

MICHAEL J. CASSIDY**Robert Horonjeff Professor**

Department of Civil & Environmental Engineering

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EDUCATION

PhD Civil Engineering, 1990, Transportation Engineering, University of California, Berkeley.

MS Civil Engineering, 1986, Transportation Engineering, University of California, Berkeley.

BS Civil Engineering, 1984, California State Polytechnic University, Pomona.

ACADEMIC EXPERIENCE

Professor, Department of Civil and Environmental Engineering, University of California, Berkeley, April, 2003 to present.

Associate Professor Department of Civil and Environmental Engineering, University of California, Berkeley, June, 1997 to April 2003.

Visiting Professor on Sabbatical, Department of Civil Engineering, Universidad Autonoma, Madrid, Spain, January-June 2002.

Visiting Professor on Sabbatical, Department of Civil Engineering, Universidad Autonoma, Barcelona, Spain, January-June 1999.

Assistant Professor, Department of Civil and Environmental Engineering, University of California, Berkeley, January, 1994 to June, 1997.

Assistant Professor, School of Civil Engineering, Purdue University, West Lafayette, Indiana, August, 1990 to December, 1993.

SELECT AWARDS AND HONORS

Robert Horonjeff Endowed Chair in Civil Engineering (July 1, 2014 - present)

Chancellor's Professorship (July 1, 2014 – December 9, 2014)

Associate Editor, *Transportation Research Part B*

Director and PI, University Transportation Center for Federal Region 9, University of California Center on Economic Competitiveness in Transportation, UCCONNECT, 2013 -- present

Cunard Award for best paper in TRB's Operations Section: Doig, J.C., Gayah, V. and Cassidy, M.J. (2013) Inhomogeneous flow patterns in under-saturated road networks and implications for Macroscopic Fundamental Diagrams

Certificate of Excellence in Reviewing (2013) *Transportation Research Part B*

Member, International Advisory Committee, International Symposium on Transportation and Traffic Theory, 2014 -- present

Member, California State Transportation Innovation Committee, 2016

Organizer and host, 19th International Symposium on Transportation and Traffic Theory, July 2011

Member, Industrial Advisory Council, California State Polytechnic University, Pomona, 2015 -- present

Member, TRB Committee on Managed Lanes, 2014 -- present

Member, Executive Committee, University of California Transportation Center, UCTC, 2012 – present

Acting Director, Institute of Transportation Studies, UC Berkeley, 2007 – 2008

COURSES TAUGHT (AT UC-BERKELEY)

Undergraduate:

- Intro to Computer Programming (formerly Engr and Sci Problem-Solving w/ Computers), E77N
- Intro to Transportation Engineering, CE 150
- Design and Construction of Transportation Facilities, CE 153
- Transportation Systems Engineering, CE 155

Graduate:

- Traffic Operations and Control, CE 255 (with laboratory, CE 255L)
- Transportation Operations, CE 251
- Urban Mass Transportation, CE 259

UC Extension:

- Traffic Flow Fundamentals for Practitioners 2006-2010
- Highway Capacity Analysis 1999-2002

COURSES TAUGHT (AT PURDUE UNIVERSITY)

Undergraduate:

- Introduction to Transportation Engineering
- Senior Design

Graduate:

- Public Transit Planning and Operations
- Highway Traffic Engineering

- Traffic Flow Theory

FORMER DOCTORAL STUDENTS SUPERVISED (AT UC BERKELEY)

J.R. Windover (PhD 1998) Project Manager, Baine and Assocs, San Francisco, CA.

B. Coifman (PhD 1999) Assoc. Prof., Ohio State University

R.L. Bertini (PhD 1999) Assoc. Prof., Cal Poly State Univ., San Luis Obispo

M. Mauch (PhD 2002) Consultant, DKS Assocs and lecturer, UC Berkeley

K. Chung (PhD 2004) California Dept of Transportation and lecturer, UC Berkeley

Soyoung Ahn (PhD 2005) Assoc. Prof., University of Wisconsin

Jittichai Rudjanakanoknad (PhD 2005) Asst. Prof., Chulalongkorn Univ, Bangkok, Thailand

Joonho Lee (PhD 2008) Consultant, California

Anthony Patire (PhD 2010) Post-Doctoral Researcher, UC Berkeley

Kitae Jang (PhD 2011) Asst. Prof., Korea Institute of Science and Technology

Yiguang Xuan (co-supervised, PhD, 2011) Post-Doctoral Researcher, UC Berkeley

Kwangho Kim (PhD 2011) Researcher, Korea Res. Instit. For Human Settlement

Weihua Gu (PhD 2012) Asst. Prof., Hong Kong Polytechnic University

Ilgin Guler (PhD 2012) Asst. Prof., Penn State University

Karthikgeyan Sivakumaran (co-supervised, PhD, 2013)

Haoyu Chen (co-supervised, PhD, 2016)

FORMER DOCTORAL STUDENTS SUPERVISED (AT PURDUE UNIVERSITY)

Youngtae Sun (PhD 1994). Assoc. Prof., Myongji College, S. Korea.

Mu-Han Wang (PhD 1994). National Ministry of Transportation, Taiwan.

Dean Hsiao (PhD 1994). Consultant, California.

DOCTORAL STUDENTS CURRENTLY SUPERVISED

Jean Christine Doig (PhD candidate, degree expected Dec 2016)

Nathalie Saade (PhD candidate, degree expected Dec 2016)

Wei Ni (PhD expected 2017-18)

Zahra Amini (PhD expected 2017-18)

POST-DOCTORAL FELLOWS SUPERVISED

Yuwei Li, Shanghai Maritime University, 2004

Lourdes Lopez Valpuesta, University of Sevilla, Spain, 2006

Jose Ignacio Castillo Manzano, University of Sevilla, Spain, 2006

W. Elias, Technion U, Haifa, Israel, 2008

K. Song, Seoul National U, Korea, 2008

Francesc Sorigura-Marti, Technical University of Barcelona, Spain, 2012

Young-Bok Kwon (non-PhD Visiting Scholar) Korean Ministry of Transport, 2012

Weihua Gu, Hong Kong Polytechnic University, 2012-2013

Kwangho Kim, UC Berkeley, 2013 – present

JOURNAL PUBLICATIONS

Cassidy, M.J., Kim, K.H., Ni, W. and Gu, W. (2015) A problem of limited-access special lanes; Part I: Spatiotemporal studies of real freeway traffic; Part II: Exploring remedies via simulation. *Transportation Research Part A*, 80, 307-329.

Chen, H., Gu W., Cassidy, M.J. and Daganzo, C.F. (2015) Optimal transit service atop ring-radial and grid street networks: a continuum approximation design method and comparisons. *Transportation Research Part B*, 81, 755-774. Also presented at the 21st ISTTT.

Gu, W., Cassidy, M.J. and Li, Y. (2015) Models of bus queueing at curbside stops. *Transportation Science*, 49, 204-212.

- Gu, W., Gayah, V., Cassidy, M.J. and Saade, N. (2014) On the impacts of bus stops near signalized intersections: models of car and bus delays. *Transportation Research Part B*, 68, 123-140.
- Ouyang, Y, Nourbakhsh, S.M. and Cassidy, M.J. (2014) Continuum approximation approach to bus network design under spatially heterogeneous demand. *Transportation Research Part B*, 68, 333-344.
- Sivakumaran, K., Li, Y., Cassidy, M.J. and Madanat, S.M. (2014) Access and the choice of transit technology. *Transportation Research Part A*, 59, 204-221.
- Gu, W. and Cassidy, M.J. (2013) Maximizing bus discharge flow from multi-berth stops by regulating exit maneuvers. *Transportation Research Part B*, 56, 254-264.
- Li, Z., Chung, K. and Cassidy, M.J. (2013) Collisions in freeway traffic: the influence of downstream queues and interim means to address it. *Transportation Research Record* 2396, 1-9.
- Doig, J.C., Gayah, V. and Cassidy, M.J. (2013) Inhomogeneous flow patterns in under-saturated road networks and implications for Macroscopic Fundamental Diagram. *Transportation Research Record* 2390, 68-75. **Winner of the Cunard Award for best paper in TRB's Operations Section.**
- Gu, W., Cassidy, M.J., Gayah, V. and Ouyang, Y. (2013) Mitigating negative impacts of near-side bus stops on cars, *Transportation Research Part B*, 47, 42-56.
- Gu, W., Cassidy, M.J. and Li, Y. (2012) On the capacity of highway checkpoints: models for unconventional configurations, *Transportation Research Part B*, 46, 1308-1321.
- Guler, S.I. and Cassidy, M.J. (2012) Strategies for sharing bottleneck capacity among buses and cars, *Transportation Research Part B*, 46, 1334-1345.
- Kim, K. and Cassidy, M.J. (2012) A capacity-increasing mechanism in freeway traffic, *Transportation Research Part B*, 46, 1260-1272.
- Jang, K. and Cassidy, M.J. (2012) Dual influences on vehicle speed in special-use lanes and critique of US regulation, *Transportation Research Part A*, 46, 1108-1123.
- Sivakumaran, K, Li, Y, Cassidy, M.J. and Madanat, S.M. (2012) Cost-saving properties of schedule coordination in a simple trunk-and-feeder transit system, *Transportation Research Part A*, 46, 131-139.
- Xuan, Y., Gayah, V., Cassidy, M.J. and Daganzo, C.F. (2012) Presignal used to increase bus- and car-carrying capacity at intersections: theory and experiment, *Transportation Research Record* 2315, 191-196.

- Cassidy, M.J., Jang, K. and Daganzo, C.F. (2011) Macroscopic Fundamental Diagrams for freeway networks: Theory and observation, *Transportation Research Record* 2260, 8-15.
- Xuan Y., Daganzo, C.F. and Cassidy, M.J. (2011) Increasing the capacity of signalized intersections with separate left turn phase, *Transportation Research Part B*, 45, 769-781.
- Gu, W., Li, Y., Cassidy, M.J. and Griswold, J.B. (2011) On the capacity of isolated curbside bus stops, *Transportation Research Part B*, 45, 714-723.
- Patire, A. and Cassidy, M.J. (2011) Lane changing patterns of bane and benefit: Observations of an uphill expressway, *Transportation Research Part B*, 45, 656-666.
- Ahn, S., Laval, J. and Cassidy, M.J. (2010) Merging and diverging effect on freeway traffic oscillations: theory and observation, *Transportation Research Record* 2188, 1-8.
- Gonzales, E.J., Geroliminis, N., Cassidy, M.J. and Daganzo C.F. (2010) On the allocation of space to multiple transport modes. *Transportation Planning and Technology*, 33(8), 643-656.
- Cassidy, M.J., Jang, K. and Daganzo, C.F. (2010) The smoothing effect of carpool lanes on freeway bottlenecks, *Transportation Research Part A*, 44, 65-75
- Cassidy, M.J., Daganzo, C.F., Jang, K. and Chung, K. (2009) Spatiotemporal effects of segregating different vehicle classes on separate lanes. *International Symposium on Transportation and Traffic Theory* (W. Lam, S.C. Wong and H.K. Lo, Eds.) Springer, pp 57-74.
- Daganzo, C.F. and Cassidy, M.J. (2008) Effects of high occupancy vehicle lanes on freeway congestion, *Transportation Research Part B*, 42, 861-872
- Ahn, S and Cassidy, M.J. (2007) Freeway traffic oscillations and vehicle lane-changing maneuvers. *International Symposium on Transportation and Traffic Theory* (R. Alsop, M. Bell and B. Heydecker, Eds.) Elsevier, Amsterdam, pp 691-710.
- Chung, K, Rudjanakanoknad, J. and Cassidy, M.J. (2007) Relations between traffic density and capacity drop at three freeway bottlenecks, *Transportation Research Part B*, 41, 82-95.
- Li, Yuwei and Cassidy, M.J (2007) A generalized and efficient method for estimating transit route ODs from passenger count data, *Transportation Research Part B*, 41, 114-125.
- Cassidy, M.J. and Ahn, S. (2005) Driver turn-taking behavior in congested freeway merges. *Transportation Research Record*, 1934, 140-147.
- Anani S. and Cassidy, M.J. (2005) On stationary models of unqueued traffic and the number of freeway travel lanes. *Transportation Research Record*, 1934, 256-263.

- Cassidy, M.J. and Rudjanakanoknad (2005) Increasing the capacity of an isolated merge by metering its on-ramp. *Transportation Research Part B*, 39, 896-913.
- Chung, K. and Cassidy, M.J. (2004) Test of theory of driver behavior on homogeneous freeways. *Transportation Research Record*, 1883, 3-13.
- Ahn, S. Cassidy, M.J. and Laval, J (2003) Verification of a simplified car-following theory. *Transportation Research Part B*, 38, 431-440.
- Cassidy, M.J. (2003) Freeway on-ramp metering, delay savings and the diverge bottleneck. *Transportation Research Record*, 1856, 1-5.
- Coifman, B. and Cassidy, M.J. (2002) Vehicle re-identification and travel time measurement on congested freeways. *Transportation Research Part A*, 36, 899-917.
- Mauch, M. and Cassidy, M.J. (2002) Freeway traffic oscillations: observations and predictions, *International Symposium on Transportation and Traffic Theory*, (M.A.P. Taylor, Ed.) Elsevier, Amsterdam, pp 653-674.
- Cassidy, M.J., Ananai, S.B. and Haigwood, J.M. (2002) Study of freeway traffic near an off-ramp. *Transportation Research Part A*, 36, 563-572.
- Bertini, R.L. and Cassidy, M.J. (2002) Some observed queue discharge features at a freeway bottleneck downstream of a merge. *Transportation Research Part A*, 36, 683-697.
- Windover, J.R. and Cassidy, M.J. (2001) Some observed details of freeway traffic evolution. *Transportation Research Part A*, 35, 881-894.
- Cassidy, M.J. and Mauch, M. (2001) An observed traffic pattern in long freeway queues. *Transportation Research Part A*, 35, 143-156.
- Cassidy, M.J. and Bertini, R.L. (1999) Observations at a freeway bottleneck. *International Symposium on Transportation and Traffic Theory* (A. Cedar, ed.) Elsevier, Amsterdam, pp 107-124.
- Cassidy, M.J. & Bertini, R.L. (1999) Some traffic features at freeway bottlenecks. *Transportation Research Part B*, 33, 25-42.
- Smilowitz, K., Daganzo, C.F., Cassidy, M.J. and Bertini, R.L. (1999) Some observations of highway traffic in long queues. *Transportation Research Record*, 1678, 225-233.
- Daganzo, C.F., Cassidy, M.J. and Bertini, R.L. (1999) Possible explanations of phase transitions in highway traffic. *Transportation Research Part A*, 33, 365-379.
- Cassidy, M.J. and Coifman, B. (1998) The relation between average speed, flow and density and the analogous relation between density and occupancy. *Transportation Research Record*, 1591, 1-6.

- Cassidy, M.J. and Windover, J.R. (1998) Driver memory: motorist selection and retention of individualized headways in highway traffic. *Transportation Research Part A*, 32, 129-137.
- Cassidy, M.J. (1998) Reproducible bivariate relations in nearly stationary highway traffic. *Transportation Research Part B*, 32, 49-59.
- Madanat, S.M., Cassidy, M.J., Teng, H. and Pan, H. (1996) A decision making system for freeway incident response using traffic diversion. *Transportation Research Record*, 1554, 228-235.
- Cassidy, M.J., Chuang Y.H. and Vitale, J. (1996) Reexamining vehicle actuation strategies at isolated signalized intersections. *ASCE Journal of Transportation Engineering*, 122, 3, 235-240.
- Soto, G., Cassidy, M.J. and Madanat, S.M. (1996) Application of ordered probit techniques to analyze ratings of Blissymbol complexity, *Augmentative & Alternative Communication*, 12, 122-126.
- Cassidy, M.J. & Windover, J.R. (1995) Methodology for assessing the dynamics of freeway traffic flow. *Transportation Research Record*, 1484, 73-79.
- Cassidy, M.J., Madanat, S.M., Wang, M.H. & Yang, F. (1995) Unsignalized intersection capacity and level of service: revisiting critical gap. *Transportation Research Record*, 1484, 16-23.
- Madanat, S.M., Cassidy, M.J. and Wan Ibrahim, W.H. (1995) A methodology for determining level of service categories using attitudinal data. *Transportation Research Record*, 1457, 59-62.
- Son, Y.T., Cassidy, M.J. and Madanat, S.M. (1995) Investigating the steady state assumption using simulation, *ASCE Journal of Transportation Engineering*, 121, 2, 182-190.
- Cassidy, M.J., Son, Y.T. and Rosowsky, D.V. (1994) Estimating motorist delay at two-lane highway work zones. *Transportation Research Part B*, 28, 433-444.
- Hsiao, C.H. Lin, C.T. and Cassidy, M.J. (1994) The application of fuzzy logic and neural networks to automatically detect freeway traffic congestion. *ASCE Journal of Transportation Engineering*, 120, 5, 753-772.
- Madanat, S.M., Cassidy, M.J. and Wang, M. (1994) A probabilistic model of queueing delay at stop controlled intersection approaches. *ASCE Journal of Transportation Engineering*, 120, 1, 21-36.
- Wang, M., Cassidy, M.J., Chang, P. and May, A.D. (1993) Evaluating the capacity of freeway weaving sections. *ASCE Journal of Transportation Engineering*, 119, 3, 360-384.

Cassidy, M.J. and Han, L.D. (1993) Proposed model for predicting motorist delays at two-lane highway work zones. *ASCE Journal of Transportation Engineering*, 119, 1. 27-42.

Cassidy, M.J., and May, A.D. (1991) Proposed analytical technique for estimating capacity and level of service of major freeway weaving sections. *Transportation Research Record*, 1320, 99-109.

Cassidy, M.J., Skabardonis, A. and May, A.D. (1989) Operation of major freeway weaving sections: recent empirical evidence. *Transportation Research Record*, 1225, 61-72.

Skabardonis, A., Cassidy, M.J., May, A.D. and Cohen, S. (1989) Application of simulation to evaluate the operation of major freeway weaving sections. *Transportation Research Record*, 1225, 91-98.

Cassidy, M.J. and May, A.D. (1988) CALSIG – an integration of methodologies for the design and analysis of signalized intersections. *Transportation Research Record*, 1160, 60-74.

BOOK CHAPTERS

Cassidy, M.J. (2003) Traffic Flow and Capacity, in *Handbook of Transportation Science Handbook, International Series in Operations Research & Management Science, Volume 56, Part 3*, 155-191, Springer.

Cassidy, M.J. (1999) Traffic Flow and Capacity, in *Transportation Engineering Handbook*, Kluwer Academic Press.

Cassidy, M.J., (1994). Highway Traffic Operations, in *Civil Engineering Handbook*, CRC Press.

Cassidy, M.J., (1994). Intelligent Vehicle Highway Systems, in *Science & Technology Yearbook*, Encyclopedia Britannica.

TECHNICAL REPORTS

Nourbakhsh, S.M., Ouyang, Y. and Cassidy, M.J. (2014) Computational Challenges Associated with Mixed-Integer Program Formulations of the Transit Network Design Problem. *ITS Berkeley Research Report UCB-ITS-RR-2014-1*, 7pp.

Gu, W., Gayah, V., Cassidy, M.J. and Saade, N. (2014) On the Impacts of Bus Stops near Signalized Intersections: Models of Car and Bus Delays. *Center for Future Urban Transport Working Paper, University of California, Berkeley*, 25pp.

- Sivakumaran K., Li, Y., Cassidy M.J. and Madanat S.M. (2011). Synchronizing Transit Schedules to Reduce Transfer Times and Operating Costs, *UCTC Policy Brief # 2011-03, University of California, Berkeley.*
- Guler, I. & Cassidy, M. J. (2010) Innovative Bus-Lane Deployments in Amman: Proposed Field Experiments. *Center for Future Urban Transport Working Paper, University of California, Berkeley, 9pp.*
- Gonzales, E. J, Pilachowski, J., Gayah, V., Cassidy, M. J. and Daganzo, C. F. (2010). Public Transportation Systems: Mini-Projects and Homework Exercises. *University of California, Berkeley, 27pp.*
- Guler, I, and Cassidy, M. J. (2010). Deploying Underutilized Bus Lanes at Key Nodes in a Road Network. *Center for Future Urban Transport Working Paper, University of California, Berkeley, 21pp.*
- Kim, K., and Cassidy, M. J. (2010). On-Ramp Metering and Commuter Delay: A Before and After Study. *PATH Research Report, University of California, Berkeley, 29pp.*
- Patire, A. D, and Cassidy, M. J. (2010). A Congestion Mechanism for Uphill Expressways, Part I: the Shoulder Lane "Release Valve". *Center for Future Urban Transport Working Paper, University of California, Berkeley, 21pp.*
- Xuan, Y., Gayah, V., Daganzo, C.F., and Cassidy, M. J. (2009). Multimodal Traffic at Isolated Signalized Intersections: New Management Strategies to Increase Capacity. *Center for Future Urban Transport Working Paper, University of California, Berkeley, 21pp.*
- Lee, J.H, and Cassidy, M. J. (2009). An Empirical and Theoretical Study of Freeway Weave Bottlenecks. *PATH Research Report, University of California, Berkeley, 70 pp.*
- Li, Y., Miller, M. A., and Cassidy, M. J. (2009). Improving Mobility Through Enhanced Transit Services: Transit Taxi Service for Areas with Low Passenger Demand Density. *PATH Research Report, University of California, Berkeley, 47 pp.*
- Cassidy, M. J., Jang, K., and Daganzo, C. F. (2008). The Smoothing Effect of Carpool Lanes on Freeway Bottlenecks. *Center for Future Urban Transport Working Paper, University of California, Berkeley, 17 pp.*
- Cassidy, M. J., Daganzo, C.F. and Jang, K. (2008). Spatiotemporal Effects of Segregating Different Vehicle Classes on Separate Lanes. *Center for Future Urban Transport Working Paper, University of California, Berkeley, 16 pp.*
- Gonzales, E. J., Geroliminis, N., Daganzo, C.F. and Cassidy, M. J. (2008). Allocating City Space to Multiple Transportation Modes: A New Modeling Approach Consistent With the Physics of Transport. *Center for Future Urban Transport Working Paper, University of California, Berkeley, 15 pp.*

- Li, Y., Wang, J., Chen, J., and Cassidy, M.J. (2007). Design of a Demand-Responsive Transit System. PATH Working Paper, *University of California, Berkeley*, 48 pp.
- Li, Y., Foletta, N., Elkabany, K., Yang, F., Wee, A., and Cassidy, M. J. (2007). Reservation, Scheduling, and Navigation System for a Checkpoint DRT Service. PATH Research Report, *University of California, Berkeley*, 40 pp.
- Daganzo, C. F. and Cassidy, M. J. (2007). Deploying Lanes for High Occupancy Vehicles in Urban Areas. *Center for Future Urban Transport Working Paper, University of California, Berkeley*, 25 pp.
- Cassidy, M.J, and Rudjanakanoknad, J. (2005). On-ramp Metering Experiments to Increase Freeway Merge Capacity. *PATH research report;UCB-ITS-PRR-2005-28*, 16 pp.
- Cassidy, M.J. and Rudjanakanoknad, J. (2004). Increasing Capacity of an Isolated Merge by Metering its On-ramp. *Research report (University of California, Berkeley. Institute of Transportation Studies); UCB-ITS-RR-2004-3*, 20 pp.
- Banks, J. H., Amin, M.R, Cassidy, M.J. and Chung, K. (2003). Validation of Daganzo's Behavioral Theory of Multi-Lane Traffic Flow: Final Report. *PATH research report; UCB-ITS-PRR-2003-14*, 77 pp.
- Chung, K. and Cassidy, M.J. (2002). Testing Daganzo's Behavioral Theory for Multi-Lane Freeway Traffic. *PATH working paper ; UCB-ITS-PWP-2002-9*, 17 pp.
- Ahn, S. and Cassidy, M. J. (2002). Identifying Density-Flow Relations on Arterial Surface Streets. *PATH research report ; UCB-ITS-PRR-2002-26*; 6 pp.
- Cassidy, M.J. and Rudjanakanoknad, J. (2002). Study of Traffic at a Freeway Merge and Roles for Ramp Metering. *PATH working paper; UCB-ITS-PWP-2002-2*, 19 pp.
- Cassidy, M. and Rudjanakanoknad, J. (2002). Empirical Study of Ramp Metering and Capacity. *Research report (University of California, Berkeley. Institute of Transportation Studies) ; UCB-ITS-RR-2002-5*, 21 pp.
- Cassidy, M.J. (2002). Critique of a Freeway On-Ramp Metering Scheme and Broader Related Issues. *Research report (University of California, Berkeley. Institute of Transportation Studies);UCB-ITS-RR-2002-4*, iii, 13, 8 pp.
- Coifman, B. and Cassidy, M.J. (2000). Automated Travel Time Measurement Using Vehicle Lengths from Loop Detector Speed Traps. *PATH research report;UCB-ITS-PRR-2000-12*, 76 pp.
- Cassidy, M.J, Anani, S.B. and Haigwood, J.M. (2000). Study of Freeway Traffic Near an Off-Ramp. *PATH working paper;UCB-ITS-PWP-2000-10*, 5 pp.

- Lawson, T.W., Lin, W. and Cassidy, M.J. (1999). Validation of the Incremental Transfer Model. *PATH working paper;UCB-ITS-PWP-99-16*, 44 pp.
- Cassidy, M.J. and Coifman, B. (1998). Design of a Machine Vision-Based Vehicle Actuated Traffic Signal Controller. *PATH research report;UCB-ITS-PRR-98-7*, 28 pp.
- Wang, M.H. and Cassidy, M.J. (1995). An Electronic Surveillance and Control System for Traffic Management on the Borman Expressway. Part II: Calibrating a Simulation Model. *FINAL REPORT. Purdue University/Indiana Department of Transportation JHRP; Indiana Department of Transportation; Federal Highway Administration*, 30 pp.
- Cassidy, M.J. and Han, J. (1995). Validation and Evaluation of Freeway Simulation Models. *FINAL REPORT. Purdue University; California Department of Transportation; Federal Highway Administration*, 143 pp.
- Cassidy, M.J., Chuang, Y. and Vitale, J. (1995). Improved Strategies for Deploying Vehicle-Actuated Control at Isolated Signalized Intersections. *FINAL REPORT. Purdue University/Indiana Department of Transportation JHRP; Indiana Department of Transportation; Federal Highway Administration*, 60 pp.
- Cassidy, M.J. and Son, Y.T. (1994). Predicting Traffic Impacts at Two-Lane Highway Work Zones. *FINAL REPORT. Purdue University/Indiana Department of Transportation JHRP; Indiana Department of Transportation; Federal Highway Administration*, 88 pp.
- Cassidy, M.J., Son, Y.T. and Rosowsky, D.V. (1993). Predicting Vehicle Delays During Maintenance or Reconstruction on Two-Lane Highways. *Purdue University; California Department of Transportation*, 95 pp.
- Cassidy, M.J. and Sinha, K.C. (1990). An Electronic Surveillance and Control System for Traffic Management on the Borman Expressway, Part I. EXECUTIVE SUMMARY. *Purdue University/Indiana Department of Transportation JHRP*, 9 pp.
- Cassidy, M.J. and Sinha, K.C. (1990). An Electronic Surveillance and Control Surveillance and Control System for Traffic Management on the Borman Expressway, Part I. FINAL REPORT. *Purdue University/Indiana Department of Transportation JHRP*, 77 pp.
- Cassidy, M.J., Chan, P., Robinson, B. and May, A.D. (1990). A Proposed Analytical Technique for the Design and Analysis of Major Freeway Weaving Sections. *FINAL REPORT. University of California, Berkeley; California Department of Transportation; Federal Highway Administration*, 316 pp.
- Cassidy, M.J. and May, A.D. (1988). The 1985 Highway Capacity Manual Supplemental Report. *FINAL REPORT. Publication of: California University, Berkeley*, 111 pp.

Cassidy, M.J. and May, A.D. (1988). Research Problem Statements for the 1985 Highway Capacity Manual. *FINAL REPORT. Publication of: California University, Berkeley*, 52 pp.

Cassidy, M.J. and May, A.D. (1988). CALSIG: An Analysis and Design Procedure for Signalized Intersections. *FINAL REPORT. Publication of: California University, Berkeley*, 130 pp.

Sanchez, I., Cassidy, M.J. and May, A.D. (1988). CALSIG Software. *TECHNICAL DOCUMENT. Publication of: California University, Berkeley*, 44 pp.

PRESENTATIONS MADE AT CONFERENCES AND SYMPOSIA

Cassidy, M.J. (2013) Pareto-Improving Properties of Special-Use Lanes. 2nd International Transportation PhD Student Symposium. (Univ of Illinois, Urbana-Champaign).

Cassidy, M.J. (2013). Pareto-Improving Qualities of Special Lanes. *Volvo Research and Teaching Foundation (VREF) Annual Conference*. (London, England).

Cassidy, M.J. (2011). Macroscopic Fundamental Diagrams for freeway networks: theory and observation. *Annual Meeting of the Transportation Research Board*.

Cassidy, M.J. (2010). Improving Bus and Car Flows at intersections using pre-signals: a case study in China. *Volvo Research and Teaching Foundation (VREF) Annual Conference*. (Nairobi, Kenya).

Cassidy, M.J. (2010). Dynamic Sharing of Urban Infrastructure by Buses and Cars. Invited Speaker. *AUB-UCB Symposium on Urban Transportation*. American University Beirut, (Beirut, Lebanon).

Cassidy, M.J. (2010). Mesoscopic Fundamental Diagram for Freeways: Theory and Observation. Invited Speaker. *Mid-year Meeting of TRB Traffic Flow Theory Committee*. (Annecy, France).

Cassidy, M.J. (2009). Spatiotemporal effects of segregating different vehicle classes on separate lanes. *International Symposium of Traffic and Transportation Theory* (Hong Kong).

Cassidy, M.J. (2009). The smoothing effect of carpool lanes of freeway bottlenecks. *Annual Meeting of the Transportation Research Board*.

Cassidy, M.J. (2008). Research Highlights: Berkeley Center of Excellence. *Volvo Research and Teaching Foundation (VREF) Annual Conference*. (Berkeley, CA).

- Cassidy, M.J. (2008). The Smoothing Effect of Carpool Lanes on Freeway Bottlenecks and its Implications. *University of California Transportation Center - PATH Annual Conference*.
- Cassidy, M.J. (2007). Freeway traffic oscillations and vehicle lane-changing maneuvers. *International Symposium of Traffic and Transportation Theory* (London).
- Cassidy, M.J. (2006). Sustainable Transit for China's Hypergrowth Cities: A Case Study for the City of Chengdu. *University of California Transportation Center - PATH Annual Conference*.
- Cassidy, M.J. (2003). Freeway on-ramp metering, delay savings and the diverge bottleneck *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (2003). Some dynamic features of freeway traffic. *American Association for the Advancement of Science*.
- Cassidy, M.J. (2002). Freeway traffic oscillations: observations and predictions. *International Symposium of Traffic and Transportation Theory* (Adelaide, Australia).
- Cassidy, M.J. (2002). The theories of G.F. Newell and their interplay with empirical studies of traffic; invited presentation to honor the work of Gordon Newell. *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (2001). Managing freeway traffic queues. *Berkeley-Totori (Japan) Symposium on Infrastructure Management*.
- Cassidy, M.J. (2001). A simplified theory of car following: a lower order model (presented for G.F. Newell). *Meeting of Operations Research Society of America (INFORMS)*.
- Cassidy, M.J. (2001). Observations of instabilities in highway traffic. *Meeting of Operations Research Society of America (INFORMS)*.
- Cassidy, M.J. (2001). Recent observations in queued freeway traffic. *IEEE Conference on Advanced Technologies in Transportation*:
- Cassidy, M.J. (2000). An observed traffic pattern in long freeway queues. *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (1999). Observations at a freeway bottleneck. *International Symposium of Traffic and Transportation Theory* (Jerusalem).
- Cassidy, M.J. (1997). The relation between average speed, flow and density and the analogous relation between density and occupancy. *Annual Meeting of the Transportation Research Board*.

- Cassidy, M.J. (1997). Bivariate relations in nearly stationary traffic. *Meeting of Operations Research Society of America (INFORMS)*.
- Cassidy, M.J. (1995). Unsignalized intersection capacity and level of service: revisiting critical gap. *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (1995). Methodology for assessing the dynamics of freeway traffic flow. *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (1994). A methodology for determining level of service categories using attitudinal data. *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (1993). Estimating delay at two-lane highway work zones using probabilistic modeling. *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (1993). Modeling the traffic flow impacts of rehabilitation activity on two-lane highways. *ASCE Conference on Infrastructure Planning and Management*.
- Cassidy, M.J. (1992). Predicting vehicle delays and queue lengths on two lane highways during maintenance activity. *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (1991). An application of advanced technology for freeway traffic management. *ASCE Second International Conference on the Applications of Advanced Technology*.
- Cassidy, M.J. (1989). Operation of major freeway weaving areas: findings from the application of existing analytical methods and simulation modeling. *Annual Meeting of the Transportation Research Board*.
- Cassidy, M.J. (1988). CALSIG – an integration of methodologies for the design and analysis of signalized intersections. *Annual Meeting of the Transportation Research Board*.

INVITED SEMINARS OR LECTURES

- University of California, Davis, Dept. of Civil & Environmental Engineering: 2015
- California State Polytechnic University, Pomona, Dept. of Civil Engineering: 2014
- University of California, Berkeley, Dept. of Civil & Environmental Engineering: 2014
- University of Washington, Dept of Civil & Environmental Engineering: 2014
- University of Arizona, Dept of Systems and Industrial Engineering: 2014
- University of Illinois, Dept of Civil & Environmental Engineering: 2014
- University of Wisconsin, Dept of Civil & Environmental Engineering: 2011
- Ohio State University, Dept of Civil Engineering: 2009
- University of Illinois, Dept of Civil Engineering: 2009
- Tsingua University, College of Engineering, Beijing, China: 2009
- Jaoutong University, Department of Transportation, Beijing, China: 2008
- Polytechnic University, Madrid, Spain: 1999, 2002

- Polytechnic University of Catalonia, Spain: 1999
- University of Texas, Austin, Dept of Civil Engineering: 1999
- Massachusetts Institute of Technology, Dept of Civil Engineering: 1997
- University of Southern California, Depts of Mathematics and Computer Science: 1997
- University of California Berkeley, Institute of Transportation Studies, 1995, 2000, 2008
- Purdue University, Dept. of Civil Engineering: 1993
- California State Department of Transportation, numerous times

FUNDED RESEARCH PROJECTS SINCE 1995

- 2013 (PI) University of California Center for Economic Competitiveness in Transportation, UCConECT. US Department of Transportation. \$3.5 million per year for 3 years (matching funds in equal amount came from the California State Department of Transportation)
- 2012 (Co-PI) Design and Operation of Bi-Modal Urban Networks: System-optimum Strategies to Accommodate People's Day-long Decisions. National Science Foundation \$339,720
- 2012 (PI) Bus Stops near Signalized Intersections: Analytical Models, Management Strategies and Design Guidelines. University of California Transportation Center \$78,000
- 2012 (Co-PI) Transit Access and Egress via Bicycle Sharing. University of California Transportation Center \$130,000
- 2010 (Co-PI) Future of Urban Transport, VOLVO Research and Teaching Foundation \$630,000 (Renewed funding for Center of Excellence, originally awarded in 2004 for initial amount of \$2.4 million)
- 2009 (PI) Dynamic Sharing of the Urban Infrastructure by Buses and Cars. University of California Institute of Transportation Studies \$250,000
- 2009 (Co-PI) The Influence of Access Mode Characteristics on Trunk Technology Choice and Network Configuration. University of California Transportation Center \$103,956
- 2009 (PI) Strategies for Segregating Bus and Car Traffic in Amman, Jordan. Amman Institute (Jordan) \$82,311
- 2009 (Co-PI) Theories of Multimodal Urban Mobility. National Science Foundation \$365,502
- 2008 (PI) Formulating and Applying Models for Planning and Designing Integrated Public Transit. University of California Transportation Center \$129,645

- 2008 (PI) Experiments to Improve the Benefits of Freeway Carpool Lanes. University of California Transportation Center \$107,057
- 2007 (PI) Improving Public Transit to Serve Medi-Cal Recipients. University of California Transportation Center \$ 58,658
- 2005 (Co-PI) Urban Sustainability Initiative: Integrated Transit Service in Chengdu, China. Moore Foundation \$258,750
- 2005 (PI) On-Ramp Metering and Commuter Delay: A Before and After Study. California DOT \$124,729
- 2004 (PI) Improving Mobility through Enhanced Transit Services. California DOT \$248,956
- 2004 (Co-PI) Studies on the Simultaneous Interactions Between Policy and Technology in Urban Transportation. Volvo Research and Education Foundation \$358, 065
- 2003 (PI) On-Ramp Metering Experience to Increase Freeway Merge Capacity. California DOT \$36,706
- 2003 (PI) Validation of a Behavioral Theory of Multi-Lane Traffic. California DOT \$157,340
- 2002 (PI) Verifying Regularities in Freeway Traffic. California DOT \$33,848
- 2000 (PI) Stationary Traffic Models and Freeway Geometry. University of California Transportation Center \$29,946
- 2000 (PI) Identifying Density-Flow Relations on Arterial Surface Streets. California DOT \$43,885
- 1999 (PI) Automated Travel Time Measurement Using Vehicle Lanes from Loop Detector Speed Traps. California DOT \$74,966
- 1998 (PI) Traffic Features at Freeway Bottlenecks. California DOT and University of California Transportation Center \$51,819
- 1996 (PI) Identifying the Time-Dependent Features of Freeway Traffic. California DOT \$15,000
- 1995 (Co-PI) Design of Machine Vision-Based Vehicle Actuated Traffic Signal Controller. California DOT \$40,275

UNIVERSITY SERVICE AT UC-BERKELEY

- 2016 Member, Academic Senate Committee on Demonstrations and Student Actions

2015 – 2016 Member, Graduate Admissions Committee, Dpt. of Civil & Environ. Engineering
 2014 - 2015 Chair, Faculty Search Committee, Dpt. of Civil & Environ. Engineering
 2015 Member, Ad hoc Promotion Committee, Dpt. of Civil & Environ. Engineering
 2014 Member, Search Committee for Director of Berkeley ITS
 2013 - Director, University Transportation Center (UCCONNECT)
 2013 - 2014 Equity Advisor, Department of Civil Engineering
 2013 - 2014 Member, Committee on Diversity and Inclusion, College of Engineering
 2013 - 2015 Member, Strategic Planning Committee, Dpt. of Civil & Environ. Engineering
 2013 Member, Ad hoc Promotion Committee, Dpt. of Civil & Environ. Engineering
 2012 - 2013 Associate Director, University Transportation Center (UCTC)
 2012 - 2013 Member, Graduate Admissions Committee, Dpt. of Civil & Environ. Engineering
 Fall 2012 Member, Strategic Planning Committee, Dpt. of Civil & Environ. Engineering
 2011 Member, Graduate Admissions Committee, Dpt. of Civil & Environ. Engineering
 Fall 2011 Chair, ITS Ad hoc Committee for the Future of the Library
 Fall 2011 Member, Strategic Planning Committee, Dpt. of Civil & Environ. Engineering
 2010 Chair, Institute of Transportation Studies Executive Committee
 2010 Chair, Ad Hoc Promotion Committee, Dpt. of Civil & Environ. Engineering
 2010 Member, Graduate Admissions Committee, Dpt. of Civil & Environ. Engineering
 2010 - 2011 Member, Strategic Planning Committee, Dpt. of Civil & Environ. Engineering
 Fall 2009 Member, Strategic Planning Committee, Dpt. of Civil & Environ. Engineering
 2008 - 2009 Member, Curriculum Planning Committee, Dpt. of Civil & Environ. Engineering
 2006 - 2007 Program Leader, Transportation Group, Dpt. of Civil & Environ. Engineering
 2006 - 2007 Undergrad Student Advisor, Dpt. of Civil & Environ. Engineering
 2003 - 2005 Program Leader, Transportation Group, Dpt. of Civil & Environ. Engineering
 2003 - 2008 Member, Executive Committee, Dpt. of Civil & Environ. Engineering
 2002 - 2005 Member, Institute of Transportation Studies Executive Committee
 2002 - 2003 Member, Graduate Admissions Committee, Dpt. of Civil & Environ. Engineering
 2000 - 2002 Member, Graduate Studies Committee, Department of Civil Engineering
 2000 - 2002 Member, Space Committee, Department of Civil Engineering
 1999 - 2000 Member, Graduate Studies Committee, Department of Civil Engineering
 1999 - 2000 Member, Graduate Admissions Committee, Department of Civil Engineering
 1998 - 2000 Member, Committee on Academic Computing, College of Engineering

- 1996 - 1998 Member, Undergraduate Admissions Committee, Dpt. of Civil Engineering
- 1996 - 1998 Member, Graduate Studies Committee, Department of Civil Engineering
- 1996 - 1998 Member, Graduate Admissions Committee, Department of Civil Engineering

PROFESSIONAL LEADERSHIP AND SERVICE

- Director, University Transportation Center for Federal Region 9; University of California Center on Economic Competitiveness in Transportation (UCConECT), 2013 - present.
- Associate Editor, *Transportation Research Part B*, 2016 - present.
- Member, International Advisory Council, International Symposium on Transportation and Traffic Theory, 2013 - present.
- Member, California State Transportation Innovation Committee, 2016 - present.
- Member, Industrial Advisory Council, California State Polytechnic University, Pomona, 2015 - present.
- Guest Editor, *Computer-Aided Civil and Infrastructure Engineering*, Special Issue on Advanced Computational Methods for Traffic Modeling, Data Processing and ITS, 2013-2014.
- Guest Editor, *Transportation Research Parts A,B,C and E*, Special Issues on Select Papers for the 19th International Symposium on Transportation and Traffic Theory, 2011.
- Organizer and Host, 19th International Symposium on Transportation and Traffic Theory, July 18-20, Berkeley, 2011.
- Member, Executive Committee, University of California Transportation Center, UCTC, 2012 - present
- Acting Director, Institute of Transportation Studies, University of California-Berkeley, 2007-08
- Editorial Board Member, *Transportation Research Part B*, 1999-2016
- Editorial Board Member, *Transportation Research Part A*, 2001-2003
- Member, Transportation Research Board Committee on Managed Lanes, 2014-present
- Member, Transportation Research Board Committee on Traffic Flow Theory and Characteristics, 2000-2013.
- Track-Chair, 11th World Conference on Transportation Research, held in Berkeley, 2007
- Referee for:
 - *Transportation Research Parts A, B and C*
 - *Transportation Science*
 - *Transportation Research Record*

- ASCE Journal of Transportation Engineering
 - Transportation
 - Transportation Letters
 - Automatica (International Federation of Automatic Control)
 - IEEE Journal
 - Transpometrica
 - International Symposium on Transportation and Traffic Theory
 - Operations Research
- NSF Panel Reviewer 2009, 2012
 - NSF Grantee Conference, Participant, 2010, 2012
 - Frequent Referee for Promotion and Tenure Cases outside the UC

CURRENT PROFESSIONAL AND ACADEMIC ASSOCIATIONS MEMBERSHIP

- Engineer in Training Registration, State of California, 1984
- Member, Transportation Research Board, 1986-Present