

Joseph M. Sussman

Dr. Joseph M. Sussman is the JR East Professor (endowed by the East Japan Railway Company) in the Department of Civil and Environmental Engineering and the Engineering Systems Division at the Massachusetts Institute of Technology (MIT), where he has served as a faculty member for 38 years. He is the author of *Introduction to Transportation Systems*, a graduate text published in 2000, in use at a number of universities in the U.S. and abroad. His book *Perspectives on Intelligent Transportation Systems (ITS)* was published in 2005. Sussman received the Roy W. Crum Distinguished Service Award from TRB, its highest honor, “for significant contributions to research” in 2001, and the CUTC Award for Distinguished Contribution to University Transportation Education and Research from the Council of University Transportation Centers in 2003.

Dr. Sussman specializes in the study of “Complex, Large-Scale, Interconnected, Open, Sociotechnical” (CLIOS) Systems, working in many applications areas, and has developed the CLIOS Process to study such systems. He has worked extensively on Intelligent Transportation Systems (ITS), helping to build the U.S. national program. While serving as the first Distinguished University Scholar at IVHS AMERICA (1991-92), he was a member of the core group that wrote the Strategic Plan for IVHS in the U.S., a twenty-year plan for research, development, testing and deployment which has shaped the U.S. ITS program. He has worked on the development of an “intelligent corridor” in Bangkok, a comparison of ITS programs in Western Europe, Japan and the U.S., commercial vehicle operations, building regional ITS architectures, emergency response and institutional issues concerning ITS. He was the program chair of the ITS America Annual Meeting in 2000, and has conducted short courses in ITS for practicing professionals in the U. S. and abroad. In 2002 ITS Massachusetts named its annual “Joseph M. Sussman Leadership Award” in his honor.

Dr. Sussman has focused recently on developing a new methodology for regional strategic transportation planning (RSTP) as a special case of the CLIOS Process, integrating ideas from strategic management, scenario-building, and technology architectures, and applying it to cases in the U.S. and abroad. Currently his work in this area deals with transportation, technology and sustainability in Mexico City and Kuala Lumpur, Malaysia.

His research in railroads focuses on service reliability, rail operations, maintenance, high-speed rail (HSR), and risk assessment; he has had a major impact on the railroad industry in the U.S. and abroad, and has several prize-winning papers. He has worked with the Union Internationale des Chemins de Fer (UIC), on technology scanning for the international freight and passenger railroad industry.

Dr. Sussman chaired the TRB committee overseeing the Federal Railroad Administration’s R&D program from 1996 to 1999 and has chaired a TRB panel reviewing the federal transportation strategic plan for R&D. Further, he chaired a TRB Task Force which produced a major report entitled “Airport System Capacity -- Strategic Choices” in 1990.

He has worked on the application of computers to engineering problem-solving, specializing in simulation methods and their application to the transportation area, and he contributed to the development of ICES (Integrated Civil Engineering System), among the most widely-used computer systems in the engineering field. He has developed and taught undergraduate and graduate subjects in transportation, engineering systems, information systems, simulation methods, intelligent transportation systems, and technology and policy, and has written extensively on transportation education philosophy and program design. In 1997 he won the Civil and Environmental Engineering Department's Effective Teaching Award. In 2002 he won the Technology and Policy Student Society "Faculty Appreciation Award" for his design and teaching of a new required subject called "Introduction to Technology and Policy". He has served on review panels for transportation programs at Northwestern, the University of Toronto, Cornell, and the University of Michigan (chair). He currently serves on advisory committees at CCNY and Cal-IT², a joint venture of UC-Irvine and UC-San Diego.

Dr. Sussman earned a B.C.E. from City College of New York in 1961, an M.S.C.E. from the University of New Hampshire in 1963, and a Ph.D. in Civil Engineering Systems from MIT in 1967. He joined the MIT faculty in 1967. From 1977 to 1979, Professor Sussman served as the Associate Dean of Engineering for Educational Programs. From 1980 to 1985, he served as Head of the Department of Civil Engineering at MIT. From 1986 to 1991, he served as Director of the Center for Transportation Studies (CTS) at MIT. During his term, research volume grew by 400%, to more than \$4 million annually at that time, reflecting an important expansion of CTS' research agenda.

Dr. Sussman is a member of the American Society of Civil Engineers, Transportation Research Forum, Transportation Research Board (Executive Committee chair in 1994; member, 1991-1998), ITS America (Board of Directors, 1995-2001) and ITS Massachusetts (Board of Directors, 1996-2001). He co-founded Multisystems of Cambridge, MA in 1966 (now part of Transystems)

Dr. Sussman's webpage may be accessed at <http://cee.mit.edu/index.pl?id=2378&isa=Category&op=show>. His book sites and MIT OpebCourseWare sites may be accessed here.

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