 21

Author: Deborah Johnson.
Critics: Keith Miller, Dayoung Kim & Lambèr Royakkers. Moderated by Brent Jesiek.

Panel – Well-being and ethically aligned design 25

Bogdana Rakova, Univ. Prof. Dr. Sarah Spiekermann, Prof. Melodena Stephens & Deborah Hagar MBA.
Moderated by John Havens.

Integrating virtue ethics into STEM Courses 27

Dr. Erin Henslee, Dr. Adetoun Yeaman & Dr. Joseph Wiinikka-Lydon. Moderated by Mark A. Vasquez.

Papers Session 1

Frameworks for Technology, Ethics, and CSR

Market Value(s): Is there room for social responsibility in the profitable tech company? 29

Steven Kelts

Intersections between ethics and diversity, equity, and inclusion in engineering 37

Justin Hess, Brent Jesiek, Andrew Whitehead, Andrew Katz and Donna Riley

Lessons learned from DuPont's role in PFOA exposure 42

John Coburn

#StopHateForProfit and the ethics of boycotting by corporations 43

Theodore Lechterman, Ryan Jenkins, and Bradley Strawser

Papers Session 2

Ethics and Technology

Responsible use of agile robots in public spaces 44

Azalea Yunus and Stacy Doore

How do AI systems fail socially?: An engineering risk analysis approach 49

Shalaleh Rismani and Ajung Moon

Ontological foundations of the Ethics of Technology 57

Paul Siemers and Greg Adamson

Privacy is a feminist issue: Reconsidering data sharing in menstrual self-tracking apps 64

Alexis Fabricius

Papers Session 3

Engineering Ethics, Responsibility, and Industry

Who can I turn to? Engineers navigating ethical dilemmas at work 65

Cindy Rottmann, Emily Moore, Andrea Chan and Dimpho Radebe

Faculty perspectives on frameworks of responsibility in their disciplines 70

Jonathan Beever, Stephen Kuebler, Laurie A. Pinkert and Lakelyn Taylor

Towards an ethics in action: App Design Challenge as a tool in STEM ethics education 72

Raquel Diaz-Sprague and Alan Sprague

Creating and integrating an ethics bootcamp for engineering and business students 74

Jenifer Blacklock, Michael Vieregge, Jennifer DeBoer, Holly Brunkal and Paula Mann

Papers Session 4

Innovative Methods for Engineering Ethics Education

Exploring ethical decision-making in group settings with real-life case studies 77

Diana Adela Martin and Gunter Bombaerts

Iteration and inquiry: Toward a meaningful model of ethical engagement for engineering and computing students 78

Alexandra Morrison and Charles Wallace

Infusion of ethics in undergraduate engineering education through industry-sponsored projects 83

Rebecca Bates, Robert Sleezer and Lin Chase

The role of the emotions in teaching engineering ethics 84

Luke Fernandez