



JOHNS HOPKINS
WHITING SCHOOL
of ENGINEERING

Civil and Systems Engineering

THE JOHNS HOPKINS UNIVERSITY
ROSS B. COROTIS LECTURE FOR
CIVIL AND SYSTEMS ENGINEERING

THE UNIVERSAL MODELING FRAMEWORK FOR SEQUENTIAL DECISION PROBLEMS: THE NEXT GENERATION OF AI

WARREN B. POWELL

PROFESSOR EMERITUS, PRINCETON UNIVERSITY
CHIEF INNOVATION OFFICER, OPTIMAL DYNAMICS

**MONDAY, NOVEMBER 3, 2025
5 TO 6 P.M.**

HOMWOOD CAMPUS,
HACKERMAN HALL B17

Reception to follow (by RSVP only).

THE UNIVERSAL MODELING FRAMEWORK FOR SEQUENTIAL DECISION PROBLEMS: THE NEXT GENERATION OF AI

Sequential decisions are a universal problem class that arise in the context of any human activity, including engineering and the sciences, health services, medical decision making, transportation, business and finance, although in this talk Powell will emphasize applications in energy systems. Despite their universal applicability, the science of making decisions in the presence of dynamic information has been buried in the academic literature under the weight of arcane mathematics and complex algorithms.



WARREN B. POWELL
PROFESSOR EMERITUS,
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DYNAMICS

Warren B. Powell is Professor Emeritus at Princeton University, where he taught for 39 years, and is currently

a co-founder and Chief Innovation Officer at Optimal Dynamics as well as Executive-in-Residence at Rutgers Business School. He was the founder and director of CASTLE Lab, which focused on stochastic optimization with applications to freight transportation, energy systems, health, e-commerce, finance and the laboratory sciences, supported by over \$50 million in funding from government and industry. Powell pioneered a new universal framework that can be used to model any sequential decision problem, including the identification of four classes of policies that spans every possible method for making decisions, which is documented in his latest book with Wiley: Reinforcement Learning and Stochastic Optimization: A unified framework for sequential decisions. He has published more than 250 papers, five books, and

produced more than 60 graduate students and post-docs. He is the 2021 recipient of the Robert Herman Lifetime Achievement Award from the Society for Transportation Science and Logistics and the 2022 Saul Gass Expository Writing Award. Powell is a fellow of Informs, and the recipient of numerous other awards.

ABOUT THE ROSS B. COROTIS LECTURE

The Ross B. Corotis Lecture for Civil and Systems Engineering was established at Johns Hopkins University to commemorate the engineer who established the University's Department of Civil and Systems Engineering. The lecture is endowed by alumni, faculty, and friends of the department in honor of prominent structural engineer, Ross B. Corotis, which contributes to the ongoing guest seminars in the Department of Civil and Systems Engineering and provides for these special lectures.

Ross B. Corotis, NAE, is an emeritus professor of engineering at the University of Colorado Boulder. He researches the coordinated roles of engineering and social science in framing and communicating long-term hazard risks and resiliency for the built environment. With three degrees from MIT, he was on the faculty at Northwestern University, established the Department of Civil Engineering at Johns Hopkins University, and was Dean of Engineering at CU Boulder.

He has chaired committees on structural safety for ASCE and ACI, the Advisory Committee of IASSAR, served as science advisor for the Department of State in Washington, D.C., and was editor of the journals Structural Safety and ASCE's Journal of Engineering Mechanics. For the National Academies, he served on the Building Research Board, the Disasters Roundtable, the Board on Infrastructure and the Constructed Environment, chaired the Laboratory Assessment Board, was founding chair of the Committee on NIST Technical Programs, and was chair of the Civil & Environmental Engineering section of the NAE.

He is a registered professional engineer and structural engineer, Distinguished Member of ASCE, Fellow of the Structural Engineering and Engineering Mechanics Institutes, recipient of the ASCE OPAL Lifetime Achievement Award in Education, and author of more than 250 publications.



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