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ACADEMIC TRAINING

Ph.D., Civil Engineering, Vanderbilt University, May, 1994. (UTC VISTA Fellow)
M.S., Civil Engineering, Vanderbilt University, December, 1991. (UTC VISTA Fellow)
Graduate Studies in Civil Engineering, University of Texas, 1984
B.S., Civil Engineering, Colorado State University, May, 1982
A.A.S., Architectural Technology, Del Mar College, May, 1977. (Cum Laude)

ACADEMIC AWARDS

Outstanding Advisor Service Award, 1998, University of Massachusetts
Nominated Campus-wide Distinguished Teaching Award, 1997, University of Massachusetts
Lilly Teaching Fellow, 1996-1997, University of Massachusetts
US DOT Region II Outstanding Student of 1992 for the Southeastern Transportation Center
IBM Distinguished Student Fellowships, 1989-1993
Tau Beta Pi, Member

PROFESSIONAL EMPLOYMENT

Virginia Polytechnic Institute and State University, Associate Professor, 2004 to present
Associate Director of the Center for Geospatial Information Technology, 2004 to present
Faculty Affiliate, Urban Affairs and Planning, 2005 to present
University of Massachusetts at Amherst, Associate Professor and Area Coordinator: 2001 to 2004
Associate Director of the University of Massachusetts Transportation Center 2001 to 2004
Director of MassSAFE 2002 to 2004
Faculty Affiliate, 2004 to 2005
University of Massachusetts at Amherst, Assistant Professor: 1995 to 2001
Vanderbilt University, Research Assistant Professor: 1994 to 1995
Vanderbilt University, Research Assistant: 1990 to 1994
Consulting: 1990 to present
Momentum Engineering, Inc., Partner: 1990 to 1993
The Scientex Corporation, Senior Research Engineer: 1988 to 1990
Southwest Research Institute, Research Engineer: 1982 to 1988

PROFESSIONAL ACTIVITIES

Registered Professional Engineer (certificate number 23394), Tennessee, current
National Academy of Science (NAS) and Transportation Research Board (TRB)
Committee on Multimodal Transportation Requirements for Spatial Information Infrastructure, National Policy Study,
(2001 to 2004)
Transportation Research Board (TRB)
Committee on Spatial Data and Information Science, A5015, **Co-Chair**, (1999 to 2005), member (2005 to present)
Committee on Freight Transportation Data, A1B09, Member, (1996 to 2006)
Committee on National Transportation Data Requirements & Programs, A5016, Member, (1999 to present),
Secretary, (2004 to present)
Group A5000, Member, (1999 to 2005)
NCHRP 20-5, Synthesis Topic 32-02 "Strategies for Managing Increasing Truck Traffic", Synthesis Panel Member,
(2000-2003)

NCHRP 8-43, "Methods for Forecasting Statewide Freight Movements and Related Performance Measures", Project Panel Member, (2001-2005)

NCHRP 20-5 "Crash Test Performance of Permanent and Temporary Crash Cushions", Synthesis Panel Member, (1994-1995)

NCHRP 22-8 "Evaluation of Performance Level Selection Criteria for Bridge Railings", Project Panel Member, (1992-1994)

American Society of Civil Engineers (ASCE)
Associate Member, (1982 to present)
Journal of Transportation Engineering, paper review, (1997 to present)

University Consortium of Geographic Information Science (UCGIS) Virginia Tech Representative, (2006 to present)

Metropolitan Washington Council of Governments (MWCOC) GIS Committee, (2005 to present)

Washington Metropolitan Area Transit Authority (WMATA) GIS Working Group, (2005 to present)

Homeland Infrastructure Foundation Level Database Working Group (HIFLD), (2005 to present)

USGS Federal Geographic Data Committee (FGDC), Coordination Committee Representative for UCGIS, (2005-present)

Boston Society of Civil Engineers (BSCE), Editorial Board Member, (1997 to 2001).

National Science Foundation (NSF)
Division of Undergraduate Education, Proposal Review Panels, 1998 and 1999
Graduate Research Fellowship Program, Review Panel, 2001

Tau Beta Pi (TBP), Student Chapter Advisor (2000 to 2004), member (1992 to present)

PROFESSIONAL TRAINING

Real Estate Acquisition Under the Uniform Act: An Overview, National Highway Institute (NHI), [0.6 CEU] January 2005

The Recovery of Community in Higher Education: Focus on Teaching and Learning by Parker Palmer, University of Massachusetts, September 1999

Intelligent Transportation Systems Education, Transportation Research Board, January 1999

Student Learning at the University of Massachusetts by Julius Lester, University of Massachusetts, 1996-1997

Teaching Well with Technology, University of Massachusetts, Spring 1996

Teaching Large Classes Well, University of Massachusetts, Fall 1995

MGE Foundations, Intergraph Corporation, January 1994

Introduction to Oracle, Intergraph Corporation, November 1993

Introduction to Database Systems - RIS, DB101/RIS, Intergraph Corporation, October 1993

Hazardous Materials Distribution Risk Management, Abkowitz and Associates, Inc., May 1992

An Introduction to GIS for Transportation, Transportation Research Board Pre-Conference Workshop, January, 1991

Coaching and Counseling Skills, Padgett Thompson, November, 1989

Image and Communication Skills, The Business Women's Training Institute, August, 1986

How to Write Better Technical Reports, Proposals and Papers, Southwest Research Institute, August, 1985

Engineering Statistics, Southwest Research Institute, January, 1985

Project Management, Southwest Research Institute, 1984

Steel Design - Current Practice, American Institute of Steel Design, November, 1984

PROFESSIONAL EXPERIENCE

Geospatial analysis including design and implementation of geographic information systems, spatial analysis, and intelligent mapping. Research includes:

- Develop logical model for a geospatially-enabled enterprise information management system for right-of-way activities in state transportation agencies
- Develop transportation component of emergency operations situational awareness "dashboard" tool
- Evaluate geospatial technologies in the Right of Way process in state transportation agencies
- Provide geospatial expertise to critical infrastructure protection plan for the National Capital Region.
- Develop digital historical atlas for Alexandria Archaeology
- Development of a procedure for using remotely sensed imagery to measure change of time for a large transportation infrastructure project.
- Development of a procedure to extract geometric information from highway video-logs for use in system-

wide capacity analysis.

- Determination of state of the practice in New England for highway video-logging and data extraction.
- Development of transit-based land use change analysis techniques using remotely sensed imagery.
- Development of an accident analysis system to evaluate enforcement strategies to reduce vehicle crashes.
- Coordination of the geographic information systems framework development for national transportation policy and planning tasks including designation of the National Transportation System.
- Coordination and compilation of geographic information systems databases for a national transportation atlas.
- Design and implementation of a spatial emergency management planning environment for hazardous materials incidents.
- Evaluation and definition of emergency response capabilities for hazardous materials.
- Definition of risk screening and emergency response coverage for hazardous materials incidents.
- Establishment and evaluation of safety factors that affect the selection of mode and route for transporting nuclear spent fuel and high level nuclear material.
- Design and implementation of a geographic information system for customer service in urban public transportation for Davidson County.

Freight planning in transportation. Research includes:

- Review FAF² developmental documents
- Evaluation of container movements by truck out of the Port of Boston using TSIS and evaluation of performance measurements for truck movement.
- Development of an enterprise-wide simulation and analytical modeling procedure for comprehensive freight movements.
- Development of an intermodal rail/highway terminal model for traffic assignment.
- Development of an intermodal freight traffic assignment methodology.
- Evaluation of container movements through the Port of New York/New Jersey versus the Port of Boston.
- Development of a relationship between commodity weight and number of vehicles for rail and truck.
- Development of freight transportation planning methodology for New England metropolitan planning agencies.
- Development of regional freight traffic assignment techniques using national databases.
- Development of an intermodal/intramodal freight terminal data structure for use in geographic information systems.

Highway safety including roadside safety feature design and development, cost/benefit applications for highway safety, crash data analysis, static, dynamic, full-scale and computer simulation testing of roadside safety features. Research includes:

- Managing MassSAFE, the research and technical support center for the Massachusetts Governor's Highway Safety Bureau. Specific tasks included:
 - Development, implementation, and maintenance of statewide crash data warehouse
 - Traffic safety technical assistance center
 - Commercial vehicle data management system
 - Crash Outcome Data Evaluation System (CODES)
 - Rational speed limit demonstration project
 - Occupant protection technical assistance
 - Performance and evaluation of statewide and WAVE safety belt surveys
 - Safety belt use behavior study
 - Alcohol data clearinghouse
 - Novice driver training and evaluation
- Integration and evaluation of commercial vehicle inspection and crash data.
- Development of a crash evaluation expert system for determining driver behavior that causes crashes.
- Development of a procedure for evaluating in-service performance of traffic barriers.
- Compilation of traffic barrier systems and components from 50 States for updating and expanding hardware guide.
- Dynamic full-scale testing and evaluation of sign supports, roadside traffic barriers and crash cushions.
- Development and use of computer programs to predict vehicle and roadside safety hardware behavior.
- Development of cost/benefit analysis for roadside safety hardware.

- Development of dynamic and full-scale testing specifications.
- Development of database for information from crash test films.
- Development of data collection specifications.
- Structural review and evaluation of existing State standard hardware and installation specifications.
- Clinical and statistical evaluation of accident database.

Experience in undergraduate and graduate teaching includes:

- *GIS Applications in CEE.* Graduate introduction to geospatial information technologies for civil and environmental engineering.
- *Computer Applications in Planning.* Graduate introduction to geospatial information technologies for urban planning.
- *Advanced GIS Applications in CEE.* Graduate course in advance geospatial analysis techniques to solve Civil and Environmental Engineering problems.
- *Transportation Engineering.* Undergraduate introduction to transportation engineering.
- *Geospatial Analysis in Transportation.* Use of geographic information systems to solve transportation problems.
- *Advanced Spatial Analysis in Transportation.* Use of geographic information systems for transportation planning.
- *Transportation Systems Analysis.* Instruction in transportation planning and systems analysis.
- *Freight Operations and Planning.* Overview of operations and development of planning techniques for freight
- *Travel Demand Forecasting.* Advanced transportation planning and travel forecasting.
- *Traffic Engineering.* Advanced instruction in traffic flow theory and traffic engineering practice.
- *Surveying.* Undergraduate introduction to principles and practices of surveying with civil engineering applications.
- *Introduction to Engineering Seminar.* Freshman introduction to civil engineering.
- *Statics.* Undergraduate introduction to force systems, equilibrium of forces.

Work experience includes managing projects, performing research, writing reports, presenting results, writing proposals and negotiating contracts, interacting with project sponsors, and arranging, holding and monitoring project meetings. Administrative responsibilities include:

- Managing a \$2.0 million research programs.
- Managing 4 to 10 professional and technical personnel for projects from \$500 to \$100,000.
- Monitoring and reporting project schedule, progress, and costs.
- Maintaining contact with sponsors to discuss progress, potential problems, problem resolution.
- Participating in related professional meetings.

Sponsors include: National Science Foundation, Federal Highway Administration and Battelle, Arlington Office of Emergency Management, the Massachusetts Governors Highway Safety Bureau, Massachusetts Highway Department, New England Transportation Consortium, Massachusetts State Police, New England University Transportation Center, National Cooperative Highway Research Program, University of Massachusetts, Franklin County Commission, Massachusetts Port Authority, US Bureau of Transportation Statistics and Oak Ridge National Laboratory, Tennessee Emergency Management Agency, U.S. Department of State, Pennsylvania Department of Transportation, Michigan Department of Transportation, Arizona Department of Transportation, Nashville Metropolitan Transit Authority, Alexandria Archaeology Museum, and several commercial companies. Contact is maintained with several other States, companies and organizations interested in work performed.

FUNDED RESEARCH (from 1996 in reverse chronological order by start date)

Developing a Logical Model for a Geospatial Right-of-Way Land Management System, National Cooperative Highway Research Program, Transportation Research Board, **Principal Investigator**, 2/07-6/09, \$350,000.

Arlington Emergency Management Dashboard Prototype, Arlington Offices of Emergency Management, **Investigator**, 11/06-5/07, \$12,000. Initiated by Nick Stone.

Alexandria Archaeology GIS Mapping Project, Old Town Civil War Layers, Alexandria Archaeology, **Principal Investigator**, 6/06-6/07, \$9,700.

Freight Analysis Framework II Technical Support, Federal Highway Administration through Battelle, **Principal Investigator**, 6/06-10/07, \$10,000.

Integrating Geo-Spatial Technologies into the Right-of-Way Data-Management Process, National Cooperative Highway Research Program, Transportation Research Board, **Principal Investigator**, 5/05-5/06, \$100,000.

Alexandria Archaeology G I S Mapping Project: Overlay Maps For Research And Historic Preservation, Alexandria Archeology, **Principal Investigator**, 5/05-6/07, \$19,999.

Assistance On Oak Ridge National Laboratory (ORNL) Freight Analysis Framework (FAF) Document Reviews, Oak Ridge National Laboratory, **Principal Investigator**, 4/05-1/06, \$5,000.

National Capital Region Critical Infrastructure Protection Plan, George Mason University for the National Capitol Region, **Investigator**, 9/04-3/05, \$29,000.

MassSAFE, Technical and Research Support, Massachusetts Governors Highway Safety Bureau, **Director and Principal Investigator**, 10/02-9/05, \$850,000 per year

Freight Flow Assignment Through Intermodal Terminals, New England University Transportation Center at Massachusetts Institute of Technology for the U.S. Department of Transportation, **Principal Investigator**, 9/02-9/03, \$70,000

University Transportation Center Fellowships, Research and Special Projects Administration USDOT through MIT, **Principal Investigator**, 9/02-9/03, \$120,000

Long-Term Monitoring of Changes in Transportation and Land Uses Associated with the Central Artery/Third Harbor Tunnel in Boston, MA@, Research and Special Projects Administration, USDOT, **Principal Investigator** (with co-principal investigator Larry Harmen at Bridgewater State College) 10/01-3/03, \$200,000

Massachusetts Port Authority Fellowship, Massachusetts Port Authority, **Principal Investigator**, on-going, \$10,000/year, Initiated by Paul Shuldiner and John Collura

Traffic Simulation of Truck/Freight Activity, University Transportation Center, Research and Special Projects Administration USDOT through MIT, **Principal Investigator**, 9/01-9/03, \$120,000

University Transportation Center Fellowships, Research and Special Projects Administration USDOT through MIT, **Principal Investigator**, 9/01-9/02, \$120,000

MassSAFE, Technical and Research Support, Massachusetts Governors Highway Safety Bureau, **Investigator and Task Manager** (D. Noyce, Principal Investigator), 6/01-9/02, \$1,000,000

Enterprise-wide Simulation and Analytical Modeling of Comprehensive Freight Movements, National Science Foundation, **Principal Investigator** (with co-principal investigators: Anna Nagurny, SOM, and Frank Southworth at Oak Ridge National Laboratory), 9/00-9/02, \$140,000

Use of Commercial Remote Sensing for Transit Applications, Subcontract to Bridgewater State College for The Research and Special Programs Administration (RSPA), US DOT, **Principal Investigator**, 8/00-12/01, \$65,000

Ground-Based Imaging and Data Acquisition Systems for Roadway Inventories in New England: A Synthesis of Practice, New England Transportation Consortium (NETC), **Principal Investigator**, 9/00-9/01, \$44,000

Scenic Byways Designations in Massachusetts, Massachusetts Highway Department, **Principal Investigator**, 1/00-12/00, \$22,000, Initiated by William Highter and the University of Massachusetts Transportation Center

Signage for the Central Artery Tunnel, Massachusetts Highway Department, 10/99-10/01, **Investigator** (D. Fisher, Principal Investigator), \$20,000 of total \$200,000, Initiated by Don Fisher

Commercial Vehicle Accident Analysis, Massachusetts Department of State Police (MSP), **Principal Investigator**, 10/99-6/00, \$50,000

Data Mining: Extracting Roadway Geometric Data from Videologs, New England University Transportation Center (UTC) at the Massachusetts Institute of Technology (MIT) for the U.S. Department of Transportation, **Principal Investigator**, 9/99-9/00, \$100,000

Signage for Logan 2000, Massachusetts Port Authority, 10/98-10/00, **Investigator** (D. Fisher, Principal Investigator), \$20,000 of total \$200,000, Initiated by Don Fisher

Freight Transportation Planning: Converting Commodity Volumes to Vehicles, New England University Transportation Center at the Massachusetts Institute of Technology for the U.S. Department of Transportation, **Principal Investigator**, 9/98-9/99, \$120,000

Integrating ITS Research Project Results into Engineering Curricula, National Science Foundation, 1/98-1/00, **Investigator** (P. Shuldiner and D. Fisher, Principal Investigators), \$3000 of total \$144,200, Initiated by John Collura and Dave Kauffman

Accident Analysis System, Massachusetts Department of State Police, **Principal Investigator**, (John Collura and Paul Shuldiner, Investigators), 12/97-12/98, \$71,300, Initiated by John Collura

Traffic Evaluation for the 2008 Boston Olympics, Raytheon Industries, 12/97-1/98, **Investigator**, (W. Highter, Principal Investigator), \$3000 of \$10,000, Initiated by William Highter and the University of Massachusetts Transportation Center

Regional Multimodal Freight Flow Assignment Using Geographic Information Systems, New England University Transportation Center (UTC) at the Massachusetts Institute of Technology (MIT) for the U.S. Department of Transportation, **Principal Investigator**, 9/97-9/98, \$120,000

An Undergraduate Engineering GIS/CAD Spatial Analysis Laboratory, National Science Foundation (NSF), **Principal Investigator**, 6/97-5/99, \$47,600

Performance Analysis of the Fixed Route Transit Services Provided by the Franklin Regional Transit Authority (FRTA) and the Greenfield-Montague Transportation Area (GMTA), Franklin County Commission, **Principal Investigator**, 4/97-10/97, \$8,600

Pathways from Poverty Transit Analysis, Massachusetts Rural Development Council, **Principal Investigator**, 1/97-5/97, \$2,000, Funding was for a research assistant

Comparative Analysis of the Massachusetts Turnpike, Massachusetts Turnpike Authority, **Investigator**, (J. Collura, Principal Investigator), 12/96-1/97, \$3000 of larger amount, Initiated by William Hightler and the University of Massachusetts Transportation Center

In-Service Performance of Traffic Barriers, Subcontract to University of Iowa for the National Cooperative Highway Research Program (NCHRP), **Principal Investigator**, 9/96-9/98, \$95,600

Development of a Geographic Information Systems Freight Terminal Database, University of Massachusetts Faculty Research Grant (FRG), **Principal Investigator**, 5/96-12/97, \$5,000

Technical and Research Support for the National Transportation Atlas Databases, Lockheed Martin Energy Systems and the U.S. DOT Bureau of Transportation Statistics (BTS), **Principal Investigator**, 2/96-11/96, \$25,000

Other Funding

TransCAD: Geographic Information Systems Software Donation, Caliper Corporation, 3/05, \$29,000, Donation of software for research and classroom instruction, Virginia Tech

TransCAD: Geographic Information Systems Software Donation, Caliper Corporation, 6/00, \$12,000. Donation of software for research and classroom instruction, University of Massachusetts

PUBLICATIONS AND PRESENTATIONS (underlined names are students)

Refereed Chapters in Books

- K. Hancock, "Chapter 37, Freight Transportation Planning", Handbook of Transportation Engineering edited by Myer Kutz. The McGraw-Hill Companies, Inc., pp. 37.1-37.22, 2004.
- K. Hancock, "Chapter 31, Hazardous Goods", Handbook of Logistics and Supply-Chain Management edited by A.M. Brewer, K.J. Button and D.A. Hensher, Pergamon, an Imprinting of Elsevier Science, England, pp. 469-478, 2001.

Editor/Rapporteur

- K. Hancock, Freight Demand Modeling: Tools for Public Sector Decision-Making, Transportation Research Circular-in publication, Transportation Research Board of the National Academies, 2007.
- K. Hancock, Commodity Flow Survey Conference, Transportation Research Circular Number E-C088, Transportation Research Board of the National Academies, 2005.

Refereed Journal Articles

- J. Xu, K. Hancock, and F. Southworth, "Simulation of Regional Freight Movement on the TTMNet: Trade & Transportation Multi-Networks", Traveler Behavior and Values, Transportation Research Record 1854, National Research Council, Washington D.C., pp. 152-161, 2003.
- A. Nagurney, C. Ke, D. Cruz, K. Hancock, and F. Southworth, "Dynamics of supply chains: a multilevel logistical/informational/financial network perspective", EPB, Planning and Design, England, pp. 795-818, vol. 29 (November) 2002.
- K. Hancock and A. Sreekanth, "Freight Transportation Planning: Converting Volume to Rail Cars", Transportation Research Record, National Research Council, Washington D.C., 2001.
- M. Fitzpatrick, Jr., K. Hancock and M. Ray, "Videolog Assessment of the Vehicle Collision Frequency with Concrete Median Barriers on an Urban Highway in Connecticut", Roadside Safety and Other General Design Issues, Transportation Research Record 1690, National Research Council, Washington D.C., pp. 59-63, 1999.
- V. Sanjeevkrishnan and K. Hancock, "Highway Freight Flow Assignment in Massachusetts Using Geographic Information Systems", Progress in Transportation Data 1998, Transportation Research Record 1625, National Research Council, Washington D.C., 1998.
- K. Hancock, M. Abkowitz and M. Lepofsky, "Assessing Hazardous Materials Emergency Response Capability: Methodological Development and Application", Issues in Marine and Intermodal Transportation,

- Transportation Research Record 1383, National Research Council, Washington D.C., 1993.
- M. Abkowitz, K. Hancock and R. Waters, "Perspectives on a Transportation Corridor Risk Analysis", Transportation of Dangerous Goods: Assessing the Risks, edited by F.F. Saccomanno and K. Cassidy, Institute for Risk Research, Ontario, Canada, pp 453-468, April 1992.
- M. Bronstad, K. Hancock, L. Meczowski, and W. Humble, "Crash Test Evaluation of the Vehicle Attenuating Terminal (V-A-T)", Transportation Research Record 1133, National Research Council, Washington D.C., pp 1-6, 1987.

Refereed Conference Proceedings

- K. Hancock, "Geospatially Enabling Information Management for Right-of-Way Activities", TRB Compendium of Papers, 86th Annual Meeting, Washington D.D., 2007.
- Q. Lu, and K. Hancock, "TagCMP: Enabling Efficient GML Communication with Power Conservation in a Wireless Environment", 2nd International Conference on GeoSensor Networks, Boston, MA, 2006.
- Q. Lu, and K. Hancock, "GMLinAir: Enabling Efficient and Power-Conserving Wireless GML Communication and Visualization", 2nd International Conference on GeoSensor Networks, Boston, MA, 2006.
- Q. Lu, and K. Hancock, "Microsimulation of Large Truck Activities at Tight Intersections", TRB Compendium of Papers, 85th Annual Meeting, Washington D.C., 2006.
- K. Hancock (editor and technical writer), Geospatial Information Infrastructure for Transportation Organizations -- Toward a Foundation for Improved Decision Making, TRB Conference Proceedings 31, Transportation Research Board of the National Academies, 2004.
- J. Xu and K. Hancock, "Enterprise-wide Freight Simulation in an Integrated Logistics and Transportation System", accepted for publication, IEEE Transactions on Intelligent Transportation Systems, 2004.
- J. Xu and K. Hancock, "An Optimized Iterative Procedure for Regional Intermodal Freight Assignment", Transportation Research Board 2004 Annual Meeting Proceedings, National Research Council, Washington D.C., 2004.
- J. Xu, K. Hancock, and F. Southworth, "Dynamic Freight Traffic Simulation Providing Real-Time Information", Proceedings of the 2003 Winter Simulation Conference, edited by S. Chick, P. J. Sánchez, D. Ferrin, and D. J. Morrice, eds., 2003.
- M. Abkowitz and K. Hancock, "Development of an Integrated Hazardous Materials Emergency Management Planning System", Selected World Conference on Transportation Research Proceedings, Elsevier Science Ltd, Sydney, Australia, 1995.
- K. Hancock, "Energy Absorption Phenomena Associated with Stopping Vehicles", Securing Installations Against Car-Bomb Attack, edited by Michael Davis, Defense Research Institute, Arlington, VA, 1986.

Peer-Reviewed Articles

- K. Hancock, "Freight Transportation Data in the New Millennium-A Look Forward", Committee A1B09, Transportation in the New Millennium, Transportation Research Board, National Research Council, Washington D.C., pp. 1-7, 2000.

Technical Reports

- K. Hancock, "Integrating Geo-Spatial Technologies into the Right-of-Way Data-Management Process", National Cooperative Highway Research Program (NCHRP) Research Results Digest 310, Transportation Research Board, National Research Council, 2007.
- K. Hancock, "Alexandria Archaeology GIS Mapping Project: Overlay Maps for Research and Historic Preservation", Virginia Polytechnic Institute and State University, June 2006.
- K. Hancock, J. Xu, "Freight Flow Assignment Through Intermodal Terminals", University Transportation Consortium, Massachusetts Institute of Technology, 2004.
- K. Hancock, B. Gautham, "Long-Term Monitoring of Changes in Transportation and Land Uses Associated with the Central Artery/Third Harbor Tunnel in Boston, MA", Research and Special Projects Administration, USDOT, 2003.
- K. Hancock, J. Degray, "Ground-Based Imaging and Data Acquisition Systems for Roadway Inventories in New England: A Synthesis of Practice", New England Transportation Consortium, 2002.
- K. Hancock, M. Wasielewski, "Data Mining: Extracting Roadway Geometric Data from Videologs", University Transportation Consortium, Massachusetts Institute of Technology, 2002.
- K. Hancock, R. Lacey, "Massachusetts Designated Scenic Byways", Massachusetts Highway Department, 2001.
- K. Hancock, G. Goodridge "Commercial Vehicle Accident Analysis", Massachusetts Department of State Police, 2000.
- K. Hancock, "Public Agency Use of Proprietary Geographic Base Files", Bureau of Transportation Statistics,

- United States Department of Transportation, Washington DC, 2000.
- K. Hancock, R. Munipalle, "Regional Freight Flow Assignment Using Geographic Information Systems", University Transportation Consortium, Massachusetts Institute of Technology, 2000.
- K. Hancock, S. Karthikeyan, A. Sreekanth, "Freight Transportation Planning: Converting Commodity Volumes to Vehicles", University Transportation Consortium, Massachusetts Institute of Technology, 2000.
- K. Hancock, R. Buccar, "Accident Analysis System", Massachusetts Department of State Police, 1998.
- K. Hancock and P. W. Shuldiner, "A Transportation Evaluation for the 2008 Olympics", University Transportation Center, University of Massachusetts, February 1997.
- P. Bhutani and K. Hancock, "A Transit Evaluation of the Franklin Regional Transit Authority (FRTA) and the Greenfield-Montague Transportation Area (GMTA)", Franklin County Commission, Greenfield, Massachusetts, October 1997.
- K. Hancock, "Spatial Data and Geographic Information Systems Within the Bureau of Transportation Statistics (BTS)", paper prepared for the Bureau of Transportation Statistics, Washington, D.C., October 1994.
- K. Hancock, Design and Implementation of an Integrated Emergency Management Planning Environment, Doctoral Thesis, Vanderbilt University, May 1994.
- K. Hancock and M. Abkowitz, "The Use of Geographic Information Systems for Customer Service in Urban Public Transportation", paper submitted for presentation at the 1992 Transportation Research Board Annual meeting and for publication in Transportation Research Record, Vanderbilt University, December 1991.
- K. Hancock, Use of Geographic Information Systems for Customer Service in Urban Public Transportation, Masters Thesis, Vanderbilt University, December 1991.
- K. Hancock, "A Probabilistic Approach to Defining Encroachments", Federal Highway Administration Final Task Report, Vanderbilt University, December 1991.
- K. Hancock, M. Bronstad, and G. McHale, "Analytical Evaluation of Concrete Bridge Parapet and Structure Mounted Guiderail", Pennsylvania Department of Transportation Final Report, August 1989.
- K. Hancock, "Improvement of the GUARD/NARD Computer Programs", Federal Highway Administration Final Report, July 1989.
- K. Hancock, E. Su, M. Valles and S. Basu, "PORSHE - Preprocessor of Roadside Safety Hardware Evaluation", Federal Highway Administration Interim Report, February 1989.
- G. McHale and K. Hancock, "Practical Evaluation and Uses of the Numerical Analysis of Roadside Design (NARD) Computer Simulation Program," Paper Submitted for Presentation at the 68th Annual Meeting of the Transportation Research Board, January 1989.
- K. Hancock, and J. Mayer, Jr., "An Investigation of the Suitability of Great Lake States Timber Species for Guardrail Posts," Michigan DOT Final Report, May 1988.
- K. Hancock, "Crash Test Evaluation of the Vehicle Combination-Attenuating-Terminal (C-A-T)," Syro Steel Co. Final Report, November 1987.
- M. Bronstad, L. Calcote, K. Hancock, J. Mayer, Jr., "Effects of Changes in Effective Rail Height on Barrier Performance," Federal Highway Administration Final Report, April 1987.
- M. Bronstad, J. Michie, L. Calcote, K. Hancock, and J. Mayer, Jr., "Bridge Rail Designs and Performance Standards," Federal Highway Administration Final Report, February 1987.
- K. Hancock, "Crash Test Evaluation of the Vehicle-Attenuating-Terminal (V-A-T)", Syro Steel Co. Final Report, February 1987.
- K. Hancock, M. Bronstad, and C. McDevitt, "Crash Test Evaluation of Selected Bridge Rails", Paper Presented at the 66th Annual Meeting of the Transportation Research Board, January 1987.
- K. Hancock, "Energy Absorption Phenomena Associated with Stopping Vehicles", Conference on Securing Installations Against Car-Bomb Attack, May 1986.
- K. Hancock, and J. Michie, "Development of a Vehicular Testing Program", U.S. Department of State Final Report, April 1985.

Peer-Reviewed Presentations

- Q. Lu, and K. Hancock, "TagCMP: Enabling Efficient GML Communication with Power Conservation in a Wireless Environment", 2nd International Conference on GeoSensor Networks, Boston, MA, 2006.
- Q. Lu, and K. Hancock, "GMLinAir: Enabling Efficient and Power-Conserving Wireless GML Communication and Visualization", 2nd International Conference on GeoSensor Networks, Boston, MA, 2006.
- Q. Lu, and K. Hancock, "Microsimulation of Large Truck Activities at Tight Intersections", 85th Transportation Research Board Annual Meeting, Washington D.C., 2006.
- L. Garay, D. Fisher, K. Hancock, "Effects of Driving Experience and Lighting Condition on Driving Performance", Human Factors and Ergonomics Society 48th Annual Meeting, New Orleans, La, 2004.
- K. Hancock and A. Sreekanth, "Freight Transportation Planning: Converting Volume to Rail Cars",

- Transportation Research Board 80th Annual Meeting, Washington DC, 2001.
- K. Hancock and M Ray, "Assessment of Collisions with Longitudinal Barriers", Transportation Research Board 79th Annual Meeting, Washington DC, 2000.
- M. Fitzpatrick, Jr., K. Hancock, M. Ray, "Videolog Assessment of the Vehicle Collision Frequency with Concrete Median Barriers on an Urban Highway in Connecticut", Transportation Research Board 78th Annual Meeting, Washington DC, 1999.
- V. Sanjeevkrishnan and K. Hancock, "Highway Freight Flow Assignment in Massachusetts Using Geographic Information Systems", Transportation Research Board 77th Annual Meeting, Washington DC, 1998.
- V. Sanjeevkrishnan and K. Hancock, "Highway Freight Flow Assignment in Massachusetts Using Geographic Information Systems", Joint Summer Meeting of the Transportation Research Board Planning, Economic, Finance, Management, and Data Committees, Portland, Maine, 1997.
- K. Hancock, "National Transportation Atlas Databases", Annual National URISA Conference, San Antonio, Texas, 1995.
- K. Hancock, M. Abkowitz and M. Lepofsky, "Assessing Hazardous Materials Emergency Response Capability: Methodological Development and Application", Transportation Research Board 72nd Annual Meeting, Washington DC, 1993.
- K. Hancock and M. Abkowitz, "The Use of Geographic Information Systems for Customer Service in Urban Public Transportation", Transportation Research Board 71st Annual Meeting, Washington DC, 1992.

Invited Presentations

- K. Hancock, "Uses of the Commodity Flow Survey", Transportation Research Board 85th Annual Meeting, Washington D.C., 2006.
- K. Hancock, "Boston's Central Artery", George Mason University, February 2005.
- K. Hancock, "Directions from Conference Proceedings 31: Geospatial Information Infrastructure for Transportation Organizations", Transportation Research Board 84th Annual Meeting, Washington DC, 2005.
- K. Hancock, "Change Detection for Major Transportation Projects—Boston's Central Artery", Applications of Remote Sensing Technologies for Transportation Data Collection Workshop, Florida DOT, December, 2004.
- K. Hancock, "Freight Planning and Microsimulation", University of Virginia, November 2004.
- K. Hancock, "Geospatial Research and Freight Microsimulation", Institute for Water Resources, USACE, September 2004.
- K. Hancock, "MassSAFE Traffic Safety Data Warehouse", Governors Highway Safety Association Annual Meeting, New Orleans, LA, August 2003.
- K. Hancock, "Forecasting Goods Movement For Transportation Planning", Transportation Engineering Symposium, University of Connecticut, February, 1999.
- K. Hancock, "GIS in Public Transportation", Innovations in Public Transportation Services Workshop, University of Massachusetts Amherst, March, 1996. This was a workshop for public transportation managers across New England hosted by the University Transportation Consortium.
- K. Hancock, "Energy Absorption Phenomena Associated with Stopping Vehicles", Securing Installations Against Car-Bomb Attack, Defense Research Institute, Washington DC, May 1986.

STUDENT ADVISING

Committee Chair

Ph.D. degrees

Virginia Technical Institute and State University

Quifeng Lu, (expected 2008)

University of Massachusetts Amherst

Jinghua Xu, *Microsimulation of Freight Movements*, 2004

Chris Amhadjian, (expected 2008, UMass)

Masters of Science degrees

Virginia Technical Institute and State University

Neelima Ghant, *Integrating Geospatial Technologies into the Right of Way Process* (2007)

University of Massachusetts Amherst

Arthur Bonney, *Rational Speed Limit Evaluation*, anticipated MSCE

Rebecca Bucar, *A Preliminary Crash Analysis Study Directed Towards Improving Enforcement Strategies in Massachusetts*, MSCE, 1999

Puneet Bhutani, *Small Fixed-Route Transit System Evaluation and Planning Incorporating Geographic*

Information Systems, MSCE, 1998
 Jason DeGray, *State of the Practice for Ground-based Image Analysis in New England*, MSCE, 2000.
 Daniel Dulaski, *Driver's Visions Toward Route Diversion*, MSCE, 1999
 Robert Fijol, *Commercial Vehicle Safety*, MSCE, 2004
 Baliga Gautham, *Transportation and Land Use Changes for the Central Artery Tunnel Using Remotely Sensed Imagery*, MSCE, 2002
 Sowmya Karthikeyan, *Conversion of Weight of Freight to Number of Truckloads*, MSCE, 2000.
 Lisandra Lagrey-Vega, *Night Driving for Younger Drivers*, MSCE, 2004
 Quifeng Lu, *Modification of CorSim to Evaluate Trucks*, MSCE, 2004
 Ravi Mundoli, *Alternative Terminal Signage at Logan International Airport*, MSCE, 2000
 Radhika Muniapalle, *Regional Freight Flow Assignment Using Geographic Information Systems*, MSCE, 1999
 Silpa Munukutla, *Innovative Techniques for Raising Seat Belt Usage*, MSCE, 2005
 Amir Rizavi, M.S., *Multi-modal Freight Assignment using GIS*, MSCE, 2001
 Venkatesh Sanjeevikrishnan, *Freight Flow Assignment using Geographic Information Systems*, MSCE, 1997
 Kesavan Saravanan, *An Integrated System for Roadside Safety Management*, MSCE, 1998
 Ande Sreekanth, *Conversion of Weight of Freight to Number of Rail Cars*, MSCE, 2000
 Katy Schwert, *Truck Simulation for South Boston*, MSCE, 2003
 Mike Wasielewski, *Data Mining from Ground Based Imagery*, MSCE, 2004

Committee Member

<i>Ph.D. Students:</i>	4 students (VT)	Ph.D. Civil and Environmental Engineering
	5 students (UMass)	Ph.D. Civil and Environmental Engineering
	1 student (UMass)	Ph.D. School of Management (1999 Transportation Science Section Dissertation Prize)
	1 student (UMass)	Ph.D. Industrial Engineering
<i>Masters Students:</i>	3 students (VT)	M.S. Civil and Environmental Engineering (Geospatial)
	1 student (VT)	M.S. Civil and Environmental Engineering (Transportation)
	19 students (UMass)	M.S. Civil and Environmental Engineering (Transportation)
	2 students (UMass)	M.S. Civil and Environmental Engineering (Geotechnical)
	1 student (UMass)	M.S. Industrial Engineering
	1 student (UMass)	M.S. Regional Planning

Research Director for Undergraduate Students (UMass)

<i>Honors Colloquium</i>	
Robert Best	Land Use Analysis Around the Central Artery, Spring 2002
George Goodridge	Freight Container Movement: Barge vs Truck, Fall 2000-Spring 2001
Emily Sterzin	Sign Evaluation Using the Driving Simulator, Fall 2000-Spring 2001

Special Topics

Steve Brown	Bozeman Area Transit Planning, Fall 2003
Riccardo Abelard	Evaluation of a Bicycle Path in North Amherst, Fall 1998
Ken Canty	GIS Safety Management System Development, Fall 1997
James Cerone	GIS Analysis of Double Stack Rail, Spring 2000
Richard Dupuis	GIS to Evaluate Transborder Surface Freight Data, Fall 1996
Robert Fijol	Effect on Safety of Graduated Licenses, Spring 2001
Craig Fraser	Bridge Over the Connecticut River, Spring 1999
Nghia Giang	Evaluation of A Bicycle Path in North Amherst, Fall 1998
Gina Goessling	Signage at Logan Airport, Spring 1999
Luis Hernandez	GIS to Evaluate Freight Movement by Rail, Fall 1997
Nicole Klampe	GIS Intermodal Terminal Database Development, Spring 1997
Bryan Parmenter	GIS to Evaluate Transborder Surface Freight Data, Fall 1996
Wendi Parmenter	GIS in Transportation, Honors Thesis, 1998
Jodi Renna	GIS Intermodal Terminal Database Development, Fall 1996
George Tsitsas	Evaluation of a Bicycle Path in North Amherst, Fall 1998

Undergraduate students working on research projects

Amber Conboy	Land Use Change from No-fare Transit, Summer 2000
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George Goodridge Commercial Vehicle Accident Analysis, Spring 2000
David Hurwitz Driving and Blood Alcohol Content for Younger Drivers, Spring 2003
Victoria Lindsay Freight Micro-Simulation, Fall 2001
Mike Wasielewski Accident Analysis Plan for MSP, Spring & Fall 1999

Research Undergraduate Experience

Natalia Andron (UPC, Puerto Rico) Highway Safety Issues, NSF, Summer 2004
Marta Benavente (Madrid, Spain) Rational Speed Limit Evaluation, Visiting Scholar, 2002-2003
Renee Oats (Philadelphia, PA) Seat-Belt Usage of College Students, NSF-SPUR, Summer 2002
Katherine Steele (UPC, Puerto Rico) Sign Evaluation Using Vehicle Simulator, NSF-SPUR, Summer 2001
Albert Whangbo (NCState, NC) Rail Freight Assignment, NSF-REU, Summer 1998