



UNIVERSIDADE DE COIMBRA

ENERGIA PARA A SUSTENTABILIDADE
ENERGY FOR SUSTAINABILITY - EFS

PALESTRA PELO PROF STUART BATTERMAN

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Environmental and Public Health Impacts of Urban Transportation Infrastructure

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Motorized transportation and freight-related infrastructure in cities, including cars, buses, trucks, trains and ships, provides the mobility and services our economy and culture has demanded. We now recognize that this infrastructure leads to many environmental and health impacts. Despite major emission reductions from cars and trucks, for example, traffic-related emissions are the number one air quality problem in urban areas. These emissions continue to degrade local and regional air quality, cause violations of air quality standards, and are associated with many health effects, including asthma, cardiovascular problems, and adverse birth outcomes. Increases in vehicle distance traveled (VMT) and worsening traffic congestion pose significant challenges to the road infrastructure. Effects of toxic and particulate matter emissions in diesel engine exhaust are a special concern. Recent reports showing that asthma and allergy rates are up to 50% higher for children living near major highways, among many other health findings, has led to actions to greatly reduce emissions, to use buffer zones that separate homes and schools from highways, to install advanced air filtration systems, and to restrict outdoor play/exercise time. This seminar will review air quality issues related to transportation infrastructure, discuss methods used to analyze the spatial impacts of traffic, and present designs and results of research investigating vehicle-related emissions and health effects, including ongoing studies.



Stuart Batterman is Professor of Environmental Health Sciences at the University of Michigan (UM) School of Public Health. He has also holds, or has held appointments in Civil and Environmental Engineering at UM, the Faculty of Science and Technology at the University of Coimbra, Portugal, and at the Nelson Mandela School of Medicine in Kwa-Zulu Natal, Durban, South Africa. He has a B.S. in Environmental Sciences from Rutgers University, and M.S. and Ph.D. in Civil and Environmental Engineering from the Massachusetts Institute of Technology. His previous experience includes appointments at Texas A&M University and the International Institute for Applied Systems Analysis in Austria. He has been engaged in occupational and environmental research, teaching and service for over 25 years, including serving as associate editor for the ASCE *Journal of Environmental Engineering*, and the *Journal of Environment and Public Health*. He is currently the Director of the UM Center for Occupational Health and Safety Engineering. His research addresses air quality and air pollution control engineering, environmental impact and risk analysis, exposure assessment, emerging contaminants, hazardous waste management, and environmental epidemiology. He is currently visiting the Univ. of Coimbra (May-August 2012).



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