

KONSTADINOS G. GOULIAS

3611 ELLISON HALL
GEOGRAPHY
UNIVERSITY OF CALIFORNIA
SANTA BARBARA, CA 93106-6230
TEL: (805) 893-4190
FAX: (805) 893-3146
GOULIAS@GEOG.UCSB.EDU



Kostas Goulias was born in Athens, Greece, where he also completed his pre-university studies. Then, he entered the Università degli Studi della Calabria with a scholarship from the Italian government. He graduated from that University with a Laurea degree (BS & MS) with specialty in Civil Engineering and in Territorial Planning. His thesis, in Italian, involved the creation, testing, and application of an algorithm for maximum likelihood estimation of Multinomial Logit models for mode choice. He continued his research with a post-graduate scholarship named integrated study (corso integrativo) at the Università della Calabria to develop a mode choice model for the City of Cosenza, Italy. Subsequently (August 1986 to August 1987) he received an MSCE from the University of Michigan, Department of Civil Engineering, concentrating on traffic engineering, highway design, and probabilistic models for civil infrastructure systems. Between August 1987 and August 1991 he pursued his Ph.D. at the University of California, Davis, with a brief visit to University of California, Irvine, and two brief visits in the Netherlands at the Bureau Goudapell Coffeng, Deventer. For his dissertation he created a demographic and travel demand micro-simulator (MIDAS) for the Netherlands that was funded by the Dutch Ministry of Transport and the California University Transportation Center in 1990 and 1991. During this period he also worked on a variety of projects including telecommuting studies, panel/longitudinal survey design and analysis, dynamic econometric modeling, and freight simulation models. Goulias went to Penn State University in the Fall of 1991 as an *assistant professor*, was promoted to *associate professor* in July 1997, became director of a research program at the Pennsylvania Transportation Institute in 1997 and director of a center for excellence in Intelligent Transportation Systems in 1997. He achieved the rank of *full professor* in July 2002 and became *director* of the Mid-Atlantic Universities Transportation Center in September 2002. In March 2004 he joined the faculty at the Department of Geography of the University of California at Santa Barbara (UCSB). In his first few years, he developed estimation methods and computer code for data analysis and simulation systems for nationwide demographic and travel demand forecasting. These systems use dynamic econometric models of traveler behavior and microanalytic stochastic simulation methods. At Penn State and at UCSB, his primary research interests are in the area of quantitative transportation planning. His emphasis is on forecasting the demand for transportation services and on the impact simulation and forecasting of policy actions. He is working on the development of statistical-econometric, and computer-based stochastic simulation methods and tools in six research directions.

First, by analyzing the dynamics of traveler behavior using the first U.S. general purpose transportation panel survey (i.e., repeated interviews of the same individuals over time) data set and by designing new demand forecasting tools. In this area he initiated a research program called Longitudinal Integrated Forecasting Environment (LIFE) with a variety of projects funded by the Puget Sound Regional Council, Federal Highway Administration (U.S. Department of Transportation), the Mid-Atlantic Universities Transportation Center, the Center for Intelligent Transportation Systems, and the Fulbright foundation. In this effort, models of panel attrition, relocation, activity participation, and household time allocation are developed to explain and predict the dynamics of human behavior. Two key products in this area are DEMOS, a stochastic microsimulation model system for demographic forecasting and a series of dynamic econometric models for travel demand forecasting.

Second, in the computerized decision making tools direction (supported by eight projects and funded by the Centre Regional Planning Commission, the Pennsylvania Department of Transportation, the

Pennsylvania Legislature's Low Emissions Vehicle Commission, and the U.S. Department of Transportation) he created methods that simulate impacts on and from the transportation system. This work produced a variety of decision support methods and systems for transportation planning agencies at the local (regions), the State, the Federal, and International levels. One key product of this area is Access Management Impact Simulation (AMIS) which identifies local and regional impacts of new developments using Geographic Information Systems and a combination of regional with local traffic simulation tools. His research in this area also motivated a significant component of the new long range transportation plan in Pennsylvania (PennPlan - with Goulias the principal investigator) to address issues such as telecommuting and land use and he is currently designing a regional simulation system for Centre county called Centre SIM.

Third, in the Intelligent Transportation Systems (ITS) area he is studying the interaction between information, telecommunications, technologies, and transportation systems. In this area he is developing a new methodology for the design of ITS, which is based on contextual theories of human behavior and methods to evaluate the effectiveness of operational systems. Key products in this area include the independent evaluations for the Pennsylvania Turnpike commission of its Advanced Traveler Information System and a series of evaluations for the Pennsylvania Department of Transportation.

Fourth, in the area of e-commerce and transportation he is developing conceptual frameworks and models of the Information and Communications Technologies (ICT) impacts on transportation for passenger and freight travel. Key products in this area include a framework for studying grocery teleshopping and a series of papers analyzing the effects of mobile technologies on travel behavior of households.

Fifth, in the area of sustainable transportation he has been involved in nonmotorized transport research, design of hybrid-electric vehicles, and air pollution control program evaluation. Key products in this area include the evaluation of the California Low Emission Vehicle program for Pennsylvania's LEV commission, assessment of the IndiMark program in Western Australia, and market analysis for the Portuguese government in developing a factory of hybrid-electric vehicles.

Sixth, in the area of optimal allocation of resources he co-developed with two colleagues from Bangladesh a Data Envelopment Analysis tool to estimate the effect of transportation on economic development and the possible lagged effects of investments. A recent project in a joint partnership with UC Irvine and directed by Goulias was funded by the California Department of Transportation through the PATH program and it extends the methodology to social welfare of transportation investments.

He teaches at the undergraduate, graduate, and professional development levels. He also co-developed joint courses in business and management at PennState and at the Technical University of Lisbon during his Fulbright Senior Chair Award. Goulias organizes and delivers courses, seminars, invited lectures, keynote speeches, and resource papers at local, National, and International professional meetings and agencies. Dr. Goulias is the founder and chair of the National Research Council-transportation Research Board Task Force on "Moving Activity Based Approaches to Practice" (A1C53 – ADB60T). He is also the immediate past chair of the National Research Council-Transportation Research Board (TRB) Committee on "Traveler Behavior and Values" (A1C04-ADB20) and he has been the chair of subcommittee on "Activity Analysis and Travel Patterns." He has also been a member of other TRB committees, Executive Council member in the Institute of Transportation Engineers, and a committee secretary in the American Society of Civil Engineers. He is also a member of the International Association for Travel Behavior Research and the International Association for Time Use Research. Goulias served on the Editorial Advisory Boards of three refereed journals (Transportation Research Part A, Part B, and ITS Journal), the International Scientific Advisory Committee of Urban Transport and ECOSUD conferences organized by the Wessex Institute of Technology, reviews regularly papers submitted to Transportation, Transportation Research, Transportation Research Record, Transportation Science, Transport Reviews, and serves on a variety of advisory boards and expert panels in the U.S., Europe, and Australia. He is also the editor-in-chief of a new Civil Engineering Handbook on *Transportation Systems Planning: Methods and Applications* published in 2003 by CRC Press featuring the state-of-the-art in modeling and simulation in urban and regional systems and engineering and planning. Goulias is preparing a new book on *Transportation Science and Technology* to be published by Elsevier in 2006.