John D. Leonard II
Professor, Department of Computer Science
Virginia Commonwealth University

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CONTENTS

I. EARNED DEGREES

Ph.D.	1991	University of California, Irvine	Engineering (Transportation)
M.S.	1986	University of California, Irvine	Engineering (Transportation)
B.S.	1983	University of California, Irvine	Engineering (Civil & Environmental)

II. EMPLOYMENT HISTORY

A. ACADEMIC EXPERIENCE

Professor, Department of Computer Science, VCU	8/2016-present
Executive Dean, College of Engineering, VCU	8/2018-6/2022
Executive Associate Dean, College of Engineering, VCU	8/2016-8/2018
Associate Dean, College of Engineering, GIT	4/2006-8/2016
Associate Chair, School of Civil and Environmental Engineering, GIT	7/2004-4/2006
Leave of absence (see professional experience below)	2/2002-6/2004
Associate Professor, Georgia Institute of Technology	1999 to 8/2016
Assistant Professor, Georgia Institute of Technology	1993-1999
Associate Director, Georgia Transportation Institute, GIT	9/2005-4/2006
Program Coordinator, Transportation, CEE, GIT	1999 to 2/2002
Associate Director, Georgia Transportation Institute	1999 to 2/2002
Research Engineer, Institute of Transportation Studies, U.C. Irvine	1991-1993
Lecturer, Irvine Valley College	1985-1991
Graduate Researcher, Institute of Transportation Studies, U.C. Irvine,	1983-1991

B. PROFESSIONAL EXPERIENCE

Executive Director, Commonwealth Center for Cloud Computing, Virginia	7/2022-present
Deputy Executive Director*, State Road and Tollway Authority, Georgia	2/2004-6/2004
Executive Director (Interim)*, State Road and Tollway Authority, Georgia	1/2003 to 1/2004
Deputy Executive Director*, State Road and Tollway Authority, Georgia	2/2002 to 1/2003

Transportation Planner, Van Dell and Associates 3/1983-11/1983

** Served as Deputy Executive Director then as Interim Executive Director. At appointment of Executive Director, he resumed service as Deputy Executive Director until returning to Georgia Tech.*

C. PROFESSIONAL AND LEADERSHIP EDUCATION

1. Performance Assessment in Higher Education, Harvard Graduate School of Education, November 6-8, 2011, Boston.
2. Exploring how people learn engineering – Conducting rigorous research in engineering education, National Science Foundation, August 1-3, 2011, Golden.
3. Institute for Management and Leadership in Education, Harvard Institutes for Higher Education, June 21-July 2, 2010, Boston.
4. University Leadership Program, Georgia Institute of Technology, 2008-2009, Atlanta.

III. HONORS AND AWARDS

A. INTERNATIONAL OR NATIONAL AWARDS

1. Dwight David Eisenhower Faculty Fellowship, Federal Highway Administration, 1997.
2. Bank of America Achievement Award, 1979.

B. INSTITUTE OR SCHOOL AWARDS

1. Outstanding Service Award, School of Civil and Environmental Engineering, 2000.
2. Class of 1969 Teaching Fellow, Georgia Tech, Fall, 1994.
3. David Lee Shanbrom Memorial Fellowship, UC Irvine, 1991.
4. Dissertation Fellowship, University of California Transportation Center, 1989-1990, 1990-1991.
5. Outstanding Civil Engineering Graduate Student, University of California, Irvine, 1985.
6. University Scholar, UC Irvine, 1979.

IV. RESEARCH, SCHOLARSHIP AND CREATIVE ACTIVITIES

A. PUBLISHED BOOKS, BOOK CHAPTERS AND EDITED VOLUMES

1. **Books**

   None

2. **Refereed Book Chapters**

   1. Atwaters, Y.A., J.D. Leonard and W. Pearson (2015) “Beyond the black-white minority experience: Undergraduate engineering trends among African Americans”, Changing the Face of Engineering, Slaughter (Ed.), Johns Hopkins University Press, pp. 149-190.
   2. Leonard, J.D., and M.D. Meyer, (1997) "Design of Transportation Facilities," Handbook of Mechanical Engineering, F. Kreith (Ed.), CRC Press, pp. 10.8-10.16.
   3. Leonard, J.D. and M.D. Meyer (1995) "Design of Transportation Facilities," Handbook of Engineering, R.C. Dorf (Ed.), CRC Press, pp. 850-858.

3. **Edited Volumes**

None

B. REFEREED PUBLICATIONS AND SUBMITTED ARTICLES

1. Published and Accepted Journal Articles

1. Cano, A., J.D. Leonard (2019). "Interpretable Multi-view Early Warning System adapted to Underrepresented Student Populations", IEEE Transactions on Learning Technologies, 15 April 2019, DOI: 10.1109/TLT.2019.2911079.
2. **Ni, D.**, J.D. Leonard, C. Jia, and J. Wang (2015) "Vehicle Longitudinal Control and Traffic Stream Modeling", Transportation Science, published online in Articles in Advance 10 Jul 2015, DOI: 10.1287/trsc.2015.0614
3. Graham, R.J., L.A. Garrow and J.D. Leonard (2010). Business travelers' refund and exchange behavior. Journal of Air Transport Management 16(4): 196-201. DOI: 10.1016/ j.jairtraman.2009.12. 002.
4. Pope, S., L.A. Garrow, A. Guin, J.D. Leonard, L. Bankston, and P. Campbell. (2009). A conceptual framework for collecting online airline pricing data: Challenges, opportunities, and preliminary results. Transportation Research Record 2016: 30-37. DOI: 10.3142/2106-04.
5. **Ni, D.**, J.D. Leonard, and B. Williams (2006). The Network Kinematic Waves Model: A Simplified Approach to Network Traffic. Journal of Intelligent Transportation Systems: Technology, Planning, and Operations, Volume 10, Issue 1, pp. 1-14.
6. **Ni, D.** and J.D. Leonard (2005). "A simplified kinematic wave model at a merge bottleneck" Applied Mathematical Modeling, Elsevier Science, Volume 29, Issue 11, pp. 1054-1072, November.
7. **Ni, D.** and J.D. Leonard (2005). "Markov Chain Monte Carlo Multiple Imputation for Incomplete ITS Data Using Bayesian Networks." Transportation Research Record 1935, pp. 57-67.
8. **Ni, D.**, J.D. Leonard, A. Guin, and C. Feng (2005). A Multiple Imputation Scheme for Overcoming the Missing Values and Variability Issues in ITS Data. ASCE Journal of Transportation Engineering, Vol. 131, No. 12, pp. 931-938.
9. **Ni, D.** and J.D. Leonard (2004). "Development of TrafficXML: the Common Vocabulary for Traffic Simulation." Transportation Research Record 1879, pp. 30-40.
10. **Ni, D.**, J.D. Leonard, A. Guin, and B. Williams (2004). A Systematic Approach for Validating Traffic Simulation Models. Transportation Research Record 1876, pp. 20-31.
11. **Oliveira, M.G.**, B. Williams and J.D. Leonard (2002) "Determining Traffic Stream Impacts of Radar Detectors using Microscopic Simulation" ASCE Journal of Transportation Engineering, Vol. 129, No. 1, pp. 7-15.
12. **Oh, J.** and J.D. Leonard (2002). "Vehicle detection using video image processing system: evaluation of PEEK Videotrak", ASCE Journal of Transportation Engineering, Vol. 129, No.4, pp.462-465.
13. **Oliveira, M.G.**, J. Geishheimer, G. Greneker and J.D. Leonard (2001), "A study of radar detector usage on Georgia Highways" Transportation Research Record, No. 1779, pp. 100-108.

14. Leonard, J.D. and R. Guensler, (1999) “TRANSNET - A Transportation Internet Cooperative,” IEEE Transactions on Education, vol.42, no.4, p.358.
15. Roberts, C.A., S. Washington and J.D. Leonard (1999) “Forecasting dynamic vehicular activity: bridging the gap between travel demand and emerging emissions models”, Transportation Research Record, No. 1664
16. Elefteriadou, L, J.D. Leonard, G. List, H. Lieu, M. Thomas, R. Giguere, G. Johnson and R. Brewish, (1999) “Beyond the HCM: A Framework for Selecting Simulation Models in Traffic Operational Analysis”, Transportation Research Board, No. 1678, p.96-106.
17. Washington, S., J.D. Leonard, C.A. Roberts, T. Young, J. Botha, and D. Sperling, (1998) “Forecasting Vehicle Modes of Operation Needed as Input to Modal Emissions Models,” Int. J. of Vehicle Design, Vol.20, Nos. 1-4, pp. 351-359.
18. Leonard, J.D. and **L. Rodegerdts**, (1998) "Comparison of Alternative Signal Timing Policies," ASCE Journal of Transportation Engineering, vol. 124, No. 6, pp. 510-520.
19. Bachman, W., J. Granell, R. Guensler and J.D. Leonard, (1998) “Research Needs in Determining Spatially Resolved Subfleet Characteristics,” Transportation Research Record no. 1625, pp. 139-146.
20. Leonard, J.D. and W.W. Recker, (1997) "A Streamlined Methodology for Application of TRANSYT-7F," ITE Journal, vol. 67, no. 2, pp. 26-34.
21. Leonard, J.D. and **W.J. Davis**, (1997) “Urban Traffic Calming Measures Conformance with AASHTO and MUTCD Guidelines,” ITE Journal, vol.67, no.8, pp.34-40.
22. Leonard, J.D. (1995) "Operational Characteristics of Triple Left Turns," Transportation Research Record no.1457, pp.104-110.
23. Leonard, J.D., (1994) "Alternate Approach to Estimation of Critical Cornering Speed”, ASCE Journal of Transportation Engineering, vol. 120, no.3, pp. 478-496.
24. Golob, T.F., W.W. Recker and J.D. Leonard (1987)"An Analysis of the Severity and Incident Duration of Truck Involved Freeway Accidents," Accident Analysis and Prevention, vol. 19, no. 5, pp. 375-395.*
25. Leonard, J.D. and W.W. Recker (1987) “A procedure for assessment of traffic impacts during freeway reconstruction,” Transportation Research Record, no. 1132, p. 14-24.*

bold *– graduate students advised by Dr. Leonard,*
** work not done at Georgia Tech*

2. **Conference Presentation with Proceedings (Refereed)**

1. C.R. Forest, M.L. Furst, R. Vito, and J.D. Leonard (2012). “An extracurricular undergraduate invention television show and competition at Georgia Tech”, Proceedings of the 16th Annual Conference of the National Collegiate Inventors and Innovators Alliance (NCIIA), San Francisco, CA, March 22-24.
2. **Smith, M.** and J.D. Leonard (2009) “Customer Satisfaction in Project Prioritization” National Research Council. Transportation Research Board Annual Meeting 2009, Paper #09-1483
3. Fujimoto, R., R. Guensler, M. Hunter, H.-K. Kim, J. Lee, J.D. Leonard, M Palekar, K. Schwan, and B. Seshasayee (2006). “Dynamic Data Driven Application Simulation of Surface Transportation systems”, V.N. Alexandrov et al. (Eds.): ICCS 2006, Part III, LNCS 3993, Springer-Verlag, pp. 425 – 432.

4. **Ni, D.** and J.D. Leonard (2004). "Simplified Kinematic Waves at a Diverge." The 8th World Multiconference on Systemics, Cybernetics and Informatics (SCI 2004), International Institute of Informatics and Systemics.
5. **Ni, D.** and J.D. Leonard (2004). "A Kinematic Wave Model For Merge Queuing". The International Conference on Computing, Communications and Control Technologies (CCCT'04), International Institute of Informatics and Systemics.
6. **Ni, D.** and J.D. Leonard (2003). "Simulation of Freeway Merging and Diverging Behavior", Proceedings of the 2003 Winter Simulation Conference (ed. S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice, eds), Institute of Electrical and Electronics Engineers, Piscataway, NJ, pp. 1693-1700.
7. R. Fujimoto and J.D. Leonard (2002) "Grand Challenges in Modeling and Simulating Urban Transportation Systems," First International Conference on Grand Challenges for Modeling and Simulation, January.
8. **Oliveira, M.G.,** J.D. Leonard, J. Geishheimer and G. Greneker (2002), "A Methodology for Assessing the Impact of Radar Transmissions on a Work Zone'" National Research Council (U.S.). Transportation Research Board. Meeting (81st : 2002 : Washington, D.C.). Preprint CD-ROM
9. **Huang, W.** and J.D. Leonard (2002). "Archiving real-time incident data: an ADUS application in metro Atlanta area" National Research Council. Transportation Research Board Annual Meeting 2002, Paper #02-3738
10. Washington, S. P., Leonard, J. D., & Roberts, C. A. (1997). Initial methodology for forecasting vehicle modes of activity as input to modal emissions models. In Anon (Ed.), Proceedings of the Air & Waste Management Association's Annual Meeting & Exhibition. Air & Waste Management Assoc.
11. Leonard, J.D. (1993) "An Alternate Approach to the Estimation of Large Vehicle Critical Cornering Speed on Freeway Connectors," presented to the 72nd Annual Meeting of the Transportation Research Board, Washington, D.C., January.
12. Leonard, J. D., B. Ramanathan, and W. W. Recker, (1992) "A real-time information processing algorithm for the evaluation and implementation of ATMS strategies," Intelligent Vehicles '92 Symposium., Proceedings of the, Detroit, MI, 1992, pp. 225-229. doi: 10.1109/IVS.1992.252261.*
13. Kitamura, R., J.P. Robinson, T.F. Golob, M.A. Bradley, J.D. Leonard, and T. Van Der Hoorn, (1992) "A Comparative Analysis of Time Use Data in the Netherlands and California," Proceedings of the 1992 P.T.R.C. European Transport Highways and Planning Summer Annual Conference, London.*

bold *– graduate students advised by Dr. Leonard*
** - work not done at Georgia Tech*

3. **Other Refereed Materials**

1. Washington, S., J.D. Leonard, D.G. Manning, C. Roberts, B. Williams, A.R. Baccus, A. Devanhalli, J. Ogle, and D. Melcher, (2002). "Scientific Approaches to Transportation Research Vols. 1 and 2", National Research Council, Project number: NCHRP.20-45, available on-line: http://onlinepubs.trb.org/onlinepubs/nchrp/cd-22/start.htm.

4. **Submitted Journal Articles**

None

C. OTHER PUBLICATIONS AND CREATIVE PRODUCTS

1. Non-refereed Conference Presentations with Proceedings

1. Valle, C., A. Blasick and J.D. Leonard (2013). "Preliminary analysis of factors influencing time-to-graduation by gender", *Proceedings of the ASEE annual meeting*, Atlanta, June.
2. Valle, C., A. Blasick and J.D. Leonard (2012). "Retention Analysis of Women Engineering Students", *Proceedings of the ASEE annual meeting*, San Antonio, June.
3. C. Ashmore, B. Schechter, S. Veeragoudar Harrell, C. Valle, J. Murray, W. Newstetter, L.J. Jacobs, J.D. Leonard and S. Rosser (2010) "INTEL: Presenting Realistic Exercises in a Statics Class," ASEE Annual Conference Proceedings, June.
4. C. Ashmore, D. Upton, B. Y. Lee, G. Thomas, S. Veeragoudar Harrell, C. Valle, J. Murray, W. Newstetter, L.J. Jacobs, J.D. Leonard, and S. Rosser (2009). "INTEL: Promoting Learning and Retention in a Statics Class," ASEE Annual Conference Proceedings, June.
5. Leonard, J.D. and **M. Oliveira** (2000) "Towards an areawide service measure" Proceedings of the Fourth International Symposium on Highway Capacity.
6. Hallmark, S.L., R. Guensler and J.D. Leonard, (1998) "Stopline Distributions of Speed and Acceleration for Signalized Intersections," Proceedings of the 1998 Air and Waste Management Annual Meeting, June.
7. Leonard, J.D., and **W.J. Davis** (1997) "Urban Traffic Calming Measures Conformance with AASHTO and MUTCD Guidelines," Proceedings of the ASCE Conference on Traffic Congestion and Traffic Safety in the 21st Century, June.
8. Guensler, R., and J.D. Leonard (1995) "A Monte-Carlo Technique for Assessing Motor Vehicle Emissions Model Uncertainty," Proceedings of the 1995 ASCE Transportation World Congress, San Diego, October.

bold *– graduate students advised by Dr. Leonard*

2. Software – institutional and higher education research reporting

1. Leonard, J.D., (2016) "A project exploring prevelance of NDA and foreign national restrictions". http://github.gatech.edu/jl66/research-with-nda Private
2. Leonard, J.D., (2015) "Looking at student performance and learning in 3710 with Bonnie Ferri". http://github.gatech.edu/jl66/learning-with-3710 Private
3. Leonard, J.D., (2014) "VIP program analytics ". http://github.gatech.edu/jl66/learning-with-VIP Private
4. Leonard, J.D., (2014) "Materials related to ABET visitation 2014". http://github.gatech.edu/jl66/abet-2014
5. Leonard, J.D., (2014) "Exploring how students perform in the problem solving studio sections of BMED2210". http://github.gatech.edu/jl66/learning-with-ps-studio Private
6. Leonard, J.D., (2014) "Comparing courses with different teaching techniques with Pete Ludovice". http://github.gatech.edu/jl66/learning-with-humor Private
7. Leonard, J.D., (2013) "Adhoc faculty reporting". http://github.gatech.edu/jl66/adhoc-faculty

8. Leonard, J.D., (2013) "Adhoc reporting for research proposals and awards ". http://github.gatech.edu/jl66/adhoc-research
9. Leonard, J.D., (2013) "ASEE engineering retention and time to graduation survey". http://github.gatech.edu/jl66/asee-retention-survey Private
10. Leonard, J.D., (2013) "GTF reporting of available balances and expenditures.". http://github.gatech.edu/jl66/term-gtf-reporting
11. Leonard, J.D., (2013) "Adhoc admissions reporting ". http://github.gatech.edu/jl66/adhoc-admissions
12. Leonard, J.D., (2013) "Annual survey of Hispanic Business Magazine ". http://github.gatech.edu/jl66/survey-hispanic-business-mag
13. Leonard, J.D., (2013) "A project for adhoc faculty workload reporting ". http://github.gatech.edu/jl66/adhoc-faculty-workloads
14. Leonard, J.D., (2012) "Term reports to support the College of Engineering EEO/transfer student activities ". http://github.gatech.edu/jl66/term-engr-eeo
15. Leonard, J.D., (2012) "ASEE comparisons of engineering colleges ". http://github.gatech.edu/jl66/asee-benchmarks
16. Leonard, J.D., (2011) "Working project to investigate changes in majors ". http://github.gatech.edu/jl66/adhoc-changes-in-major
17. Leonard, J.D., (2011) "Daily report during registration to track graduate student registration and employment ". http://github.gatech.edu/jl66/term-grad-waivers
18. Leonard, J.D., (2010) "Adhoc gender and ethnicity reporting ". http://github.gatech.edu/jl66/adhoc-geneth
19. Leonard, J.D., (2009) "Daily report during registration to track classroom utilization ". http://github.gatech.edu/jl66/term-classroom-utilization
20. Leonard, J.D., (2009) "Working scripts and files for the annual ASEE/US News research expenditure survey ". http://github.gatech.edu/jl66/asee-usnews-research-numbers Private
21. Leonard, J.D., (2009) "Eligibility for Tau Beta Pi and letters of invitation ". http://github.gatech.edu/jl66/term-tau-beta-pi

3. **Software – general tools for querying and processing institutional data**
    1. Leonard, J.D., (2013) "Useful make macros specific to Georgia Tech. ". http://github.gatech.edu/jl66/useful-gatech-macros
    2. Leonard, J.D., (2013) "Repository to host ASEE faculty salary survey activities ". http://github.gatech.edu/jl66/asee-salary-survey Private
    3. Leonard, J.D., (2015) "Development of gap systems for the College of Engineering ". http://github.gatech.edu/jl66/engr-gap-systems
    4. Leonard, J.D., (2014) "Tools for pulling and analyzing the latest IPEDS data. ". http://github.gatech.edu/jl66/adhoc-ipeds
    5. Leonard, J.D., (2013) "Tools and scripts for managing the BAGODATA repository of precious COE data ". http://github.gatech.edu/jl66/bagodata-tools Private
    6. Leonard, J.D., (2012) "Gold table dictionary, tools for uploading and downloading definitions ". http://github.gatech.edu/jl66/dsg-gold-table-dictionary

7. Leonard, J.D., (2012) "3gen reports for IRP-Reporter ". http://github.gatech.edu/jl66/IRP-Reports3
8. Leonard, J.D., (2012) "Home for the DSG gold tables build code and documentation ". http://github.gatech.edu/jl66/dsg-gold-table-build
9. Leonard, J.D., (2010) "2nd generation IRP reports ". http://github.gatech.edu/jl66/IRP-Reports2
10. Leonard, J.D., (2009) "Modules for generating PPT from png or jpg files ". http://github.gatech.edu/jl66/IRP-PPTWriter
11. Leonard, J.D., (2009) "First generation IRP reporter perl framework". http://github.gatech.edu/jl66/IRP-Reporter
12. Leonard, J.D., (2009) "Core utility for writing result sets to excel". http://github.gatech.edu/jl66/irp-xlswriter
13. Leonard, J.D., (2009) "Project repository tracking tools ". http://github.gatech.edu/jl66/acme-project-tracker

4. **Software – Transportation engineering tools and applications**

1. Leonard, J.D. (2008) GT-TAK. Georgia Tech TRANSIMS Army Knife. This application provides common interface to a suite of tools for programmatically creating and modifying TRANSIMS input and output files. These tools were developed in support of project two TRANSIMS-related research projects (see IV.E.1.1 and E.1.2) and are distributed as an open-source application on SourceForge.net. See: https://transims.svn.sourceforge.net/svnroot/transims/version4/branches/georgiatech http://www.transims-opensource.org/wiki/doku.php?id=software:projects:start
2. Leonard, J.D. (1998) McT7F. Under contract from McTrans, designed and implemented the Windows95/NT user interface for TRANSYT-7F. This software tool was used by over 1400 traffic engineers around the world for developing coordinated signal timing plans.
3. Leonard, J.D. (1998) Automated Grade Book. Prototype system for automated roster creation, grade book management, and web publication tool, SUCCEED Faculty Development. In its first quarter of deployment the grade book was used by 9 instructors for 11 courses and impacted 292 undergraduate and graduate students.
4. Leonard, J.D. (1998) Kwaves98. Freeway Operations Teaching Tool. This software enhances the underlying theory of GTWaves and incorporates three-dimensional graphics to promote better understanding of freeway operation and congestion concepts.
5. Leonard, J.D. (1997) GTWaves – Computer Implementation of a "Simplified Theory of Kinematic Waves", Office of Traffic Operations, California Department of Transportation. This software has been deployed at Caltrans headquarters and in 12 district offices and is used for evaluation of work zones. Beyond internal Caltrans distribution, 74 people have registered for internet downloads from institutions including UC Berkeley, Umass Lowell, NC State, Virginia Tech, NC State, GDOT, TTI and FHWA. The software has also been integrated into two short courses at FHWA and UC Berkeley. (Related conference presentations: Leonard, 1998; related invited seminar presentations, Leonard, 1997)
6. Leonard, J.D. (1996) METS - Medio para la Evaluación de Temporización de Semáforos, Pascal. Spanish version of WEST. METS is distributed internationally through the McTrans Center and is used by three agencies in Latin America.

7. Leonard, J.D. (1995) WEST - Workspace for Evaluation of Signal Timings, McTrans Software Center. Object Pascal. This software is distributed nationally through McTrans and is used by over 20 traffic engineering firms and government agencies for signal timing plan development and comparison. (Related published journal articles: Leonard and Recker, 1997a; Leonard and Rodegerdts, 1998b. Related conference presentations: Leonard, 1995a)
8. Leonard, J.D. (1995) MOBILE-5M FORTRAN. Developed and implemented monte-carlo estimation procedure to MOBILE-5 air quality computer model to account for variability in internal model parameters. Model outputs modified to include 5-, 50- and 95-percentile estimates for light-duty gas vehicle (LDGV) emissions.
9. Leonard, J.D. (1993) CHKCONF - Check Configuration. Pascal. Performs batch-mode machine configuration (IBM-PC) check. Generates complete error descriptions with suggestions for correction. Developed to aid distribution of traffic engineering software and distributed as a part of the CHAOS and POSTKAOS packages.
10. Leonard, J.D. (1993) POSTKAOS - Postprocessor for TRANSYT-7F Simulation. Pascal. Prototype system developed for CALTRANS. Demonstrates alternate evaluation techniques for signal timing plan comparison. POSTKAOS was a prototype application used to demonstrate decision support concepts at short courses, conferences and business meetings.

5. **Published Book Reviews**

1. Leonard, J.D. (1994) Review of "Daganzo, C. (Ed.), Proceedings of the 12th International Symposium on Transportation and Traffic Theory," Transportation Science, Vol. 28, No. 4, November, pp. 358-360.

D. PRESENTATIONS

1. Invited Conference and Workshop Presentations

1. Leonard, J.D. (1997) "ITS and Traffic Operations," Second Executive Conference on Transportation and the Environment, sponsored by the International Road Federation and the World Bank, October.

2. Conference and Workshop Presentations

1. Leonard, J.D. (2014) "Unit-level strategic planning: selecting, measuring and communicating KPI", Association of Institutional Research, Orlando, May.
2. Leonard, J.D. (2012) "Agile approach to data warehousing", Association of Institutional Research, New Orleans, June.
3. Leonard, J.D. (2012) "Evaluating faculty workloads", Association of Institutional Research, New Orleans, June.
4. Leonard, J.D. (2005) "Grand Challenges in Traffic Modeling" presented to the 13th Workshop on Traffic Models, Sedona, AZ, September.
5. Leonard, J.D. (2001) "Passing the baton: HCM software from research to practice," Presented to the 80th Annual Meeting of the Transportation Research Board, Washington, D.C. January.
6. Leonard, J.D. (2000) "Uses of ITS data for planning and operations" presented to the 47th annual meeting of the Southern District Institute of Transportation Engineers, Greenville, North Carolina, April.

7. Leonard, J.D. (1998) “An Approach for Evaluating Freeway Systems,” presented to the 77th Annual Meeting of the Transportation Research Board, Washington D.C., January.
8. Leonard, J.D. (1997) "Navigating the Web,” presented to the District 5 Institute of Transportation Engineers Conference on Computer Applications in Transportation, March.
9. Leonard, J.D. (1997) "Creating a Home Page,” presented to the District 5 Institute of Transportation Engineers Conference on Computer Applications in Transportation, March.
10. Leonard, J.D. (1996) "HCM Examples on the WWW," presented to the Signalized Intersection Subcommittee, Highway Capacity and Quality of Service Committee (A3A10), Transportation Research Board, January.
11. Leonard, J.D. (1996) "Using the WWW as a Research Tool," presented to the Faculty Development Workshop, Athens, GA, September.
12. Leonard, J.D. (1995) "Streamlined Application of TRANSYT-7F," presented to the Traffic Signals Subcommittee (A3A18), Transportation Research Board, January.
13. Leonard, J.D. (1995) "Capacity Analysis of Triple Left Turns," presented to the 7th Annual Meeting of District 5 of the Institute of Transportation Engineers, April.
14. Leonard, J.D. (1995) "Introduction to HTML and WWW servers," presented to the Faculty Development Workshop, Athens, GA, August.
15. Leonard, J.D. (1995) "Education and Training Barriers to ATMS Deployment," presented to the International Workshop of Advanced Traffic Management Systems, St. Petersburg, Florida, October.
16. Leonard, J.D. (1995) "Education and Training Solutions for ATMS Deployment," presented to the International Workshop of Advanced Traffic Management Systems, St. Petersburg, Florida, October.
17. Leonard, J.D. (1995) "Applications of Multimedia Teaching Technology Matrices," presented to the University System of Georgia Faculty Development Workshop, Macon, December.
18. Leonard, J.D. (1995) "Future Directions of Multimedia Teaching Technology Matrices" presented to the University System of Georgia Faculty Development Workshop, Macon, December.
19. Leonard, J.D. (1994) "Operational Characteristics of Triple Left Turns," presented to the 73rd Annual Meeting of the Transportation Research Board, Washington, D.C., January.
20. Leonard, J.D. (1994) "Traffic Signal Optimization Software: Which and Why," presented to the Georgia Section ITE 994 Summer Session, Savannah, Georgia, July.
21. Leonard, J.D. (1994) "State of Modeling," presented to the Models in Support of IVHS conference, St. Petersburg, Florida, December.
22. Leonard, J.D. (1994) "Where Do We Go From Here," presented to the Models in Support of IVHS conference, St. Petersburg, Florida, December.
23. Leonard, J.D. (1993) "Simulation Architecture for Advanced Traffic Management Systems," Proceedings of the Fifth International Conference on Computing in Civil Engineering, June.

24. Leonard, J.D. (1993) "Demonstration of Prototyping Tools for ATMS Design," Large Urban Systems: Proceedings of the 1993 ATMS Conference, October.

3. **Invited Seminar Presentations**

1. Leonard, J.D. (2004) “Grand Challenges in Transportation” presented to Department of Civil Engineering, University of Auckland, May.
2. Leonard, J.D. (2004) “Towards a Transportation Center at Auckland” presented to the Faculty of the College of Engineering, University of Auckland, December.
3. Leonard, J.D. (2000) “Recent activities in highway transportation simulation” presented to the MSREC brown-bag seminar series, March 28.
4. Leonard, J.D. (2000) “An automated gradebook” presented to the Center for Enhancement of Teaching and Learning Showcase, Georgia Institute of Technology, April 20.
5. Leonard, J.D. (2000) “Intelligent Transportation Systems in Georgia” presented to the Association of County Commissioners in Georgia, August 1.
6. Leonard, J.D., (2000) “Sustainable Transportation Systems” presented to ISYE 4803, Georgia Institute of Technology, November 7.
7. Leonard, J.D. (1997) “Incident Management and Kinematic Waves,” presented to the Transportation Research Center, North Carolina State University, September.
8. Leonard, J.D. (1995) "Instructional Technologies in the Classroom," presented to the Center for Enhancement of Teaching and Learning Brown Bag seminar, November 1995.
9. Leonard, J.D. (1993) "Intelligent Transportation Systems: IVHS and ATMS," presented to CE8002: Environmental Engineering Seminar Series, Georgia Institute of Technology, October.

E. GRANTS AND CONTRACTS

1. As Principal Investigator

1. “Developments of Regional Impact and TRANSIMS”
   US DOT/Federal Highway Administration
   Amount: $60,924 (period: June 2009-May 2010)
   Role: Principal investigator
2. “Determining travel time reliability in TRANSIMS”
   US DOT/Federal Highway Administration
   Amount: $60,000 (October 2007-September 2008)
   Role: Principal investigator
3. “Quantifying secondary accidents on Atlanta freeways”
   Georgia Department of Transportation
   Amount: $100,000 (7/1/2001-6/30/2003)
   Role: Principal investigator
4. “Technical enhancements to the Kwaves software”
   California Department of Transportation
   Amount: $139,427 (plus $13,000 matching funds) (4/1/2000-6/30/2003)
   Role: Principal Investigator

5. "Prototype for an Automated Gradebook"
   SUCCEED Faculty Development Program
   Amount: $8000 (Fall 1998)
   Role: Principal Investigator

6. "Implementation of a Simplified Theory of Roadway Kinematics"
   California Department of Transportation
   Amount: $89,841 (1/1/95-12/30/97)
   Role: Principal Investigator

7. "Investigation of Vehicles As Traffic Stream Probes"
   California ATMS Testbed (Caltrans)
   Amount: $81,163 (7/1/92 - 6/30/93)
   Role: Principal Investigator

8. "Integration of ATMS Components"
   California ATMS Testbed (Caltrans)
   Amount: $124,103 (7/1/92 - 6/30/93)
   Role: Principal Investigator

9. "Superelevation Rates on Rural Highways"
   California Department of Transportation
   Amount: $45,458 (6/91 - 6/93)
   Role: Principal Investigator

10. Stochastic Platoon-based model of traffic flow"
    University of California Transportation Center
    Amount: $15,000 (8/1/90 - 7/31/91)
    Role: Principal Investigator

11. "Stochastic Platoon-based model of traffic flow"
    University of California Transportation Center
    Amount: $10,000 (8/1/89 - 7/31/90)
    Role: Principal Investigator

12. "Operational Characteristics of Triple Left Turns"
    California Department of Transportation
    Amount: $20,000 - (7/1/92 - 9/30/94)
    Role: Principal Investigator

2. **As Co-Principal Investigator**

1. "Assessing the Air Quality Impacts of Intelligent Transportation Systems in Georgia"
   Georgia Department of Transportation
   Amount: $275,000 (plus $10,000 matching funds) (8/1/1998-11/30/2003)
   Role: Co-principal Investigator (with Dr. Guensler)

2. "Scientific Approaches for Transportation Research"
   National Highway Coorperative Research Program (NCHRP)
   Amount: $200,000 (3/1/1998-3/23/2001)
   Role: Co-principal investigator. Responsible for one-half of project deliverables. (PI: Dr. Washington, CEE/GT.)

3. "Development of Statewide Strategic Plan for IVHS"
   Georgia Department of Transportation
   Amount: $600,000 (1/1/95-12/31/96)
   Role: Co-principal Investigator. Responsible for overall project management, day-to-day

project management, management of students, allocation of resources, research directions, analysis, and final report preparation. (PI was Dr. Meyer at CEE/GT.)

4. "Evaluation of Radar Vehicle Detection Technologies"
   Federal Highway Administration
   Amount: $130,000 (4/1/1998-3/30/2002)
   Role: Co-Principal Investigator. This is a subcontract with GTRI and the amount represents the CEE portion of the project only.

5. "Automated Highway Systems: Precursor Systems Analysis"
   Federal Highway Administration
   Amount: $100,809 - (11/22/93 - 9/30/94) (CEE portion only)
   Role: Principal Investigator. Dr. Leonard was PI of this subcontract to GTRI. The amounts listed above represent only the CEE portion for which he was directly responsible.

3. **As Senior Personnel or Contributor**

   1. "ITR: Simulation-Based Operations Planning for Regional Transportation Systems,"
      National Science Foundation Grant EIA-0219976
      Amount: $400,000 (11/1/2002-10/30/2005)
      Role: Proposal co-writer (R. Fujimoto, J. Leonard and R. Guensler)
      (I co-wrote the proposal, but then went on leave to work at the Tollway Authority. Dr.Guensler joined the team to continue my role as co-investigator.)

4. **Pending Proposals**

   None

5. **Proposals submitted but not funded (last two years)**

   (provided as addendum)

F. OTHER SCHOLARLY AND CREATIVE ACCOMPLISHMENTS

1. **Voices of Innovation**

   To address a nation-wide shortage of graduates heading for engineering schools – particularly in minority groups – the American Association of Engineering Societies (AAES) worked with Jim Metzner Productions (JMP) to develop a series of radio spots describing to the general public what engineers do. JMP produced the *Voices of Innovation* series, which ran for two years on over 100 public and commercial stations, bringing stories about engineers and engineering in a language everyone could understand. As part of this larger initiative, Dr. Leonard worked with AAES and JMP to develop a series of 6 radio spots describing different aspects of transportation engineering. These radio spots were recorded and produced from late 2001 to early 2002.

   1. Program #01 – Intersections – (2001)
      https://dl.dropboxusercontent.com/u/65178247/VOI/Track_01-intersections.mp3
   2. Program #10 - Driver behavior – (2001)
      https://dl.dropboxusercontent.com/u/65178247/VOI/Track_10-driver%20behavior.mp3
   3. Program #14 – Forecasting – (2001)
      https://dl.dropboxusercontent.com/u/65178247/VOI/Track_14-forecasting.mp3

4. Program #18 - Intelligent transportation systems – (2001) https://dl.dropboxusercontent.com/u/65178247/VOI/Track_18-intelligent%20systems.mp3
5. Program #22 - Older drivers – (2001) https://dl.dropboxusercontent.com/u/65178247/VOI/Track_22-older%20drivers.mp3
6. Program #33 - Seamless transportation – (2001) https://dl.dropboxusercontent.com/u/65178247/VOI/Track_33-seamless%20transportation.mp3

G. SOCIETAL AND POLICY IMPACTS

1. Press and media coverage

Dr. Leonard has contributed to the local, state and national transportation policy dialog, raising awareness of the impact of technologies on transportation and transportation systems. He has also been responsible for leading an embattled state agency through difficult times. This section highlights some of those contributions.

1. Visser, Steve (Jan.20, 2005) "Georgia 316 decision due today", Atlanta Journal Constitution.
2. Stanford, Duane (Nov.7, 2003) "New rules to limit use of toll funds", Atlanta Journal Constitution.
3. Ledford, Joey (Nov.5, 2003) "Imagine: one card for tolls, parking, train", Atlanta Journal Constitution.
4. Sunshine, Luci (Mar.31, 2003) "New GA 400 boss wrong to keep tolls permanent", Letter to the Editor, Atlanta Journal Constitution.
5. Hairston, Julie (Mar.24, 2003) "GA 400 a victim of its own success", Atlanta Journal Constitution.
6. Hairston, Julie (Feb.28, 2003) "Perdue takes over at tollway panel", Atlanta Journal Constitution.
7. Hairston, Julie (Feb.10, 2003) "Bill would restrict use of GA 400 tolls", Atlanta Journal Constitution.
8. Ledford, Joey (Dec.20, 1999) "Tech Prof envisions traffic forecasts", Atlanta Journal Constitution.

H. OTHER PROFESSIONAL ACTIVITIES

1. Professional Registrations

1. California Community Colleges Lifetime Service Teaching Credential: Engineering Sciences, Computer and Related Technologies, 1985.
2. California Engineer-in-Training, #56746, 1983.
3. California State General Contractor, License No. B434979, 1979.

2. Consulting

1. Gardner Systems, 1998. Developed prototype performance monitor for integration with the Salt Lake City Traffic Management Center in preparation for the Winter Olympics in 2002.

2. Transcom Engineering, 1997. Aided development of UTCS 1.5 GC as part of the Atlanta ATMS.
3. LRE Engineering, Inc., February 1997. Aided in development of signal coordination plan for the Emory University Campus.
4. Concept Technology, Inc. July 1986 to August 1993. Assisted and advised the firm with conversion of FORTRAN-IV computer codes to FORTRAN-77 as part of a contract with the Army Corps of Engineers.
5. RM Builders, Inc. January 1983 to August 1993. Developed and implemented a Weekly Payroll and Job-Costing computer program for the firm. Also directed and assisted the firm with general office automation and employee training.
6. Technical Assistance Coordinator, California Department of Transportation, 1985-1993.
7. Systems Manager, Institute of Transportation Studies (ITS), 1985-1991.
8. Software Design Specialist, Buro Goudappel Coffeng, B.V., Netherlands, 1/1987-6/1987.

V. TEACHING

A. COURSES TAUGHT

Dr. Leonard returned to the CS faculty at VCU in August 2022.

	Semester	Course	Title	Enrl
1.	Fall2022	CMSC508	Database Theory	104

Georgia Tech: This table documents Dr. Leonard's most recent teaching activity. Dr. Leonard carried a full teaching load prior to Spring 2002, was on leave-of-absence between Spring 2002 and Spring 2005, served as Associate Chair in CEE from Spring 2005 to Spring 2006, and since Spring 2006 has served as Associate Dean for the College of Engineering. Since beginning service as Associate Dean in April 2006, Professor Leonard has continued to guest lecture single class sessions and seminars, and to mentor and advise graduate students.

	Semester	Course	Title	Enrl
2.	Fall2005	CEE6635A	Tech Innovation-Transportation	8
3.	Spr2005	CEE8811C	Grad student seminar (1 unit)	12
4.	Spr2002	CEE8800C	Grad student seminar (1 unit)	8
5.	Fall2001	CEE8800A	Grad student seminar (1 unit)	16
6.	Spr2001	CEE4803D	Pilot – COE1361	19
7.	Spr2001	CEE6632A	Simulation in Transportation	12
8.	Fall2000	CEE2010A	Computational Modeling	74
9.	Fall2000	CEE8800A	Grad student seminar (1 unit)	14
10.	Spr2000	CEE2010A	Computational Modeling	64
11.	Fall1999	CEE2010A	Computational Modeling	69

B. INDIVIDUAL STUDENT GUIDANCE

1. Ph.D. Students

a. (Graduated)

1. Mshadoni Smith
   Starting semester: Spring 2006
   Degree awarded: Summer 2010
   Thesis title: "Integrating customer satisfaction into the project prioritization process"
   Graduation: August 2010
   Competitive awards: Eisenhower Fellowship (2006), Eno Fellowship (2006), Jorgensen Scholarship (2007), GDOT Scholarship (2008)
   Current position: Transportation Data Analyst, Federal Transit Administration

2. Daihang Ni
   Degree awarded: Fall 2004
   Thesis title: "Generalized Simplified Theory of Kinematic Waves"
   Current position: Associate Professor (tenured), University of Massachusetts, Amherst

3. Jutaek Oh
   Degree awarded: Spring 2003 (co-advisor with S. Washington)
   Thesis title: "Evaluation and Enhancement of Accident Prediction Models and Accident Modification Factors for Intersections"
   Current position: Professor, Korea National University of Transportation, Seoul

4. Marcelo Oliveira
   Degree awarded: Spring 2002
   Thesis title: "An integrated methodology for the evaluation of the safety impacts of in-vehicle driver warning technologies."
   Current position: Senior Study Director, Westat, Atlanta

5. David White
   Degree awarded: May 2002 (co-advisor with S. Washington)
   Thesis Title: "Development of a methodology for identifying effective countermeasures in regional safety management programs using a Bayesian safety assessment framework."
   Current position: Senior Business Analysis, Intercontinental Hotel Group, Atlanta

6. W. Jeffrey Davis
   Degree awarded: Summer 1997 (co-advisor with P. Parsonson)
   Thesis Title: "Urban Arterial Roadway Corridors: An Evaluation of Infrastructure and Land Use Relationships"
   Current position –Professor (tenured), The Citadel, Charleston

b. Ph.D. Students (not graduated)

1. Weimin Huang
   Starting quarter: Fall 1998
   Comprehensive exam: Passed Fall 2001
   Thesis title: "Freeway congestion and secondary accidents"
   Current position: Senior Researcher, HERE (private company), Summit, New Jersey
   Degree awarded: (Withdrew from school. No plans to finish dissertation.)

2. M.S. Students (graduated with thesis)

1. Stephanie Shealey
   Began advising: Spring 2008

Graduation Date: June 2010
Thesis title: “Implementing the DRI process within TRANSIMS”

2. Jeff Metarko
Began Advising: Fall 1995
Graduation Date: Winter 1997
Thesis Title: “A Procedure to Catalog and Retrieve Traffic Data from Pre-recorded Traffic Surveillance Camera Videotapes”

3. Patrice Givens
Began Advising: Summer 1994
Graduation Date: Fall 1994
Thesis Title: “Design Standards for Speed Humps in Fulton County, GA”

4. Lee Rodegerdts
Began Advising: Fall 1994
Graduation Date: Winter 1996
Thesis Title: “Comparison of Traffic Signal System Timing Policies using Stochastic Simulation”

5. Edward Bruce
Began Advising: Fall 1993
Graduation Date: Summer 1994
Thesis Title: “Enhanced Methodology for Quantifying Urban Freeway Congestion and Its Use within Congestion Management Systems.”

6. Doug Bilse
Began Advising: Fall 1991
Graduation Date: Winter 1993
Thesis Title: "Superelevation Rates at Rural Section Curves."

7. Balaji Ramanathan
Began Advising: Fall 1991
Graduation Date: Spring 1992
Thesis Title: "Implementation of a Real-Time Processing Algorithm in TRANSYT-7F."

3. **Undergraduate Students**

1. Jason Zhang, Presidential Undergraduate Research Award, “Integrating video game engines and traffic science models”, Summer 2005.

4. **Service on thesis or dissertation committees**

1.	Rama Chilukuri	Fall 2015	CEE	(Dr. Jorge Laval)
2.	Stacy Mumbower	Summer 2013	CEE	(Dr. Laurie Garrow)
3.	Wonho Suh	Summer 2012	CEE	(Dr. Mike Hunter)
4.	Danjue Chen	Spring 2012	CEE	(Dr. Jorge Lavel)
5.	Hoe Kim	Spring 2010	CEE	(Dr. Mike Hunter)
6.	Hernando Jimenez	Fall 2009	AE	(Dr. Dimitri Mavris)
7.	Seung Kook Wu	Fall 2009	CEE	(Dr. Mike Hunter)
8.	Dan Iliescu	Fall 2008	CEE	(Dr. Laurie Garrow)
9.	Hsing-Chung Chu	Fall 2007	CEE	(Dr. Mike Meyer)

10. Jennifer Ogle	Spring 2005	CEE	(Dr. Karen Dixon)
11. Hainan Li	Fall 2004	CEE	(Dr. Randy Guensler)
12. Angshuman Guin	Summer 2004	CEE	(Dr. Billy Williams)
13. Chunyan Wang	Spring 2002	CEE	(Dr. Karen Dixon)
14. Craig Roberts	Spring 2000	CEE	(Dr. Simon Washington)
15. Shauna Hallmark	Spring 1999	CEE	(Dr. Randy Guensler)
16. Juan Carlos-Viera	Winter 1995	CEE	(Dr. Peter Parsonson)
17. Kevin Gue	Summer 1995	ISYE	(Dr. John Bartholdi)
18. George Mazur	Fall 1994	CEE	(Dr. Michael Meyer)
19. Jeong-Woo Seo	Summer 1994	CEE	(Dr. Jorge Vanegas)
20. Zhongxi Zhu	Spring 1994	ISYE	(Dr. George Nemhauser)

1. **Mentorship of postdoctoral fellows or visiting scholars**
    1. Daiheng Ni, January 2005 – August 2005. (see details in Ph.D. Student section below.)

C. OTHER TEACHING ACTIVITIES

1. **Course Development**
    1. COE1361,"Computational modeling for Engineers" (3-0-3). Developed and implemented a pilot course in computational modeling for the College of Engineering. During its first semester, the course was taught to 20 freshman. When fully deployed, this course will be required of all undergraduate engineering majors, and serve about 1800 freshman per year.
    2. CEE2010, "Computation Modeling in Civil Engineering,) (3-0-3). Developed this undergraduate course required of all civil engineering students. The course focuses on problem solving, programming and numerical methods. This course serves about 70 students per semester and is the largest course in CEE.
    3. CE 2523, "Structured Computer Programming for Engineers," (3-0-3). Developed this undergraduate required course on analytical problem-solving skills and techniques via computer programs in a civil engineering setting. Topics include general programming techniques (applicable to all languages), FORTRAN specific implementations, and advanced topics such as numerical methods, optimization and debugging, and supercomputer strategies. This course is required for all CEE undergraduates and has been adopted by ME, NE and EAS as an acceptable substitute for their related courses.
    4. CE 8103D, "Advanced Technology Applications in Transportation," (3-0-3). This course provides an overview of ITS efforts in the United States. The scope, emphasis, expected benefits and current deployment projects of each of the six major areas of ITS is presented. Surveillance and communications, technologies at the foundation of ITS are reviewed. The National ITS Program Plan, with its descriptions of 30 ITS users services is discussed. Application examples and case studies are discussed to introduce alternate implementation and deployment strategies. Emphasis throughout the course is placed on the role played by the civil engineer within the overall implementation and deployment process. This course was formally adopted as CEE6635 "Technology Applications in Transportation."

5. CE 8113, "Computer Applications in Transportation," (2-3-3) Introduction to simulation models used in traffic and transportation systems evaluation. Covers system representation, data collection, data input, output interpretation, and alternatives evaluation. Emphasis is placed on underlying analytical models, modeling limitations, and experimental design. This course was formally adopted as CEE6632 "Simulation Models in Transportation."
6. CE 8113C&D, "Traffic Flow Theory," (2-3-3) Introduction to Traffic Flow Theory and applications to solving various transportation-related problems. Topics covered include macroscopic flow relationships, shock wave theory, queueing theory, car following theory, and delay theory. Co-developed with J. Daniel, this course was formally adopted as CEE6636 "Traffic Flow Theory."
7. CE8102, "Electronic Publishing of Transportation Research," (2-0-2). This course introduces transportation graduate student to various aspects of electronic publishing on the WWW, as both a research tool, and a dissemination tool. Topics include basic HTML; higher level issues related to style, organization, and content; critical review of existing transportation-related WWW sites to determine "what works" and "what doesn't work" with respect to publishing of transportation-related content; technical issues related to how the web and other electronic protocols work (e.g., FTP, HTTP, telnet, etc.); communications issues (e.g., OSI layered communications, getting modems to work, the role of the ISP); integration of the WWW with transportation data collection (especially related to ITS and traveler information); data bases and data warehousing; languages to "activate" the sites; copyright issues, etc. Co-developed with R. Guensler.
8. CE 129, "Traffic Control Systems," (3-0-3), UC Irvine. This course exposes undergraduates to techniques and technologies associated with the control of urban and highway traffic. Topics covered include Available Technologies, Control Concepts - Urban Streets, Control Concepts - Highways, Detectors, Local Controllers, System Masters, and Communications.

2. **Professional Development / Continuing Education**

1. "Traffic Signal Operation in Coordinated Systems," Georgia Tech. Responsible for 12 contact hours covering evaluation and optimization of coordinated systems of intersections using TRANSYT-7F and CORSIM, as part of an overall 5-day short course, May 2001.
2. "Scientific Approaches to Transportation Research" responsible for 1 contact hour on management of data as part of a 6 hour course, National Cooperative Highway Transportation Program (NCHRP) Workshop at the TRB Annual Meeting, January 2001.
3. "Traffic Signal Operation in Coordinated Systems," Georgia Tech. Responsible for 12 contact hours covering evaluation and optimization of coordinated systems of intersections using TRANSYT-7F and CORSIM, as part of an overall 5-day short course, May 2000.
4. "Traffic Signal Operation in Coordinated Systems," Georgia Tech. Responsible for nine contact hours covering evaluation and optimization of coordinated systems of intersections using TRANSYT-7F, as part of an overall 5-day short course, June 1999.
5. "Traffic Control at Local Intersections," Georgia Tech. Responsible for six contact hours covering HCM and TRANSYT-7F at local intersections, as part of an overall 5-day short course, December 1998.

6. "Traffic Signal Operation in Coordinated Systems," Georgia Tech. Responsible for nine contact hours covering evaluation and optimization of coordinated systems of intersections using TRANSYT-7F, as part of an overall 5-day short course, March 1998.
7. “Traffic Control at Local Intersections,” Georgia Tech. Responsible for six contact hours covering HCM and TRANSYT-7F at local intersections, as part of an overall 5-day short course, December 1997.
8. "Traffic Signal Operation in Coordinated Systems," Georgia Tech. Responsible for nine contact hours covering evaluation and optimization of coordinated systems of intersections using TRANSYT-7F, as part of an overall 5-day short course, June 1997.
9. "Traffic Control at Local Intersections," Georgia Tech. Responsible for six contact hours covering HCM and TRANSYT-7F at local intersections, as part of an overall 5-day short course, March 1997.
10. "Intelligent Transportation Systems: Connecting the Americas," Responsible for a two-hour unit as part of the Intensive Course of Urban Transportation, Universidad Metropolitana, Caracas, Venezuela, September 1996.
11. "Coordinated System Control," South Carolina Department of Transportation. Shared responsibility for planning, coordinating, and instructing a specialized short course developed specifically for and at the request of SCDOT with Dr. P. Parsonson (GT-CEE), June 1996.
12. "Traffic Signal Operation in Coordinated Systems," Georgia Tech. Responsible for nine contact hours covering evaluation and optimization of coordinated systems of intersections using TRANSYT-7F, as part of an overall 5-day short course, March 1996.
13. "Traffic Control at Local Intersections," Georgia Tech. Responsible for six contact hours covering the Highway Capacity Manual and application of the TRANSYT-7F simulation model at local intersections, as part of an overall 5-day short course, December 1995.
14. Board of Regents Faculty Development Workshop. Responsible for 3 contact hours introducing HTML and web page creation as part of an overall two-week workshop sponsored by the Board of Regents. This workshop is designed to introduce faculty members to various educational technologies and develop strategies for implementing these technologies into the classroom to enhance teaching and learning, Summer 1995.
15. "Local Intersection Control," South Carolina Department of Transportation. Shared responsibility for planning, coordinating, and instructing a specialized short course developed specifically for and at the request of SCDOT with Dr. P. Parsonson (GT-CEE), July 1995.
16. "Advanced Applications of TRANSYT-7F," Washington Department of Transportation. Responsible for planning, coordinating, and instructing two 3-day specialized short courses developed specifically for and at the request of Washington DOT, March 1995.
17. "Traffic Signal Operation in Coordinated Systems," Georgia Tech. Responsible for six contact hours covering evaluation and optimization of coordinated systems of intersections using TRANSYT-7F, as part of an overall 5-day short course, March 1995.
18. "Traffic Control at Local Intersections," Georgia Tech. Responsible for six contact hours covering HCM and TRANSYT-7F at local intersections, as part of an overall 5-day short course, December 1994.

19. "Microcomputers in Transportation," Georgia Tech, Traffic Engineering Short Course. Responsible for a four-hour lecture titled above, as part of an overall 5-day short course on Traffic Engineering Practices, October 1994.
20. "Commercial Vehicle Operations," Georgia Tech. Presented 1-hour Introduction to Intelligent Transportation Systems, August 1994.
21. "Advanced Traffic Management Systems," Georgia Tech. Presented 1-hour Introduction to Intelligent Vehicle Highway Systems, June 1994.
22. "Traffic Engineering," University of Puerto Rico, Mayaguez, P.R. 3-day short course held in San Juan, Puerto Rico. Responsible for preparing and presenting 1/2 portion of course in conjunction with Dr. P. Parsonson, June 1994.
23. "Microcomputers in Transportation," ITE Academy, Georgia Tech. Responsible for the four-hour lecture titled above, as part of an overall 5-day short course on Traffic Engineering Practices, March 1994.
24. "Microcomputers in Transportation," Institute of Transportation Engineers Academy, Georgia Tech. Responsible for the four-hour lecture titled above, as part of an overall 5-day short course on Traffic Engineering Practices, September 1993.

VI. SERVICE

A. PROFESSIONAL CONTRIBUTIONS

1. Society Offices, Activities, and Memberships

1. Program Chair, ASEE Engineering Economy Division, 2022-2023.
2. Secretary, ASEE Engineering Economy Division, 2021-22.
3. Faculty representative, Federal Demonstration Partnership, (See description below) 2018-present (VCU).
4. Secretary/Treasurer, Engineering Research Council of ASEE, 2015-2021. The Engineering Research Council (ERC) is one of four major councils of the American Society of Engineering Education (ASEE) and is comprised of over 350 representatives of the ASEE member engineering colleges and industry partners from the US and Canada. The ASEE ERC hosts an annual workshop regularly attended by over 100 associate deans of engineering, focused on capacity building, research administration and research funding for associate deans of engineering.
5. Member, ASEE Finance Committee, 2018-present. The ASEE Finance Committee is a standing committee of the Executive Committee of ASEE. The Finance Committee meets regularly to review the ASEE finances. The Finance Committee reviews budgets and makes decisions on financial matters consistent with Board directives.
6. Member, ASEE Projects Board, 2016-2018. The ASEE Projects Board provides guidance and oversight of the extramural projects and programs of ASEE.
7. Faculty representative, Federal Demonstration Partnership, 2008-2016 (Georgia Tech). The Federal Demonstration Partnership (FDP; see http://thefdp.org) is a national cooperative initiative among 9 federal agencies and 120 institutional recipients of federal funds. The FDP meets three times per year with over 400 participants at each meeting. Its purpose is to reduce the administrative burdens associated with research grants and contracts.

8. Board of Directors, Engineering Research Council of ASEE, 2014-2015. This position is elected from the membership of over 350 engineering schools and colleges in the US and Canada. The ERC Board of Directors meets three times per year (plus monthly conference calls) to coordinate membership activities, plan its annual ERC workshop, and develop capacity building sessions for the ASEE Annual Meeting.
9. Panel member, NCHRP Project 3-92, *Production of the Year 2010 Highway Capacity Manual*, National Research Council, 2007-2010. The HCM is a publication of the Transportation Research Board of the National Academies of Science in the United States. It contains concepts, guidelines, and computational procedures for computing the capacity and quality of service of various highway facilities, including freeways, highways, arterial roads, roundabouts, signalized and unsignalized intersections, rural highways, and the effects of mass transit, pedestrians, and bicycles on the performance of these systems. There have been five editions with improved and updated procedures from 1950 to 2010. The HCM is a worldwide reference for transportation and traffic engineering scholars and practitioners, and is used as a model for several country specific capacity manuals. Dr. Leonard was selected to serve a 3-year term on the technical oversight panel, reviewing technical content and overseeing production of the HCM 2010.
10. President, ITS Georgia, 2002-2003 and 2003-2004 (2 terms). ITS Georgia is a state Chapter of ITS America. ITS America is an organization that provides advice and assistance regarding the application of Intelligent Transportation Systems to the US DOT. As President, Dr. Leonard represented 47 public and private member organizations and over 360 individuals within Georgia and managed all aspects of chapter administration including membership cultivation and development, strategic planning, and action plan implementation.
11. Secretary, Highway Capacity and Quality of Service (A3A10) Transportation Research Board, National Academy of Sciences, 2001-2003. The Highway Capacity and Quality of Service Committee is the largest and most active of the many technical committees of the Transportation Research Board and is responsible for the content of the Highway Capacity Manual (HCM). As Secretary, Dr. Leonard oversees the membership, meeting minutes, annual workshop planning, and membership outreach. This term as secretary overlapped with service as a committee member.
12. Committee Member, Highway Capacity and Quality of Service (A3A10) Transportation Research Board, National Academy of Sciences, 1999-2003.
13. Board of Directors, ITS Georgia, 1999-2002.
14. Committee Member, Traffic Flow Theory and Characteristics Committee (A3A11), Transportation Research Board, 1994-1999 (2-terms as committee member).
15. Subcommittee Member, Highway Capacity and Quality of Service Committee (A3A10) Transportation Research Board, National Academy of Sciences, 1995-1998.
16. Secretary and founding member, ITS Georgia, 1997.
17. Committee Chair, Career Guidance Committee, Georgia Section ITE, 1996-1997.
18. Committee Member, Traffic Signal Systems (A3A18), Transportation Research Board, National Academy of Sciences, 1994-1997.
19. Member, Institute of Transportation Engineers.
20. Member, American Society of Civil Engineers.

21. Member, Transportation Research Board.
22. Member, American Society of Engineering Education.
23. Member, Association of Institutional Researchers

2. **Organization and Chairmanship of Technical Sessions and Workshops**

1. Program Chair, ASEE Engineering Economy Division, Baltimore, 2023.
2. Co-convener, Undergraduate education working group, Workshop on Changing the Face of Engineering: The African American Experience, New Orleans, June 2016. The overarching goal of this workshop is to employ a strengths-based pathway approach to devise data-driven action plans to enhance African Americans' participation in engineering education and the profession; gender equity is a cross-cutting theme. The workshop, funded with a grant from the Sloan Foundation invites 65 scholars and professionals from around the US. Dr. Leonard co-lead a panel of 15 participants focusing on undergraduate education.
3. Organizing committee, ASEE ERC Annual Conference, Arlington, VA, 2019. The ASEE ERC annual workshop is sponsored by the Engineering Research Council and its Board of Directors. Engineering deans, associate deans, department chairs and other engineering research leaders are encouraged to attend. The workshop program is generally design to provide an overview of federal R&D budgets and upcoming funding priorities, to equip research leaders with tools and strategies to more effectively lead their research programs and organizations, to promote network and capacity building among the ERC membership. Workshops and panels topics for 2019 included strategies for winning large center proposals, data management and the new federal open access requirements, research metrics and academic analytics, and research laboratory safety. As a program committee member, Dr. Leonard selected topics, invited speakers, developed sessions, and delivered and hosted the workshop.
4. Organizing committee, ASEE ERC Annual Conference, Arlington, VA, 2018.
5. Organizing committee, ASEE ERC Annual Conference, Silver Spring, MD, 2017.
6. Organizing committee, ASEE ERC Annual Conference, Silver Spring, MD, 2016.
7. Organizing committee, ASEE ERC Annual Conference, Silver Spring, MD, 2015.
8. Session Chair, "Legislative Issues", ITS Georgia Annual Meeting, August 2005.
9. Session Chair, "Upcoming advances in ITS", Intelligent Transportation Society (ITS) Georgia Annual Meeting, September 2000.
10. Session Chair, "Real-Time Traffic Management and Control", Institute for Operations Research and the Management Sciences (INFORMS), October 1995.
11. Session Chair, Institute of Transportation Engineers District 5 Annual Meeting, April 1995.
12. Organizing Committee, Fourth International Conference on Application of Advanced Technologies in Transportation Engineering, 1994-1995.

3. **Technical Journal or Conference Referee Activities**

1. Committee Member, Institute of Transportation Engineers District 5 Annual Meeting Technical Committee, 1994-1995.
2. Reviewer, Transportation Research A, B, and C.

3. Reviewer, Traffic Flow Theory and Characteristics Committee, Transportation Research Board.
4. Reviewer, Highway Capacity and Quality of Service Committee, Transportation Research Board.
5. Reviewer, Transportation Science.
6. Reviewer, ASCE Journal of Transportation.

4. **Other Involvement**

1. Traffic Simulation Modeling Workshop, US DOT, August 2000.
2. Deployment Technical Advisory Group, US DOT, April 2000.
3. Research Technical Advisory Group, FHWA ATMS R&D, February 1999.
4. Traffic Software Developers Task Force, ITE, June 1998.
5. Deployment Technical Advisory Group, US DOT, March 1998.
6. Research Technical Advisory Group, FHWA ATMS R&D, April 1997

B. PUBLIC AND COMMUNITY SERVICE

1. Greater Richmond Technology Council, Board of Directors, 2020-Present
2. Greater Richmond Technology council, Finance Committee, 2022-Present
3. Community Transportation Advisory Committee, Richmond Regional MPO, PlanRVA, 2018-Present.
4. PlanRVA Phase II Transit Vision advisory committee, 2019.
5. PlanRVA Long Range Transportation Plan advisory committee, 2019-2020.
6. Webmaster, Kedron Hills Homeowners Association, 1999 to 2014.
7. SR54 Development Task Force, City of Peachtree City, 2002-2003.
8. Livable Cities Initiative Task Force, City of Peachtree City, 2001.
9. Webmaster, Peachtree City First Presbyterian Preschool, 2001.
10. Career Day Speaker, Fayette County High School, June 1998.
11. Speech Judge, Georgia Academic Decathlon - State Finals, Duluth High School, March 1994.

C. UNIVERSITY CONTRIBUTIONS

1. **University Committee Service**

1. Human Resources Advisory Committee, VCU, 2018-2022.
2. Administration Advisory Committee, VCU, 2019-2022.
3. ADVANCE/IT Advisory Committee, VCU, 2018-Present.
4. Parking and Transportation Advisory Committee, VCU, 2018-Present.
5. University Council, VCU, 2018-2019.
6. Classroom and Academic Scheduling Task Force, Georgia Tech, 2015-2016.

7. Strategic Technology Investment Committee (STIC), Georgia Tech, 2012-present.
8. Student Information Systems Governance Board – Institute-wide faculty representative, Georgia Tech, 2007-present.
9. Information Technology for Research Support Governance Board – College representative for this Institute-wide group, Georgia Tech, 2014-present.
10. Women's Resource Council advisory board, Georgia Tech, 2007-2010.
11. Buzzport Steering Committee – Institute-wide, Georgia Tech, 2001-2006.
12. Reviewer, Teaching and Learning Grant Proposals, Board of Regents, 1998.

2. **College Committee Service**

1. Chair, COE1371 review task force, 2016. Dr. Leonard convened a group of engineering and computing faculty to review current content and delivery of the common undergraduate computing course taken by all engineering majors.
2. Information Technology Council – College of Engineering, 2000-2006.
3. Search Committee for Director of CEE, College of Engineering, 1994-95.

3. **School Committee Service**

1. Computing Committee, School of Civil and Environmental Engineering, 1997-1998.
2. Ad Hoc Committee on the WWW, School of Civil and Environmental Engineering, 1997.
3. Computing Committee, School of Civil and Environmental Engineering, 1996-1997.
4. Computing Committee, School of Civil and Environmental Engineering, 1995-96.
5. Committee Member, Research Faculty Promotion, Institute-wide, Georgia Tech, 1996.
6. Committee Member, Research Faculty Promotion, College of Engineering, Georgia Tech, 1995.
7. Chair, New Faculty Search Committee, Transportation Affinity Group, School of Civil and Environmental Engineering, 1994-1995.
8. Computing Committee, School of Civil and Environmental Engineering, 1994-95.
9. Laboratory Staffing Review Committee, School of Civil Engineering, 1993-94.

D. OTHER UNIVERSITY SERVICE CONTRIBUTIONS

1. **Student organization service**

1. Chief Faculty Advisor, Tau Beta Pi, 2011-present. Tau Beta Pi is the only engineering honor society representing the entire engineering profession. It is the nation's second-oldest honor society, founded at Lehigh University in 1885 "to mark in a fitting manner those who have conferred honor upon their Alma Mater by distinguished scholarship and exemplary character as students in engineering, or by their attainments as alumni in the field of engineering, and to foster a spirit of liberal culture in engineering colleges". The Georgia Alpha Chapter at Georgia Tech was founded in 1925 and its current membership numbers over 100 juniors and seniors from across the College of Engineering. As Chief Advisor, Dr. Leonard coordinates the activities of the other advisors, provides support to the President and other student leaders, serves as an example and mentor, and fosters development of leadership skills in the student members.

2. Chapter Advisor, ITS-America Student Chapter, Georgia Tech, 1993-2001.

2. **Other Noteworthy Activities**

1. Georgia Information Intensive Transit, March 2, 2001. Organized and hosted a ½ day workshop to bring together researchers, vendors and investors to discuss how advanced communications and computing technologies can create a seamless, regional transportation system in Atlanta.
2. Georgia ITS Strategic Deployment Plan Statewide Kickoff, March 20, 1997. Organized, and hosted a statewide meeting of transportation professionals, including James Constantino, CEO of ITS America to present Georgia's ITS Strategic Deployment Plan.
3. Georgia ITS Strategic Deployment Plan Coalition Meeting, January 18, 1996. Organized, and hosted a statewide meeting of transportation professionals, including the Commissioner of GDOT, to plan the future of ITS deployment across the State.
4. Class of 1969 Teaching Fellow. Dr. Leonard participated in a two-quarter program sponsored by the graduating class of 1969. This program is designed to enhance teaching skills, Fall 1995.
5. Faculty Development Workshop, August 21-September 1, 1995. Selected (by competition) to represent Georgia Tech at a Regents-sponsored University System of Georgia workshop focusing on application of instructional technologies in the classroom.
6. Vice Presidents Workshop on Achieving 3X Fuel Efficiency, White House Conference Center, Washington D.C., January 13, 1994. Invited participant of a technical workshop sponsored by Vice President Al Gore and focusing on achieving 3-times the current fuel efficiency of a typical family station wagon, while keeping cost and performance similar to existing vehicles. (Included reception at the VP's home.)