

Το Εθνικό Μετσόβιο Πολυτεχνείο, το Πολυτεχνείο Κρήτης και οι Πολυτεχνικές Σχολές της χώρας, κατόπιν συνεννόησης των Πρυτάνεων και των Κοσμητόρων τους, προσκαλούν τα μέλη των αντίστοιχων κοινοτήτων να παρακολουθήσουν την ακόλουθη ομιλία, παν-πολυτεχνικού ενδιαφέροντος, που διοργανώνεται με πρωτοβουλία του ΕΜΠ.

Διαδικτυακή Ομιλία - Webinar

Engineering a Better World for All Humanity



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Recipient of **Bernard M. Gordon Prize 2022** of the **National Academy of Engineering** (NAE): “...For creating an innovative education program that prepares students to become future engineering leaders who will address the NAE Grand Challenges of Engineering”.

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Zoom Webinar Link: <https://grnet.zoom.us/j/65674249982>

YouTube Live Stream: <https://www.youtube.com/watch?v=4EH0WpNwKpw>

Abstract

Engineering and technology are driving discovery and innovation in practically all disciplines at an unprecedented pace, one that is certain to accelerate even further with advances in computing of all types, and the increasing relevance of AI and data sciences. Outstanding technical competence is needed to keep driving this transformation - we have termed this as the need to *hug the exponential*. In the constant and inexorable intertwining of the interface of technology with society, humanity, and the living environment, engineering has become the enabling discipline for solving *grand-challenge-like* problems, including increasingly human-centric ones. This *engineering +* mindset is permeating a vast variety of disciplines and areas, creating particularly fertile grounds for collaboration and innovation across the sciences, the professions and the arts.

At the same time, choosing what problems to focus to solve is an ethical decision. This means that as we educate the engineers, innovators and technologists of tomorrow, we should also help them with the building of *character*, shaped by a deep understanding of the human nature, ethics, and the impact, intended and unintended of engineering and technology to society, humanity and the living environment. In all these endeavors, with deep technological and human dimensions, we need to constantly re-invent, innovate and

lead. Together, competence and character spell trust, and the creation of *trustworthy engineers*, more urgently needed today than ever before.

This webinar addresses key, salient features of these ideas and their relevance to engineering education and research. In particular it focuses on the development of the associated mindsets for our undergraduate engineering students, as articulated in the Grand Challenges Scholars Program, which aims at the creation of such engineering graduates.

Βιογραφικό

Yannis C. Yortsos is the Dean of the USC Viterbi School of Engineering and the Zohrab Kaprielian Chair in Engineering, a position he holds since 2005. Prior to that he served from 2001 to 2005 as Associate Dean and then as Sr. Associate Dean for Academic Affairs. Yortsos joined the USC faculty of Chemical and Petroleum Engineering in 1978. He served as chair of the Department of Chemical Engineering between 1991 and 1996. Since 1995 he also holds the Chester Dolley Professorship.

He received a BS (Diploma) degree in Chemical Engineering from the National Technical University of Athens, Greece, and MS and PhD degrees from the California Institute of Technology, all in chemical engineering. His research area is in fluid flow, transport and reaction processes in porous media with specific application to the subsurface.

He was elected to the National Academy of Engineering in 2008, where he has also served as secretary, vice-chair and chair of Section 11. Since July 2017, Yortsos serves as a member of the NAE Council. In 2011 he was awarded the distinction of honorary member of the AIME, in 2013 he was elected as Associate member of the Academy of Athens, in 2014 he received the Ellis Medal of Honor and since 2017 he holds an honorary degree from Tsinghua University.

He was on the peer review team for the Yucca Mountain Nuclear Waste Disposal and served on the NRC Committees for the 2017 report on a New Vision for Center-Based Engineering Research as well as the 2017 report on The Value of Social, Behavioral, and Economic Sciences to National Priorities. He currently serves a member of the NSF Engineering Advisory Committee.

As dean of engineering, he articulated in 2008 the concept of Engineering+, positioning engineering as the enabling discipline of our times, and has been actively engaged in the effort to “change the conversation about engineering”. Along with colleagues at Duke University and Olin College, he co-founded in 2009 the Global Grand Challenges Scholars Program, now adopted by many universities in the US and overseas. He organized and hosted at USC in Fall 2010 the NAE Second Grand Challenges Summit, which spurred in 2013 the Global Grand Challenges Summits. These are bi-annual meetings of the NAE, the Royal Academy of Engineering and the Chinese Academy of Engineering, on the organizing committees of which he has continuously served.

Between 2012 and 2017, Yortsos was the chair of the Diversity Committee of the Engineering Deans Council, in which capacity he has spearheaded an engineering diversity initiative, now adopted by more than 210 engineering deans nationwide. In recognition of these initiatives, the USC Viterbi School of Engineering received in 2017 the ASEE President’s Award, and was one of the four engineering schools nationwide that received the ASEE Award for Excellence in Veterans in Engineering. Yortsos is the PI of the NSF I-Corps Innovation Node Los Angeles, established in 2014 as a partnership between USC, Caltech and UCLA. Between 2011 and 2017 he served on the Executive Committee of the Engineering Deans Council (2011-2017) and on the Executive Committee of the Global Engineering Deans Council (2012-2016).