

CARLOS F. DAGANZO
Brief biography (November, 2019)

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SUMMARY

Carlos F. Daganzo is a Chancellor's Professor of the Graduate School in civil and environmental engineering at the University of California, Berkeley. A member of the National Academy of Engineering, he was a co-founder, chairperson of the board, and principal scientist of *Via Analytics*, a California benefit corporation devoted to improving mobility through technology. He has served as Convenor of the oldest international symposium on transportation and traffic theory (the ISTTT) and as an Associate Editor of *Transportation Research* (Part B, methodological) and *Transportation Science*. Daganzo's former students hold faculty positions at top ranked schools of engineering, business and management all over the world. He has authored "*Fundamentals of Transportation and Traffic Operations*" (Pergamon-Elsevier, 1997) – an internationally used and translated graduate level textbook. Noted for his contributions to econometrics, logistics, freight operations, network theory, traffic flow, and transit operations, Daganzo has also sole-authored three research books: "*Multinomial Probit: The Theory and its Application to Demand Forecasting*" (Academic Press, 1979), "*Logistics Systems Analysis*" (1st, 2nd and 3rd and 4th eds, Springer, 1991, 1996, 1999, 2005), and "*A Theory of Supply Chains*" (Springer, 2003). His latest book, "*Public Transportation Systems: Basic Principles of System Design, Operations Planning and Real-Time Control*" (World Scientific, 2019) describes the blueprint for Barcelona's new high-performance bus system (*La Nova Xarxa*), which Daganzo invented and co-designed. The Universitat Politècnica de Catalunya, Barcelona, Spain, bestowed on him an honorary doctorate, partly in recognition for this work. The ISTTT Symposium of 2011 was dedicated to him in recognition of his cumulative contributions to transportation science. In 2018, Daganzo was appointed Overseas High Talent Strategic Scientist to the city of Beijing with the charge of conceiving and overseeing the transit and transportation master plans for the city.

EDUCATION

Ph.D. - Civil Engineering (Transportation) University of Michigan, Apr 1975
Master of Science - Civil Engineering (Transportation) University of Michigan, Dec 1973
Ingeniero de Caminos (Civil Engineer) University of Madrid, 1972

EMPLOYMENT/EXPERIENCE

Professor of the Graduate School - University of California, Berkeley, Jul 2012 - present
Professor - Civil Engineering (Transportation), University of California, Berkeley, Jul 1985 – Jun 2012
Assoc. Professor - Civil Engineering (Transportation), University of California, Berkeley, Jul 1980 - Jun 1985
Asst. Professor - Civil Engineering (Transportation), University of California, Berkeley, Jan 1977 - Jun 1980
Asst. Professor - Civil Engineering (Transportation), Massachusetts Institute of Technology, Jul 1975 - Dec 1976

ACADEMIC ACTIVITIES (selected)

Convenor, *Intl. Symp. on Transportation and Traffic Theory*, Jul 2002 - 2009
Associate Editor, *Transportation Research part B* (methodological), Jan 1979 – March 2018
Member, International Advisory Committee, *Intl. Symp. on Transportation and Traffic Theory*, 1993-present.
Associate Editor, *Transportation Science*, Nov 1976 - Dec 1982
Editorial Board Member, *Transportation Research*, Jun 1977 - Dec 1978
Member, Committee on Supply Analysis, *Transportation Research Board*, Jan 1989 - 1996

PROFESSIONAL ACTIVITIES (*selected*)

Overseas Lead Scientist Beijing Transportation Institute 2018-present. Conceiving and overseeing the transit and transportation master plans for both Beijing and its envisioned green satellite: the Xiong'an New Area. Diagnose and propose improvements for current operations of the metro and all the supporting public transport modes. Analyze and suggest methods for better deploying, rationing and pricing Beijing's transportation assets.

Principal Scientist, Via Analytics, 2011- present. Discovered a new method to counteract the so-called "bunching effect" that now can be used to improve bus service reliability; led a group of scientists and engineers in the development of a prototype; took the product to market; now developing other products.

Consultant to the General Motors Research Laboratories, Warren, Michigan, on production, logistics and transportation matters, 1977 – 1997, and 2006-2008. This activity led General Motors to change the way in which it schedules its assembly lines; has guided some of its investment decisions; and has influenced the way in which it distributes its parts and finished products.

Consultant to the General Motors Corporation Economic, Marketing and Product Planning Staffs, Detroit, Michigan, on econometric issues, 1985 – 1993. This activity has resulted in unique software, which is used by General Motors for product development, marketing and forecasting.

Other consulting: ABT Associates, Cambridge, Massachusetts; Advanced Logistics Group, Barcelona, Spain; Beijing Municipal transportation Commission, Beijing, China; Booz Allen and Hamilton, Cambridge, Massachusetts; California State Senate, Sacramento, California; Cambridge Systematics, Inc., Cambridge, Massachusetts; CENIT, Barcelona, Spain; Crain Associates, Los Altos, California; Dave Parsons, Inc., Pasadena, California; European Communities Commission, Belgium; I.E.S.E. Business School, Barcelona, Spain; I.N.T.E.C.S.A., Madrid, Spain; IDOM, Barcelona, Spain; Institut Cerda, Barcelona, Spain; Kodak, Corp., Rochester, N.Y.; Lockheed Martin, Lakeland FL; Massachusetts Institute of Technology, Cambridge, Massachusetts; Multisystems, Inc., Cambridge, Massachusetts; Oak Ridge National Laboratory, Oak Ridge, Tennessee; Peat, Marwick and Mitchell, San Francisco, California; S.I.C.E., Madrid, Spain; SYSTAN, Inc., Los Altos, California. Transports Metropolitans de Barcelona, Barcelona, Spain. Vino21, Madrid, Spain. Universidad de los Andes, Merida, Venezuela; Universidad Central, Caracas, Venezuela; Universitat Polytecnic de Catalunya, Barcelona, Spain; Universidad de Castilla-La Mancha, Ciudad Real, Spain.

AWARDS AND HONORS

CEE Distinguished Faculty Lecture, U.C. Berkeley, Spring 2019.

Beijing Overseas High Talent Strategic Scientist, Beijing Municipal Committee, CPC, September 2018.

Kometani-Sasaki Prize for contributions to ISTTT, Kyoto, Japan, 2016

Alumnus of the Year, Civil and Environmental Engineering Department, University of Michigan, 2016

National Academy of Engineering, 2014

Robert Herman Lifetime Award in Transportation Science (INFORMS, TSL), 2013

Honorary Doctorate (Doctor Honoris Causa) Universitat Politècnica de Catalunya, Barcelona, Spain, 2012

Chancellor Professorship of the Graduate School, U. C. Berkeley, 2012.

ISTTT Tribute and Symposium Dedication, 2011

U.C. Berkeley, Faculty Mentor Award, 2008

Distinguished Lectures: U.C. Berkeley (2018); TU Delft (2013); U. Tokyo (2008); U. Kyoto/U.Kobe (2008); U. Illinois (2007); U. Texas (Austin) 2003.

Director, Volvo Research and Educational Foundations International Center of Excellence on Future Urban Transport.

Robert Horonjeff Chair in Civil and Environmental Engineering, Univ. of California, Berkeley, 1999-2012.

Honorable mention (2nd place) in the 1986 TIMS Edelman Award competition for management science achievement (with D.E. Blumenfeld, L.D. Burns and M. Frick from General Motors, and R.W. Hall from University of California, Berkeley, 1986).

Research work honored with three McCuen Awards at the General Motors Research Labs in the span of four years (latest award in 1988). Projects: MINLODE, TRANSPORT, and AUTOSEQUENCE.

National Science Foundation - principal investigator, 1977 - 1988, 1991-1993, 2003-2005, 2009-2015, 2018-present
Fulbright Fellow, 1987, 2005

Supervisor of INFORMS award winning Ph.D. theses (Y. Sheffi, 1978; A. Erera 2001; A. Goodchild 2006)

Supervisor of ITE and TRF national award winning paper (D. O'Neil, 1992)

Supervisor of ASCE national award-winning paper (F. Robuste, 1988)

Supervisor of TRF national award winning paper (R. Hall, 1982)

PhD THESES SUPERVISED

Daganzo has supervised forty students who hold prominent positions in academia, industry and government all over the world.

SCIENTIFIC CONTRIBUTIONS

More than 180 papers in scientific journals (90+ sole-authored) and the books listed below. In 2019, Daganzo was recognized as “the most remarkable author” in the 50-year history of the prestigious *Transportation Research* journal series.¹

BOOKS

- 1 “Apuntes y Formulario de Taludes,” (Madrid: E.T.S. Ingenieros de Caminos, 1972).
- 2 “Two Lane Road Traffic: A Stochastic Model,” Ph.D. Thesis, Department of Civil Engineering, The University of Michigan, Ann Arbor, MI (1975).
- 3 *Multinomial Probit: The Theory and Its Application to Demand Forecasting*, Academic Press, New York, N.Y. (1979).
- 4 *Logistics Systems Analysis*, [Springer-Verlag](#), Heidelberg, Germany (1991); 2nd edition (1996); 3rd edition (1999); 4th edition (2005).
- 5 *Transportation and Traffic Theory*, Proc. 12th Int. Symp. on Transportation and Traffic Theory, Berkeley, CA (C.F. Daganzo, editor), American Elsevier, New York, N.Y. (1993).
- 6 *Fundamentals of Transportation and Traffic Operations*, Pergamon-Elsevier, New York, N.Y. (1997).
- 7 *A Theory of Supply Chains*, [Springer-Verlag](#), Heidelberg, Germany (2003).
- 8 *Public Transportation Systems: Basic Principles of System Design, Operations Planning and Real-Time Control*. [Institute of Transportation Studies Publication UCB-ITS-CN-2010-1](#) (2010). 2nd edition (2019), enlarged and updated with Y. Ouyang as co-author, World Scientific (2019)

¹ Modaka, N.M., Merigob, J.M, Weber R., Manzorb,F., Ortuzar, J.D. “Fifty years of *Transportation Research* journals: A bibliometric overview” [Transportation Research Part A](#) 120 (2019) 1888-223.