

Vision Statement of Huiming Yin

My vision as a potential member of the EMI Board of Governors (BoG) is to actively promote research and the application of scientific and mathematical principles in mechanics to address existing and emerging engineering and societal issues. This aligns with the mission of EMI, which has been nurturing generations of scholars, engineers, and educators; and confronting challenges from emerging topics of artificial intelligence, health humanities, and extraterrestrial explorations. In this constantly changing world, I firmly believe that Engineering Mechanics is a foundation to understand, predict and design the new systems, and that the EMI BoG can guide the growth and prosperity of the EMI Community:

EMI must continue to serve as the pivotal center of engineering mechanics by providing an interdisciplinary forum for researchers, practicing engineers, industry representatives, citizen groups, public officials and others. I started to participate in the EMI/EMD conferences during my PhD studies in 2000-04, and have constantly chaired EMI Conference Minisymposia during my faculty position in 2008-present. EMI Conferences have been the major avenue for my group to exchange cutting-edge research with my peers. For instance, my students have won over 10 awards in EMI Student Competitions, including 6 First Place/Winner awards. Through these opportunities, new ideas are exchanged, theories are challenged, collaborations are born, all of which are essential in creating a vibrant, growing research community.

In addition, a fundamental role for EMI as the leading institution in engineering mechanics is to create new opportunities for our community and support the emerging research initiatives. In 2013-15, when I served as Chair of the Modeling Inelasticity & Multiscale Behavior (MIMB) Committee, with help from other members, we established the 1st annual Student Paper Competition of EMI MIMB in ASCE EMI Conference 2015, which has been continued since then. When I founded the Columbia Site of NSF Industry/University Cooperative Research Center (IUCRC) - Center for Energy Harvesting Materials and Systems (CEHMS), we initiated multiple projects which have been highly valued by EMI and NSF. All of these experiences are examples of my commitment to promoting groundbreaking ideas from the next generations through EMI.

Finally, the industry involvement will be critical for the growth of EMI communities in terms of research problem identification, technology advancements and transfer, student training and career development, and financial support to research and EMI conferences. As the Site Director of CEHMS since 2017, I have chaired international conferences and events with many industry participants. I plan to continue working collaboratively with other BoG officers in order to increase the interactions and collaborations between academia and industry within the EMI.

I believe my service to EMI and ASCE for 17 years demonstrate my dedication to our EMI community. I consider it a great honor and commitment to serve the EMI. If elected as member of the EMI BoG, I will partner with the other BoG members to increase the engagement of the different stakeholders to promote EMI, and work with our engineers, researchers, and scientists from different disciplines, with particular attention to younger members and student members, to achieve EMI's mission and advance its vision.

Short Bio of Huiming Yin

Dr. Huiming Yin received his Bachelor degree in Engineering Mechanics from the Hohai University, China in 1995, his Master's degree in Solid Mechanics from the Peking University, China in 1998, and his PhD degree in Structures, Mechanics and Materials from The University of Iowa in 2004. Before joining Columbia University as an Assistant Professor in 2008, Dr. Yin was employed by California Department of Transportation (Caltrans) as a Civil Engineer in 2006-08 and by the University of Illinois at Urbana-Champaign (UIUC) as a Postdoctoral Research Scientist in the Department of Civil and Environmental Engineering in 2004-06.

As a professor in Columbia's Department of Civil Engineering and Engineering Mechanics since 2008, Dr. Yin pioneered the research of energy harvesting in civil infrastructure and received the National Science Foundation CAREER Award in 2010. He was promoted to Associate Professor in 2013 and well recognized as a leader in the field of mechanics of modern structures and materials. He established the Sustainable Engineering and Materials Laboratory and founded the NSF Industry/University Cooperative Research Center (IUCRC) – Center for Energy Harvesting Materials and Systems (CEHMS) at Columbia site. He has been registered as a Professional Engineer (PE) of Civil Engineering in the states of California and New York, and has worked in both the industry and within academia on the subjects of sustainable and energy efficient infrastructure. His team has developed new methods and theories to characterize, simulate and characterize multi-physical behavior of advanced infrastructural materials.

As a researcher and scholar, Dr. Yin has authored 120 journal papers, with the ASCE Journal of Engineering Mechanics being one of his favorites and has included a significant portion of his publications. His research work has been selected as the Editor's Choice in the journal Engineering Mechanics (2022) and as a featured paper in Journal of Applied Physics (2024). Currently, his work in Singum Model of Lattice Materials has been growing into an emerging research area. He chaired the conference of Energy Harvesting from Infrastructure and Ocean Systems (EHIOS) in 2019 and co-chaired two international conferences in 2022.

Dr. Yin has written 3 major books, which have produced major impact in mechanics and materials science and engineering. His textbook titled "The Introduction to Micromechanics of Composite Materials" published in 2016 has been used by several universities and was requested to be translated into Chinese by the publisher. His recent books "Inclusion based boundary element method (iBEM)" published in 2022 and "Building Integrated Photovoltaic Thermal Systems: Fundamentals, Designs and Applications" published in 2021 include his major fundamental and applied research in the past decades, and have been well received by the academic and industry research communities.

Dr. Yin has been actively involving ASCE Engineering Mechanics Institute (EMI) in the past two decades. From 2013 to 2015, he served as Chair of the Modeling Inelasticity & Multiscale Behavior (MIMB) Committee, and he is an active member of the Elasticity, Inelasticity, and Nanomechanics and Micromechanics Committees. He has been organizing technical sessions at various EMI Annual conferences and co-chaired the Minisymposium of Modeling of Multiphysics-Multiscale-Multifunctional (4M) of Engineering Materials and Structures for 9 consecutive years since 2016. He is a pro-active member of the EMI community and will continue to promote EMI and mechanics within ASCE, nationally, and internationally.