

# Transportation & Supply Chain

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## Department Information

- **Program Coordinator:**  
Elizabeth Worth
- **Email:**  
elizabeth.worth@ndsu.edu
- **Department Location:**  
Barry Hall/Quentin Burdick Building
- **Department Phone:**  
(701) 231-6038
- **Department Web Site:**  
[www.ndsu.edu/business/programs/graduate/phd/](http://www.ndsu.edu/business/programs/graduate/phd/) (<http://www.ndsu.edu/business/programs/graduate/phd/>)
- **Application Deadline:**  
See Admission Requirements
- **Credential Offered:**  
Ph.D.
- **English Proficiency Requirements:**  
TOEFL iBT 71, IELTS 6; Duolingo 105

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The Department of Transportation, Logistics, and Finance offers a Ph.D. degree in Transportation and Supply Chain. The degree is awarded through the College of Business in collaboration with the Upper Great Plains Transportation Institute. The program takes an interdisciplinary approach to transportation and supply chain and attracts students with backgrounds in supply chain management, transportation, agribusiness, applied economics, civil engineering, construction management, emergency management, finance, geosciences, and industrial/manufacturing engineering.

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## Admission Requirements

The Transportation and Supply Chain Ph.D. program is open to qualified graduates of universities and colleges of recognized standing. To be admitted with full standing, the applicant must:

1. Hold a master's degree (preferred) from an educational institution of recognized learning, baccalaureate degree a minimum.
  2. Have adequate preparation in one or more of the disciplines comprising transportation and supply chain.
  3. Have shown the potential to undertake advanced study and research as evidenced by prior academic performance
  4. Have earned a cumulative grade point average of at least 3.0 or equivalent in all courses completed at the highest education level reached
  5. Submit a NDSU Graduate College application consisting of the application, statement of purpose, official transcripts, letters of reference, and English proficiency scores (if applicable). Additional documents that may be submitted could include resume and professional vita. Applications for admission will be submitted via the Graduate College website. Applicants must meet all application requirements of the graduate school and department before being considered for acceptance
- For acceptance into a Fall semester, international applications are due December 1.
  - Domestic applications will be reviewed as they are received, and admitted students may be able to enroll in an earlier semester than the above deadlines.
  - 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.

## Apply for Admission

To apply for admission, please visit the Admission Information page (<https://catalog.ndsu.edu/graduate/admission-information/>).

## 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 merit and potential to undertake advanced study and research. To be considered for an assistantship, an applicant must complete a Graduate College application, be accepted by the department, and identify the desire for an assistantship or financial need in the statement of purpose.

In addition to the stipend, graduate assistants receive a graduate tuition waiver. Tuition waivers cover base tuition for NDSU graduate credits only. Students are responsible for differential tuition, student fees, and tuition for non-graduate level credits taken or Cooperative Education credits.

## Degree Requirements

The Ph.D. program requires the completion of a minimum of 90 credits of graduate study beyond the baccalaureate degree. Thirty credits will be automatically considered completed if the student completed one of the master's degree from the TLF Department. If the student already has a master's degree in a related discipline, the student is eligible to transfer a maximum of 30 credits from the master's degree towards the 90 credits. The credits are required to consist of the following:

- 18 credits of core Transportation & Logistics courses.
- 3 credits of required graduate teaching experience course.
- Out of 9 elective course credits needed, a minimum of 6 credits must be transportation and logistics elective courses.
- A minimum of 30 credits of research-based dissertation credits.

Each student must develop a plan of study under the guidance of a faculty adviser and a supervisory committee. Students must take a total of three different examinations to successfully complete their Ph.D. degree in Transportation and Logistics: 1) the qualifying examination, 2) the proposal defense examination, and 3) the dissertation defense examination. The qualifying examination is a written examination that will be required of each student after the qualifying courses have been completed. After passing the qualifying examination, the student will be formally admitted to candidacy for the Doctor of Philosophy degree. Students who pass the qualifying examination are expected to take the proposal defense examination by the end of their third year in the program. For the proposal defense and dissertation defense examinations, the supervisory committee shall serve as the examining committee and the major advisor shall serve as chair. The proposal defense examination is an oral exam and is concerned primarily with the student's detailed research proposal for the dissertation. Upon completion of the proposal defense examination, a student will be considered a doctoral candidate. The dissertation defense will be taken after the candidate has completed the course work and proposal defense examination. The dissertation defense examination, which is an oral examination, will be concerned primarily with the dissertation; but it may also cover material from course work, especially those courses fundamental to the dissertation. The Ph.D. program requires students to present at least one original transportation and/or logistics research paper at a national or international conference, and submit at least one paper to a referred journal.

| Code                                                      | Title                                                  | Credits                  |
|-----------------------------------------------------------|--------------------------------------------------------|--------------------------|
| <b>Core Courses</b>                                       |                                                        | <b>18</b>                |
| TL 823                                                    | Seminar in Supply Chain Research                       | 3                        |
| TL 831                                                    | Supply Chain Modeling Algorithms and Decision Analysis | 3                        |
| TL 881                                                    | Human Wellbeing through Transportation                 | 3                        |
| TL 882                                                    | Transportation Systems                                 | 3                        |
| TL 885                                                    | Spatial Analysis in Transportation & Supply Chain      | 3                        |
| TL 888                                                    | Research Methods                                       | 3                        |
| <b>Required Courses</b>                                   |                                                        |                          |
| TL 892                                                    | Graduate Teaching Experience                           | 2                        |
| <b>Transportation and Logistics (TL) Elective Courses</b> |                                                        | <b>4 or more courses</b> |
| TL 711                                                    | Integrated Supply Chain System                         | 3                        |
| TL 715                                                    | Introduction to ERP                                    | 3                        |
| TL 721                                                    | Global Supply Chain Management                         | 3                        |
| TL 725                                                    | ERP Configuration                                      | 3                        |
| TL 731                                                    | Supply Chain Decision Analysis                         | 3                        |
| TL 735                                                    | Practical Data Analytics                               | 3                        |
| TL 751                                                    | Supply Chain Transport Security                        | 3                        |
| TL 757                                                    | Technologies for Supply Chain Transport Solutions      | 3                        |
| TL 787                                                    | Transportation and Distribution                        | 3                        |
| TL 789                                                    | Managerial Leadership for Supply Chain Professionals   | 3                        |
| <b>Dissertation</b>                                       |                                                        | <b>30 or more</b>        |
| TL 899                                                    | Doctoral Dissertation                                  |                          |

## Faculty

### **Raj Bridgelall, Ph.D.**

North Dakota State University, 2015

Research Interests: Big Data Analytics, Internet-of-Things (IoT), Cloud Computing; Connected and Autonomous Vehicles (CAV), Shared Mobility, Intelligent Transportation Solutions; Signal Processing and Mathematical Modeling of Transportation Systems; Remote Sensing with Unmanned Aircraft Systems; Hyperspectral Image Analysis; Radio Frequency Identification (RFID); Real-Time Locating Systems (RTLS); Energy Harvesting and Massive Scale Autonomous Wireless Sensor Networks

Department: Transportation, Logistics, and Finance

### **Robert Froberg, Ph.D.**

North Dakota State University, 2019

Research Interests: Transport of Rolling Stock, Equipment, and Supplies to Austere Locations, Austere Environment Sustainment Planning, Transportation Analysis and Planning for Logistics, Supply Chain Planning, Assessment, and Optimization Leveraging (Big) Data, Modeling of Supply Chains and Transportation Networks

Department: Transportation, Logistics, and Finance

### **Ranjit Godavarthy, Ph.D.**

Kansas State University, 2012

Research Interests: Public Transportation in Small Urban and Rural Areas, Demand Response Transit and Paratransit, Bike Share, Roundabouts, Traffic Engineering and Operations, Transportation and Highway Safety

Department: Transportation, Logistics, and Finance

### **Pan Lu, Ph.D.**

North Dakota State University, 2011

Research Interests: Connected and Autonomous Vehicles, Smart Material and Structure Health Monitoring, Big Data Analytics for Transportation, Smart Transportation, Transportation System, Asset Management, Multimodal Transportation, Geospatial Transportation Modeling

Department: Transportation, Logistics, and Finance

### **Jeremy Mattson, Ph.D.**

North Dakota State University, 2017

Research Interests: Public Transportation, Transportation Economics, Demand Modeling, Travel Behavior, Built Environment

Department: Transportation, Logistics, and Finance

### **Dionio Motuba, Ph.D.**

North Dakota State University, 2009

Research Interests: Transportation and Land Use Planning, Freight Modeling, Transportation Economics, Connected Automated Vehicles, Logistics and Supply Chain Management, Transportation Safety

Department: Transportation, Logistics, and Finance

### **Tim O. Peterson, Ph.D.**

Texas A&M University, 1988

Research Interests: Managerial Leadership, Application of Information Technology to Organizational Issues, Scholarship of Teaching

Department: Management and Marketing

### **Fred Riggins, Ph.D.**

Carnegie Mellon University, 1994

Research Interests: Economics of Information Systems, Interorganization Systems, Adoption of New Technology, Radio Frequency Identification (RFID), Internet-of-Things (IoT), Blockchain, Cryptoeconomics, Information and Communication Technology in Microfinance

Department: Accounting and Information Systems

### **Robert Swearingen, Ph.D.**

North Dakota State University, 2019

Research Interests: Change Management in Supply Chain Organizations, Lean Inventory Management Process Improvement Supported by Value Stream Mapping, Enterprise Information Systems Supporting Supply Chain Management

Department: Transportation, Logistics, and Finance

### **Joseph Szmerekovsky, Ph.D.**

Case Western Reserve University, 2003

Research Interests: Project Management and Scheduling, Supply Chain Management and Technology, Energy Supply Chain Management, Healthcare Logistics

Department: Transportation, Logistics, and Finance

### **Denver Tolliver, Ph.D.**

Virginia Polytechnic Institute and State University, 1989

Research Interests: Highway Systems Modeling, Multimodal Transportation Planning, Freight Transportation, Energy and Environmental Analysis  
Department: Transportation, Logistics, and Finance