Transportation and Logistics

Program and Application Information

Program Director:	Dr. Denver Tolliver
Assistant to the Director of Educational Programs:	Jody Bohn Baldock
Email:	jody.bohn.baldock@ndsu.edu
Department Location:	Upper Great Plains Transportation Institute
Department Phone:	(701) 231-7938
Department Web Site:	www.ndsu.edu/transportation/tl/
Application Deadline:	March 1 for fall semester, October 1 for spring semester
Degrees Offered:	Ph.D.
Test Requirement:	GRE (GMAT may be substituted)
English Proficiency Requirements:	TOEFL ibT 71; IELTS 6

Program Description

North Dakota State University offers an interdisciplinary program leading to the Ph.D. degree in Transportation and Logistics (TL). The Transportation and Logistics program is a joint effort of the Colleges of Agriculture, Food Systems, and Natural Resources; Business; and Engineering; as well as the Upper Great Plains Transportation Institute. The following departments are participating in the program: Agribusiness and Applied Economics; Civil Engineering; Construction Management and Engineering; Industrial and Manufacturing Engineering; Management and Marketing; Geosciences; and Emergency Management.

The TL doctoral program allows students to develop advanced knowledge and research skills in the rapidly growing fields of transportation and logistics. The Ph.D. program consists of three main components: a core curriculum, an area of concentration, and a dissertation. After completing the interdisciplinary core curriculum, students may enter one of three areas of concentration: 1) Logistics and Supply Chain Systems, 2) Transportation Economics and Regulation, or 3) Transportation Infrastructure and Capacity Planning.

Admission Requirements

The Transportation and Logistics Ph.D. program is open to qualified graduates of universities and colleges of recognized standing. In addition to the Graduate School requirements, the applicant must have adequate preparation in one or more of the disciplines comprising Transportation and Logistics, a stated interest in transportation, and the capability to conduct transportation research.

Students who do not meet all requirements for admission or have deficiencies in prerequisite course work, but show satisfactory potential for graduate study, may be admitted conditionally. The conditional status may be changed to full graduate standing after the first or second semester of study, based on the student's academic performance.

A student wishing to pursue an area of concentration in Transportation Economics and Regulation must have completed intermediate-level microeconomics and taken at least one course in macroeconomics.

In order to pursue an area of concentration in Logistics and Supply Chain Systems, a student must have earned a baccalaureate degree in Agribusiness, Business, Economics, Finance, Industrial Engineering, Management, Marketing, or a related field. All applicants must meet the general program prerequisites of at least one year of calculus, at least one course in statistics and economics, and an expressed interest in transportation. Preference will be given to students with prior transportation course work and relevant research experience.

Financial Assistance

The number of assistantships vary from year to year, depending on grant availability and the number of students in residence. Applicants are considered on the basis of scholarship and potential to undertake advanced study and research.

To be considered for an assistantship, an applicant must complete a Graduate School application, be accepted by the department, and identify the desire for an assistantship or financial need in the statement of purpose.

Graduate tuition is waived for students with qualifying assistantships.

The Ph.D. program requires the completion of a minimum of 90 credits of graduate study beyond the baccalaureate degree with an overall GPA of 3.0 or higher. Each student must develop a plan of study under the guidance of a faculty adviser and a supervisory committee. Twenty-five of the graduate credit hours must consist of core Transportation and Logistics courses or suitable substitutes. A minimum of 30 credit hours must consist of research-based dissertation credits. In addition, a minimum number of credit hours must be taken in the student's area of concentration, including quantitative methods courses related to the concentration. The remaining credits may be comprised of technical electives and additional dissertation credits.

Students must pass the comprehensive/preliminary examination after the majority of the course work has been completed. The comprehensive exam includes written and oral components related to core transportation and quantitative concepts and to the student's area of concentration. The comprehensive exam also includes a dissertation prospectus examination in which the student must present and defend a plan for undertaking and completing a dissertation. After passing of the comprehensive exam and completion of the dissertation, the doctoral candidate must pass a final examination in which the completed dissertation is presented and defended.

Courses Offered

TL 711	Logistics Systems	4
TL 715	Enterprise Resource Planning	3
TL 719	Crisis Analysis and Homeland Security	3
TL 721	International Logistics Management	4
TL 723	Advanced Supply-Chain Planning Across the Enterprise	3
TL 725	Technology Advances and Logistics	3
TL 727	Organizational Change Management	3
TL 729	Adaptive Planning in Logistics Systems	3
TL 731	Logistics Decision Analysis	3
TL 733	Case Studies in Logistics	3
TL 735	Acquisition Contracts: Law and Management	3
TL 751	Transportation Systems Security	3
TL 752	Transportation Planning and Environmental Compliance	3
TL 753	Transportation System Modeling	3
TL 754	Urban Transportation Systems Analysis	3
TL 755	Context Sensitive Solutions	2
TL 756	Transportation Systems Laboratory	3
TL 782	Transportation Systems I	3
TL 783	Transportation Systems II	3
TL 785	Spatial Analysis in Transportation	3
TL 786	Public Transportation	3
TL 787	Public Transportation II	3
TL 789	Leadership, Ethics, and Academic Conduct in Transportation	3
TL 811	Modeling for Logistics Research	4
TL 823	Contemporary Supply Chain Research	3
TL 829	Supply Chain Risk Management	3
TL 831	Modeling for Transportation and Logistics Decision Analysis	3
TL 885	Geospatial Information Systems for Transportation	3
TL 790	Graduate Seminar	3
TL 793	Individual Study	3
TL 796	Special Topics	3
TL 899	Doctoral Dissertation	1-15
ENGR 770	Quantitative Modeling	3
ENGR 771	Probabilistic and Deterministic Methods	3
AGEC 771	Economics of Transportation Systems	3
GEOG 655	Introduction to Geographic Information Systems	4
GEOG 656	Advanced Geographic Information Systems	3

Canan Bilen-Green, Ph.D.
University of Wyoming, 1998
Research Interests: Quality and Reliability Engineering, Design and Auditing of Quality and Productivity Monitoring Systems, Statistical Modeling and Applications, Applied Operations Research
Department: Industrial and Manufacturing Engineering

John Bitzan, Ph.D.
University of Wisconsin-Milwaukee, 1997
Research Interests: Transportation Economics

Department: Management and Marketing

Alan Dybing, Ph.D.
North Dakota State University, 2013
Research Interests: Asset Management, Energy Impacts, Freight Transportation, Agricultural Transportation, Supply Chain Management, Transportation Economics, Spatial Analysis, Transportation Systems Modeling
Department: Upper Great Plains Transportation Institute

Gokhan Egilmez, Ph.D.
Ohio University, 2012
Research Interests: Problems of Multidisciplinary Domains Including Manufacturing, Supply Chains, Energy, Food & Agriculture, Transportation and Built Environment From Triple Bottom Line (Socio Economic And Environmental) Sustainability Point of View by Using Novel Research Methods Such as Life Cycle Assessment (LCA), Regional, National and Multi Region Input Output Analysis (RIO, NIOA, And MRIO), Data Envelopment Analysis (DEA), System Dynamics (SD), Carbon, Energy, Water and Ecological Footprint Analysis, Multi-Criteria Decision Making, Goal Programming and Fuzzy Set Theory
Department: Industrial and Manufacturing Engineering

Kambiz Farahmand, PhD, PE
University of Texas at Arlington, 1992
Research Interests: Productivity Improvement of Manufacturing Systems, Lean Manufacturing and implementation, Ergonomics, Safety and Human Factors Engineering, Human Exposure and Physiology Simulation, Simulation and Modeling, Facilities and Production Layout Planning, Operations & Materials Logistics Management and Strategic Planning, ISO and QS 9000 standards, and Healthcare Management
Department: Industrial and Manufacturing Engineering

Robert Hearne, Ph.D.
University of Minnesota, 1995
Research Interests: Natural Resource and Environmental Economics
Department: Agribusiness and Applied Economics

Siew Hoon Lim, Ph.D.
University of Georgia, 2005
Research Interests: Production Economics, Transportation, Industrial Organization
Department: Agribusiness and Applied Economics

Jill Hough, Ph.D.
University of California-Davis, 2007
Research Interests: Public Transportation, Travel Behavior, Built Environment, Accessibility and Mobility of Seniors
Department: Upper Great Plains Transportation Institute

Ying Huang, Ph.D.
North Dakota State University, 2015
Research Interests: Intelligent Transportation Systems, Pavement and Pipeline Performance Evaluation, Vehicle Identification and Traffic Analysis, Structural Health Monitoring/Smart Structures for Transportation Infrastructure, Applications of Adaptive and Smart Materials, Multi-Hazard Assessment and Mitigation
Department: Civil and Environmental Engineering

Daniel J. Klenow, Ph.D.
North Dakota State University
Research Interests: Social Vulnerability and Functional Needs Populations, Homeland Security and Terrorism, Tornado Vulnerability, Disaster Preparedness, Response, and Recovery
Department: Emergency Management

Won Koo, Ph.D.
Iowa State University, 1974
Research Interests: International Trade

Brenda Lantz, Ph.D.
Pennsylvania State University, 2006
Research Interests: Commercial Vehicle Safety Systems and Analysis, Supply Chain, Intelligent Transportation Systems for Commercial Vehicle Operations, and Statistical Modeling and Diagnostics.
Department: Upper Great Plains Transportation Institute

EunSu Lee, Ph.D.
North Dakota State University, 2011
Research Interests: Transportation Systems Modeling, Informatics, Spatial Analysis, Logistics, Supply Chain Management, Industrial Engineering

Department: Upper Great Plains Transportation Institute

Pan Lu, Ph.D.
North Dakota State University, 2011
Research Interests: Asset Management, Freight Transportation, Statistical Modeling and Applications, Multi-Modal Transportation, Applied Operation Research
Department: Upper Great Plains Transportation Institute

Diomo Motuba, Ph.D.
North Dakota State University, 2009
Research Interests: Transportation Economics, Transportation Systems Modeling, Freight Transportation, Econometrics, Logistics, Supply Chain Management
Department: Upper Great Plains Transportation Institute

Kendall E. Nygard, Ph.D.
Virginia Polytechnic Institute, 1978
Research Interests: Advanced Technologies in Logistics, Optimization Modeling, Simulation Modeling, Data Science and Computational Methods
Department: Computer Science and Operations Research

Peter O'Dour, Ph.D.
University of Missouri-Rolla, 2004
Research Interests: GIS, Groundwater contamination, Remote sensing
Department: Geosciences

David C. Roberts, Ph.D.
Oklahoma State University, 2009
Research Interests: Impacts of Agricultural Production Methods on the Environment and Natural Resources, Economics of Precision Agriculture Technologies and the Response of Cropping Patterns, Land Use Change to Emerging Biofuels Policy at the Federal Level
Department: Agribusiness and Applied Economics

Joseph Szmerekovsky, Ph.D.
Case Western Reserve University, 2003
Research Interests: Project Management and Scheduling, Complex Systems and Flexible Manufacturing and Using Linear and Nonlinear Dynamic and Integer Programming and Network Flows
Department: Management and Marketing

Denver D. Tolliver, Ph.D.
Virginia Polytechnic University, 1989
Research Interests: Transportation Systems Planning, Freight Transportation, Economic Analysis
Department: Upper Great Plains Transportation Institute

Rodney D. Traub, Ph.D.
Purdue University, 1994
Field: Operations Management
Department: Management and Marketing

Kim Vachal, Ph.D.
George Mason University, 2005
Research Interests: Policy, Economics, Regional Development
Department: Upper Great Plains Transportation Institute

Amiy Varma, Ph.D.
Purdue University, 1993
Research Interests: Transportation Systems and Planning, Traffic Engineering, Airports, and Infrastructure Management
Department: Civil Engineering

David L. Wells, Ph.D.
University of Missouri-Rolla, 1996
Research Interests: International Studies in Manufacturing Technology, Strategic Management, Economic Development Strategies
Department: Industrial and Manufacturing Engineering

William W. Wilson, Ph.D.
University of Manitoba, 1980
Research Interests: Commodity Marketing, Agribusiness, Industrial Organization

Department: Agribusiness and Applied Economics

Frank Yazdani, Ph.D., PE
University of New Mexico, 1987
Research Interests: Structural Engineering/Mechanics, Constitutive Modeling of Materials, Damage Mechanics, Plasticity, Computational Plasticity, Finite Elements, Concrete and Masonry Materials
Department: Civil Engineering