

# Georgia Tech Supply Chain & Logistics Institute

EDUCATION ■ INNOVATION ■ LEADERSHIP



**Georgia** Institute  
of **Tech**nology®

**For more than thirty years** the Georgia Tech Supply Chain & Logistics Institute (SCL) has been a world leader across a broad range of supply chain and logistics domains. The purpose of this viewbook is to acquaint you with the current status of our education, outreach, and research programs and to encourage you to participate. Whether you are a prospective participant in our executive education program or need assistance in solving strategic problems in your business, we have programs and resources that are applicable.

SCL is the largest supply chain and logistics research and education program in the world with more than thirty participating faculty, including seven chaired professors and three members of the National Academy of Engineering. SCL continues a traditional emphasis on practice-focused education and research facilitated by a high level of industry collaboration. In addition to master's and PhD programs in Supply Chain Engineering, we offer more than ten executive education courses attended by more than five hundred supply chain professionals each year. We have eight major research centers that span from traditional areas such as warehousing and transportation to emerging areas such as humanitarian and healthcare logistics.

We continue to expand our global presence with the establishment of a new Trade-chain Innovation and Productivity Center in Costa Rica, which provides us with an enhanced presence in Latin America. We have an ongoing relationship with The Logistics Institute – Asia Pacific, which we established in Singapore more than ten years ago. We also have significant partnerships in Chile, Argentina, Germany, Australia, China, and South Africa.

For more detailed information visit our Web site at [www.scl.gatech.edu](http://www.scl.gatech.edu).

If you have any questions or suggestions, please feel free to contact me at [don.ratliff@isye.gatech.edu](mailto:don.ratliff@isye.gatech.edu).

Sincerely,



**H. Donald Ratliff**  
Executive Director



# Table of Contents

Georgia Tech 2

The H. Milton Stewart School of Industrial and Systems Engineering

Georgia Tech Supply Chain  
& Logistics Institute 3

Learning with Purpose 5

EXECUTIVE EDUCATION

Courses

Certificate Programs

GRADUATE DEGREE PROGRAMS

MS IE (Manufacturing/Logistics/Supply Chain Engineering Track)

Executive Master's Degree in International Logistics

Dual Master's Degree in Industrial Engineering

Global Logistics Scholars

Reaching for New Perspective 8

Supply Chain Executive Forum

Leaders in Logistics

Other Industry Partnerships

University Partnerships Worldwide

Government Partnerships

Researching Solutions 12

Supply Chain Strategy

China Logistics

Health Care Logistics

Humanitarian Logistics

Global Transportation

Manufacturing Logistics

Resource Scheduling

Warehousing and Distribution

# Georgia Tech

Georgia Tech is one of the world's premier institutions of education and research and is consistently ranked among the nation's top ten public universities by *U.S. News and World Report*.

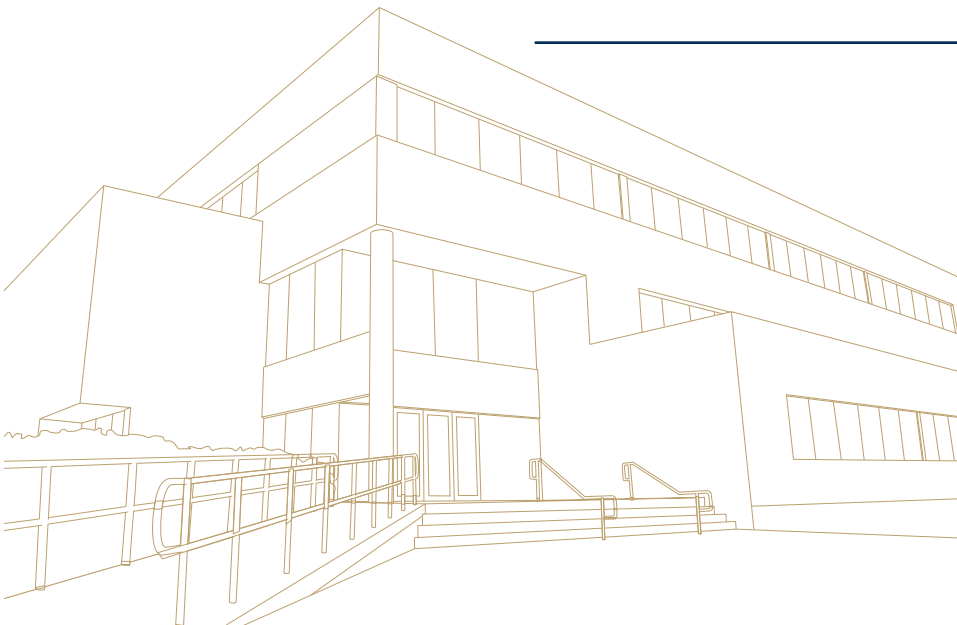
Georgia Tech has been graduating exceptional engineers, scientists, entrepreneurs, and business leaders since 1885. Today, Georgia Tech's innovative teaching and advanced research capabilities are defining the technological university of the twenty-first century.

Located on a 450-acre campus in Atlanta, Georgia Tech's nearly 1,000 faculty members provide a rigorous, technologically based education to more than 19,000 undergraduate and graduate students. The Institute offers degrees through six colleges: Architecture, Computing, Engineering, Liberal Arts, Management, and Sciences. In addition, Georgia Tech is home to more than one hundred interdisciplinary research centers that contribute vital research and innovation to America's business, industry, and government. The Georgia Tech Global Learning Center, a state-of-the-art facility located in Tech Square, hosts the SCL executive education programs.

## H. Milton Stewart School of Industrial and Systems Engineering

The nation's largest school of industrial and systems engineering is also the best, according to *U.S. News and World Report*. For more than fifteen years, the magazine's annual survey has ranked the Stewart School of Industrial and Systems Engineering number one for both its undergraduate and graduate programs. Its reputation is built on an outstanding curriculum, top-notch students, and world-class faculty—hallmarks of the school since its founding in 1948.

The faculty includes ten endowed chairs for distinguished professors. Half of these chairs were endowed by companies with a strong interest in supply chain and logistics management, and all are held by prominent scholars with established reputations in the field.



# Georgia Tech Supply Chain & Logistics Institute



The Georgia Tech Supply Chain & Logistics Institute (SCL), a unit of the H. Milton Stewart School of Industrial and Systems Engineering (ISyE), provides global leadership for research and education in the application of scientific principles to optimize the design and integration of supply chain strategy, infrastructure, processes, and technology. SCL's primary activities involve the development of new concepts and strategies for the practice of supply chain engineering and new tools for analysis, design, and management of logistics processes.

The movement of goods and services has been one of the educational cornerstones of Industrial and Systems Engineering education at Georgia Tech since the inception of the program. Research related to these areas came to prominence at Georgia Tech in the 1970s with the emergence of the Production and Distribution Research Center, the Computational Optimization Center, and the Material Handling Research Center. By tailoring their activities around the needs of industry, these centers not only followed Georgia Tech's traditional emphasis on solving business problems, but also provided a model for research focused on innovation and productivity that the Supply Chain & Logistics Institute continues today.

In 1992 these three prominent research centers were merged with what had become a world-class executive education program under the banner of The Logistics Institute. As its activities evolved and expanded, they were grouped into three categories: education, outreach, and applied research. The first category embraces executive education courses and seminars, certificate programs, and a master's degree in international logistics. Outreach includes the Supply Chain Executive Forum and Leaders in Logistics, as well as specialized industry-related programs and educational agreements with universities in other countries. In terms of research, the institute supports a number of centers devoted to specific areas of interest such as warehousing and distribution, complex resource scheduling, and manufacturing logistics.

To more clearly brand the scope of its work and the symbiotic relationship between supply chains and logistics, in 2006 The Logistics Institute was renamed the Supply Chain & Logistics Institute.

Over many years, partnerships with business and industry have played a definitive role in guiding the Supply Chain & Logistics Institute's services and direction. The result has proven to be mutually beneficial. Participating businesses enjoy incomparable opportunities for the professional development of top executives in critical areas, improve their operations through exposure to new ideas, and participate in problem-solving research projects they could not undertake on their own. From the university standpoint, the relationships keep educators and students apprised of the ever-changing business landscape, ensuring that their efforts remain in step with business world realities.

With its strong leadership, highly respected faculty members, and exceptionally talented students, the Supply Chain & Logistics Institute has earned an excellent reputation for its slate of executive education, international education, industry forums and conferences, industry studies, and economic development programs. Simply put, in the realm of supply chain management and logistics, there's nothing comparable.

**John J. Bartholdi, III**

Manhattan Associates Chair of Supply Chain Management, Stewart School of ISyE and Research Director, Georgia Tech Supply Chain & Logistics Institute

"Equipment—trucks, planes, and ships—are all commodities. Companies are successful only if they can be smart about using these tools intelligently—and the field of 'smart' changes very, very fast. Effectively managing resources helps supply chains become more efficient, flexible, and robust.

"The Georgia Tech Supply Chain & Logistics Institute serves a number of constituencies including companies looking for 'thought leadership,' business people who come for executive education, graduate students seeking specialized training, and international students who want to learn what supply chains look like at the U.S. end.

"We provide a high level of current, comprehensive programming that, in my opinion, is probably the largest single factor in the Stewart School of Industrial and Systems Engineering's number one ranking."

**Below:** Professor John Bartholdi's class in global supply chains conducted their first Great Container Race in May 2008. The students tracked two containers filled with medical supplies as the containers traveled by alternate routes and carriers to the University of Cape Coast Hospital in the West African nation of Ghana. One container traveled by rail to Savannah, took a French liner to Le Havre, was transshipped to Tema, and then continued by truck one hundred miles to Cape Coast. The other traveled by truck to Savannah, took a Danish liner to Algeciras, Spain, was transshipped to Tema, and then continued by truck to the final destination of Cape Coast. The students then analyzed the efficiency of the routes.

**Right:** Professor John Bartholdi seals a container before it departs for the railhead.



# Learning with Purpose

Thousands of logistics and supply chain management professionals have advanced their knowledge—and their companies' profitability—with the education they obtained through the courses and graduate degree programs offered through the Supply Chain & Logistics Institute.



Dr. Edward H. Frazelle, known by his students for putting “logic back into logistics,” has trained more than 20,000 professionals in the principles of world-class logistics and is one of the instructors who conducts SCL’s courses.

**Dr. Edward H. Frazelle**  
SCL Course Director  
President & CEO, Logistics Resources International

“Only a small minority of professionals working in supply chain logistics have formal education in the field. We started the executive education and certificate program to help close that gap.

“We teach in Georgia Tech’s high-tech classrooms, in corporate conference rooms, and online at desktops all over the world in an effort to share the world’s best practices, metrics, systems, and strategies for supply chain management.

We use lectures presented by the thought leaders in the field, case studies from the world’s leading supply chain organizations, and breakout discussion sessions facilitated by the industry’s top supply chain problem solvers to cover all the learning styles of the executives and professionals who attend our programs.”

## EXECUTIVE EDUCATION Courses

More than five hundred individuals each year sign up for at least one of the fifteen open-enrollment courses offered by the Supply Chain & Logistics Institute. Classes are available either on campus or over the Internet and cover topics related to logistics, transportation, warehousing, and supply chain management. The curriculum also contains specialized courses on subjects including material handling, supply chain finance, and supply chain analytics. Courses may be taken individually or as part of a multicourse certificate program and frequently include site visits, facility tours, and workshops. Classes are taught by Georgia Tech professors as well as adjunct faculty drawn from the consulting and logistics industries.

### Certificate Program

Participants who complete multiple SCL courses can qualify for the Supply Chain & Logistic Certificate. Over the past fifteen years, more than five hundred professionals have earned an SCL certificate.

Participants qualify for the Supply Chain & Logistic Certificate by successfully completing four online courses or by a combination of on-campus and online courses. The online courses provide logistics professionals with the same materials presented in the on-campus version of the courses. Students have the flexibility of covering the material at their own pace and may review materials as needed for up to one year. All SCL on-campus courses are conducted at the Georgia Tech Global Learning Center, a state-of-the-art conference complex located in Technology Square, part of Georgia Tech’s Midtown Atlanta campus.

[www.scl.gatech.edu/execed](http://www.scl.gatech.edu/execed)



**Jeff Stephens (IE 1984 and MS IL 2008)**  
Logistics Manager  
BMW Manufacturing Company  
Greer, S.C.

“The Georgia Tech Supply Chain & Logistics Institute courses provide a good overview on a range of topics. Learning about key performance metrics regarding inventory costs and logistics service provider performance was particularly useful. We have implemented several of these metrics as a way to drive improvements, since they were not measured before.

“The group discussions and presentations provide a great opportunity to learn best practices and understand trends in the supply chain industry.

“The financial courses provide great insight to the direct impacts the supply chain has on ‘bottom line’ profitability.

“The EMIL program combines great technical study with practical application of a project in lieu of a thesis. The savings from the project paid for the program fifty times over. The networks created provide long-lasting relationships and ongoing dialogue with colleagues. It is a win-win!”



The Executive Master's in International Logistics program's executive team from left to right: Erin Howlette, program manager; John Vande Vate, executive director; Greg Andrews, managing director; and Christina Morton, program coordinator.

## GRADUATE DEGREE PROGRAMS

The Georgia Tech Supply Chain & Logistics Institute has a proactive role in the graduate degree programs that are offered through the Stewart School of Industrial and Systems Engineering. SCL recruits both students and industry partners, infusing the programs with real-world projects and enriching the learning experience for students.

### MS IE (Manufacturing/Logistics/Supply Chain Engineering Track)

For individuals who prefer following a more traditional route, the Stewart School of Industrial and Systems Engineering offers a full-time master's degree program in industrial engineering with tracks in manufacturing, logistics, and supply chain engineering.

### Executive Master's Degree in International Logistics

Designed for experienced executives who want specifically to study global logistics and supply chain strategy without leaving their current positions, the eighteen-month program leads to a fully accredited master's degree from Georgia Tech's #1 ranked Stewart School of Industrial and Systems Engineering. Participants complete five two-week residences in North America, Europe, Asia, and Latin American. Between these residences, participants are back on the job applying the concepts taught during the course to improve supply chain performance.

[www.emil.gatech.edu](http://www.emil.gatech.edu)



**Above:** To complement their coursework, students in the Dual Master's Degree and the Global Logistics Scholars programs tour various manufacturing and distribution centers throughout the semester. Here the group had the opportunity to tour Norfolk Southern's John W. Whitaker Intermodal Terminal in Austell, Georgia.

**Right:** Professor John Langley, Haw-San Au-Yong (MS IL 2002), and Bob DeSouza, executive director of The Logistics Institute – Asia Pacific, at a THINK Logistics event sponsored by TLI-Asia Pacific.



**Haw-San Au-Yong (MS IL 2002)**  
Financial Analyst, Southeast Asia  
Maersk Line  
Singapore

Haw-San Au-Yong describes her job as “taking what I have learned at Georgia Tech and translating it into workable solutions in real life.”

Au-Yong is one of the first alumni of the Dual Master's Degree program.

“The program has a strong emphasis on both the technical and the practical, and I believe there is no other supply chain program equal to it. Many such programs—including MBA equivalents—shy away from the technical details, but the students of this program learn to relish them. The rigorous foundation helped me to grapple with the supply chain complexities in my job. The exposure to both technical and practical aspects gave me a good head start, not to mention a network of industry and academia professionals I can call on.

“The supply chain industry is not an easy one, and a good understanding of the issues on the ground helps us to avoid designing an impractical but technically elegant solution. Understanding the operational environment is key to supply chain success.”

## Dual Master's Degree in Industrial Engineering—Logistics and Supply Chain Management

In partnership with the National University of Singapore and The Logistics Institute – Asia Pacific, Georgia Tech offers a dual degree program for individuals who wish to develop logistics and supply chain management knowledge as well as research and industrial expertise in the context of Singapore and the Asia Pacific region. Students completing the eighteen-month program receive a master's degree in industrial engineering from Georgia Tech and a master's in logistics and supply chain management from the National University of Singapore. Graduates are well equipped to assume key engineering and management positions with global manufacturers, logistics service providers, and technology or consulting firms.

[www.scl.gatech.edu/dual](http://www.scl.gatech.edu/dual)

## Global Logistics Scholars

The Global Logistics Scholar is a certificate program designed for industrial engineering master's students and includes logistics seminars, tours, and executive education courses. Selected students participate in academic and extracurricular activities with students enrolled in other international programs, allowing them to interact with logistics faculty, industry professionals, and potential employers.

[www.scl.gatech.edu/scholars](http://www.scl.gatech.edu/scholars)

# Reaching for New Perspective

## **C. John Langley Jr.**

Professor of Supply Chain Management and Director of Supply Chain Executive Programs, Georgia Tech Supply Chain & Logistics Institute

“Overall, what we do helps companies change organizational behavior in ways that enhance their logistics and supply chain management and operations, thereby improving the overall conduct and profitability of their businesses.

“This includes planning and conducting both degree and non-degree executive education courses and programs, answering questions of various types, facilitating research, and conducting events such as the Supply Chain Executive Forum for dialogue and the exchange of important information relating to logistics and supply chain management.

“Attending conferences, holding discussions and interviews with industry executives, and the interaction during Supply Chain & Logistics Institute events are important ways not only of providing education, but also keeping us current with industry needs and challenges.”

The Supply Chain & Logistics Institute’s outreach programs embody Georgia Tech’s historical emphasis on collaboration between academia and the world beyond the campus borders. These relationships foster creative thinking and serve as rich resources of innovative applications for each of the organizations involved.

## **SUPPLY CHAIN EXECUTIVE FORUM**

Twice a year, executives from leading manufacturing, retailing, IT, and logistics services companies convene on the Georgia Tech campus to discuss new and innovative ways to streamline operations, enhance profitability, and integrate supply chain strategy with corporate strategy. The two-day event features a keynote address, networking opportunities, and panel discussions.

[www.scl.gatech.edu/scef](http://www.scl.gatech.edu/scef)

## **LEADERS IN LOGISTICS**

This annual membership program teams participating companies with Georgia Tech faculty and graduate students to work on research projects of mutual interest. Members enjoy the rewards of their association with a widely respected institute, and they also receive certain benefits in a number of institute education offerings. Leaders in Logistics may also review course material and request courses specifically suited to their needs.

[www.scl.gatech.edu/leaders](http://www.scl.gatech.edu/leaders)



Dr. Donald Bowersox, Dean Emeritus at Michigan State University, with Professor John Langley at a recent Supply Chain Executive Forum.

## OTHER INDUSTRY PARTNERSHIPS

The Georgia Tech Supply Chain & Logistics Institute is very proud of its sixty-year legacy of industry collaboration. Every year, SCL hosts a variety of conferences and performs independent studies and surveys for its industry communities. Examples include the Global Shipment Network Database and the Third Party Logistics Survey. Other collaborations include:

- **Transportation Productivity Summit.** Since 2003, the Georgia Tech Supply Chain & Logistics Institute has partnered with Schneider National Inc. to organize a Transportation Productivity Summit. The two-day summit brings together three hundred shippers and transportation leaders to discuss critical transportation issues, problems, and strategies for success. Previous topics have included hours of service, port congestion, fuel conservation, and sustainability. Two of the summits have been held in China to focus on the important role that China plays in global supply chains. The summits are led by Chelsea C. White III, H. Milton Stewart and Carolyn J. Stewart School Chair and Schneider National Chair of Transportation and Logistics, and Christopher “Chris” B. Lofgren, President and CEO of Schneider National.
- **Sloan Trucking Industry Program.** Began in the mid-1990s and funded for nine years by the Alfred P. Sloan Foundation, the Sloan Trucking Industry Program was designed to study and understand the freight trucking industry. During this time, faculty and students in engineering and the social sciences engaged in comprehensive research on issues associated with labor, the firms, and the operations and technology in the trucking industry. The Sloan Trucking Industry Program now has been integrated into SCL’s Industry Studies Program. Led by Don Ratliff, SCL Executive Director and UPS Regents’ Professor, the Industry Studies Program expands the original focus of the program to include shipping, air, and rail, along with trucking. This broader perspective allows first-year PhD students, working alongside their advisers, to research real-world intermodal transportation-focused projects and to stay in touch with current industry dynamics and corporate strategy.
- **Wine Supply Chain Council.** Organized in part by the Supply Chain & Logistics Institute, the council focuses on the global distribution of quality wines. Council members are drawn from academic and research organizations in Europe, Chile, Argentina, South Africa, New Zealand, Australia, and the United States.

[www.scl.gatech.edu/industry](http://www.scl.gatech.edu/industry)



Dr. Chris Lofgren (DR IE 1986), president and CEO of Schneider National Inc., welcomes participants to the 2008 Fuel Conservation and Management Symposium. The symposium brought together a group of academics, shippers, carriers, suppliers, and regulators in an open dialogue to discuss some of the daunting challenges the industry faces today and will face in the future.



**Edward M. Rogers (IE 1982, MS IL 2002)**  
Strategic Planning Manager  
UPS Corporate Strategy Group  
Atlanta

“Through the Leaders in Logistics program, UPS has gained access to some of Georgia Tech’s most talented students and faculty to help us tackle several difficult logistics research projects.

“Also, the Supply Chain & Logistics Institute’s broad portfolio of Executive Education Courses is superb. Well over a hundred UPS employees have participated in these classes to keep current in leading-edge logistics thinking and problem-solving techniques.

“Likewise, Georgia Tech’s Executive Master’s in International Logistics program is outstanding. The faculty, curriculum, live case studies, global travel, and the relationships built with other logistics professionals provide a unique learning experience. Our graduates from the program are exceptionally well prepared for increasingly complex assignments and greater levels of responsibility.”



PhD student Alejandro MacCawley, Professor John Bartholdi, SCL Executive Director Don Ratliff, and SCL Managing Director Harvey Donaldson in Mendoza, Argentina, to meet with the faculty of the National University of Cuyo regarding research opportunities in global food supply chains.

**Robert “Bob” DeSouza**

Executive Director  
The Logistics Institute — Asia Pacific  
Singapore

The best of the East combined with the best of the West—that’s how Bob DeSouza describes The Logistics Institute—Asia Pacific.

“Started in 1999, The Logistics Institute — Asia Pacific is a joint effort between Georgia Tech and the National University of Singapore.

“Our faculty conducts research, particularly in maritime logistics and port operation as well as in humanitarian relief and healthcare, and we enjoy extensive collaboration with industry here in Singapore and in the United States. On the education side, we teach a dual degree master’s program in international logistics where students earn degrees from both Georgia Tech and the National University of Singapore. We also sponsor a full schedule of lectures and seminars during the year for the benefit of regional companies doing business around the world.

“With the globalization of supply chains—many of which originate in Asia—the international perspective and experience provided by The Logistics Institute — Asia Pacific has become a vital resource.”

**UNIVERSITY PARTNERSHIPS WORLDWIDE**

As part of its ongoing commitment to provide global leadership in supply chain and logistics research and education, the Supply Chain & Logistics Institute develops relationships with other academic and research organizations around the world. Among them are:

- **The Logistics Institute — Asia Pacific.** An alliance among Georgia Tech, the Singapore Economic Development Board, and the National University of Singapore, this Singapore-based institute is a highly successful and recognized leader in research, education, and industry programs specifically focused on Asia Pacific links in global supply chains. The partnership, formed in 1999, includes a dual degree component in which students receive a master’s degree in industrial engineering from Georgia Tech and a master’s in logistics and supply chain management from the National University of Singapore.
- **Trade-Chain Innovation & Productivity Centers Network.** The increasing need for a comprehensive examination of trade-chains, together with our success in partnering with the National University of Singapore and various agencies of the government of Singapore, has led to the development of a global network of Trade-chain Innovation & Production (TIP) Centers. This network of centers will enable a comprehensive program focused on (1) developing insights, strategies, and methodologies to improve the productivity of existing trade-chains, (2) promoting innovation for identifying and enabling new trade-chain opportunities, and (3) providing education related to trade-chain infrastructure, innovation, and productivity. The Georgia Tech effort in developing this network is a partnership that includes the Supply Chain & Logistics Institute, the Stewart School of Industrial and Systems Engineering, and the College of Management. The core center will be located at Georgia Tech with the global network of partner centers initiated by Tech in partnership with industry and/or government in the countries where the centers are located. A new Costa Rica TIP Center will be added to the network in 2009 through a partnership among Georgia Tech, PROCOMER, and the Chamber of Industries in Costa Rica. Digital services and food products will be the trade domains of initial focus for this center, which will benefit the Costa Rica economy and scientific community. Initial funding for the center came from a private donor who wishes to expand Georgia Tech’s activities in Central America. Discussions are also underway with education and research groups to expand the TIP Center network to other countries in Asia, Europe, South America, Africa, and Australia.

[www.scl.gatech.edu/university](http://www.scl.gatech.edu/university)

## GOVERNMENT PARTNERSHIPS

The Supply Chain & Logistics Institute has a long-standing relationship with the National Science Foundation (NSF). SCL and ISyE faculty continue to receive grants and appointments from NSF. In May 2008, SCL Executive Director Don Ratliff was invited to serve a three-year term on the advisory committee of the NSF's Office of Polar Programs. As a member of the committee, Ratliff offers his expertise in the area of supply chain and logistics.

The Supply Chain & Logistics Institute also works closely with the U.S. Department of Transportation's Federal Highway Administration. The focus of this work is on the security and efficiency of the transportation system with special attention to international trade, seaport and airport security, and their economic interrelationships and impacts. Specific topics include new forms of information technology that can enable a secure and productive freight and passenger transportation system, as well as related modeling and planning research. Other topics include the state of physical infrastructure, the use of information technology to improve infrastructure and vehicle management, and operations, environmental impact, safety, and congestion mitigation.

The Supply Chain & Logistics Institute also works closely with the State of Georgia Department of Economic Development to develop and promote regional logistics-related resources and to leverage these resources for broader economic development. Of particular note is the institute's ongoing work with the Georgia Ports Authority to improve the logistics of moving containerized freight into and out of the port of Savannah, thereby enhancing Savannah's competitive position among other Atlantic coast ports. The Supply Chain & Logistics Institute is also involved with finding ways to increase air cargo traffic at Hartsfield-Jackson Atlanta International Airport and improve the city's rail hubs.

In addition, SCL worked closely with the Metro Atlanta Chamber of Commerce to establish its Logistics Innovation Council and the appointment of a vice president of logistics economic development.

[www.scl.gatech.edu/govt](http://www.scl.gatech.edu/govt)

### **Martin Savelsbergh**

Schneider Professor, Stewart School of ISyE, and Research Director, Georgia Tech Supply Chain & Logistics Institute

"Operations research and industrial engineering are basically applied sciences, even though important fundamental research is being done. As such it is vital to be aware of what is happening in industry and what the main challenges are. This knowledge helps set research agendas and develop educational curricula.

"Without a unit like the Supply Chain & Logistics Institute it would be more difficult to establish and maintain industry relationships. Offering a variety of services, from executive education and outreach to research, makes it much more attractive for companies to have a relationship with faculty at the institute and Georgia Tech.

"By streamlining their supply chain and logistics operations using ideas, tools, concepts, and technology developed at Georgia Tech, companies can create a competitive advantage, which ultimately translates to a more profitable business."



Schneider Professor Martin Savelsbergh and Professor Alan Erera, co-director (along with Chip White) of the SCL's Global Transportation Research Center.

# Researching Solutions

New ideas and new tools are born in the robust research environment supported by the Supply Chain & Logistics Institute. Solutions and improvements produced by researchers provide businesses with the high level of competitiveness that is critical to their success in the marketplace both at home and overseas.

The Supply Chain & Logistics Institute's research activities cover the full spectrum of issues ranging from efficient warehousing and distribution systems to newer concerns such as moving freight through China or delivering humanitarian relief to places with little infrastructure.

In keeping with the Institute's educational mission, research activities embrace a strong academic component for the educational benefit of graduate students while providing them with valuable hands-on experience that will be useful later in their careers. At the same time, projects are derived from real-world problems that directly affect business and industry.



Professors Martin Savelsbergh and Paul Griffin co-direct SCL's Center for Health Care Logistics, where supply chain and logistics concepts are developed and applied to aid in optimizing healthcare delivery.



**Starting from front row, working left to right:** Research Center Directors Ellis Johnson, Pinar Keskinocak, Chen Zhou, Leon McGinnis, Alan Erera, Julie Swann, Don Ratliff, Ozlem Ergun, John Bartholdi, John Langley, Chelsea C. White III, and George Nemhauser.



Left to right: Professors Julie Swann, Ozlem Ergun, and Pinar Keskinocak co-direct SCL's Center for Humanitarian Logistics, which seeks to improve the human condition by developing advanced response methods and technologies that will have a global impact.

**Pinar Keskinocak**

Associate Professor, Stewart School of ISyE and Co-Director, The Research Center for Humanitarian Logistics, Georgia Tech Supply Chain & Logistics Institute

"Translating the new findings of our research to practice and seeing its positive impact is very rewarding. I really like the exploratory and creative process that is part of research.

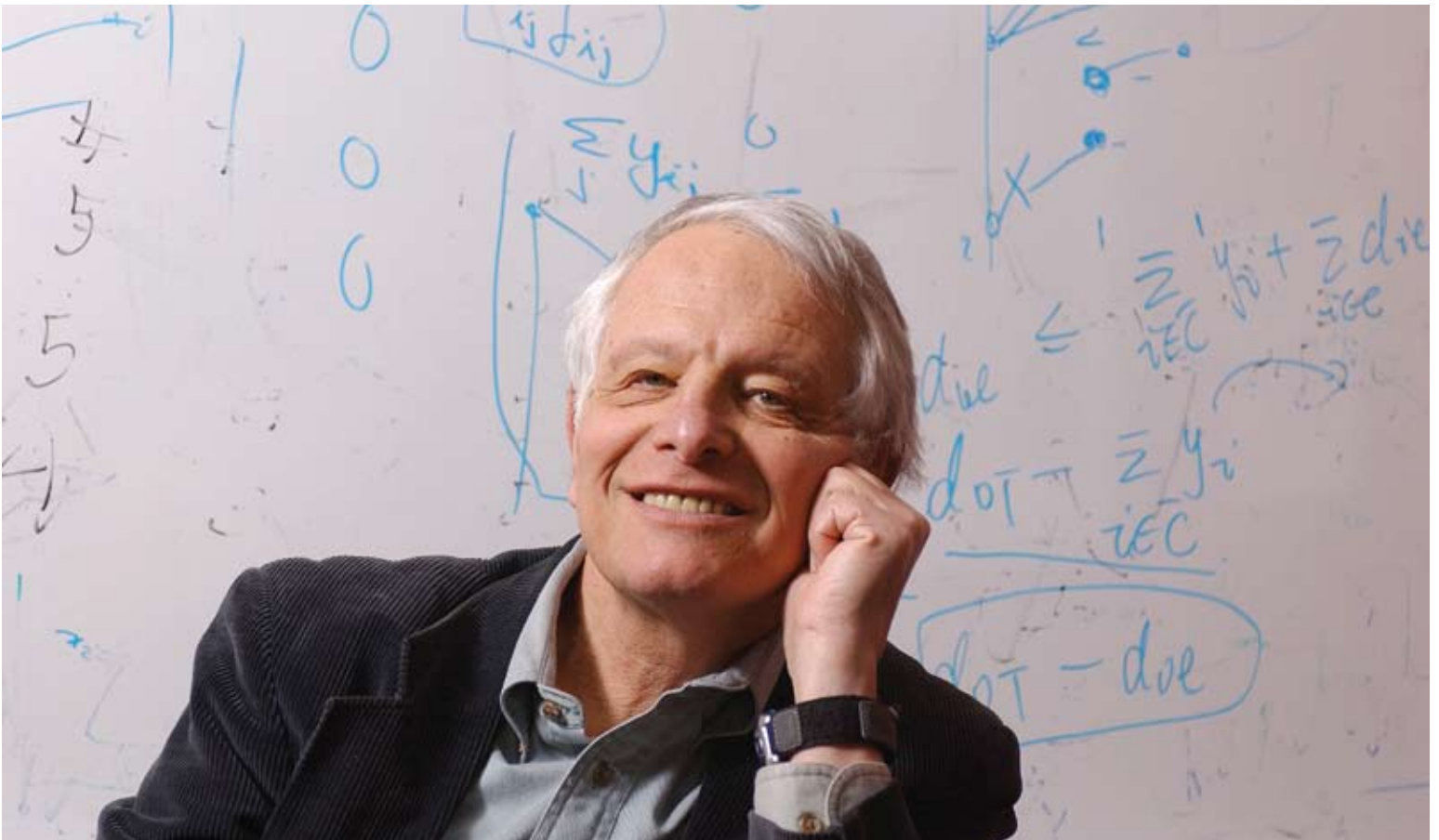
"Academics push the frontier of knowledge in new directions, and companies try to solve new, challenging business problems. While doing so, it is important for academia and industry to collaborate and identify the current needs of industry so that research findings from academia can be successfully applied in practice.

"On the other hand, it is also important to think beyond the current state of the world and explore new directions for the future. The collaboration between industry and academia is also important for research that focuses on new technologies and business processes.

"One of the great opportunities offered by the Supply Chain & Logistics Institute is collaborative projects involving faculty, graduate students, and industry partners. These projects can be on topics that have immediate relevance to the company or on topics that the company wants to explore over a longer term."

**Research at the Supply Chain & Logistics Institute is grouped into eight focused areas:**

- **Supply Chain Strategy.** Researchers develop innovative new business and operational strategies for the design, synchronization, and optimization of global supply chains. These strategies typically involve integrating people, processes, and technologies to achieve supply chain objectives while providing supply chain leadership and control. Attention is also directed to strategies to achieve competitive advantage.
- **China Logistics.** The growing importance of China as a major economic player has created many new business opportunities and challenges. This research is focused on finding ways to take advantage of those opportunities by developing a practical, working knowledge of China's transportation and logistics infrastructure as well as its warehousing and distribution practices. In addition, researchers explore the factors affecting long-haul road transportation in the country, as well as the role of micro wholesalers and distributors in last-mile delivery there.
- **Health Care Logistics.** Many of the concepts associated with supply chains and logistics can be adapted to the special needs of the healthcare industry. Projects include the design of future medical systems as well as healthcare supply chains for developing countries. Researchers also are experimenting with ways to utilize knowledge management techniques in healthcare supply chains.
- **Humanitarian Logistics.** The mission of this research is to improve both disaster preparedness and response and long term development in various areas such as health, nutrition, and education through collaborations with non-governmental organizations, private industry, and governments. Activities include facilitating multi-organizational collaboration to improve the effectiveness of humanitarian logistics by developing new or advancing existing methodologies and decision-support tools to improve logistics planning and response.



Professor George L. Nemhauser, co-director of SCL's Center for Resource Scheduling and the A. Russell Chandler III Chair, is one of the world's foremost experts on discrete optimization. He is actively working on several applications, especially crew and fleet scheduling problems in the airline industry.

- **Global Transportation.** Variabilities and uncertainties facing global freight transportation systems are key interests for experts developing concepts and tools to optimize freight movements. Researchers work to create new tools and techniques for improving operational productivity and resiliency of various freight systems, such as air freight, sea cargo, rail freight, and trucking. They also explore methods for enhancing efficiency at critical intermodal interface points, such as seaports, railroad yards, and trucking terminals.
- **Manufacturing Logistics.** Analysis and design for highly capitalized factories are at the heart of the research activities in manufacturing logistics. Areas of particular expertise include virtual prototyping of manufacturing and assembly systems, multi-disciplinary system modeling, and the design of workflow concepts and tools.
- **Resource Scheduling.** These problems range from scheduling machines in a factory to an airline assigning thousands of pilots to flights to major league baseball creating schedules of 162 games for each of 30 teams. All of these problems have complex constraints and many variables. The resource scheduling center employs faculty and PhD student expertise to develop models and algorithms to solve such problems.
- **Warehousing and Distribution.** The Supply Chain & Logistics Institute is the world leader in the application of scientific engineering principles to warehousing and distribution. Researchers are involved in the location and design of distribution centers, including layout, slotting, order picking, cubing, and facility benchmarking.

[www.scl.gatech.edu/research](http://www.scl.gatech.edu/research)



**Above:** Supply Chain & Logistics Institute's executive education team, from left: Tammy Artosky, Michele Powers, Joene Owen, and Carole Bennett.

**Left:** SCL Managing Director Harvey Donaldson awards Albert Rivadeneira the Supply Chain & Logistics Certificate.

**Below:** SCL's Executive Education courses are held at the Georgia Tech Global Learning Center (GLC). Classrooms in GLC have state-of-the-art audio, visual, computer, and telecommunication equipment which accommodates every possible learning technology. The facility is connected to the Georgia Tech Hotel and is conveniently located near MARTA and midtown Atlanta restaurants and shops.



**COMMITTED TO THE ENVIRONMENT**

Georgia Tech is committed to environmental sustainability. Tech has been named to *The Princeton Review's* Green Honor Roll, and its recycling program was awarded the 2008 Outstanding College or University Program by the National Recycling Coalition. Learn more at [www.gatech.edu/greenbuzz](http://www.gatech.edu/greenbuzz).

The paper used for this publication exceeds EPA standards for recycled fiber content, has been Green Seal certified, and was manufactured using nonpolluting wind-generated electricity. The wind-generated electricity used to make this paper meets strict environmental and consumer protection standards established by the nonprofit Center for Resource Solutions.

All sources for paper pulp are Forest Stewardship Council (FSC) certified to support responsible forest management worldwide. The FSC supports the highest social and environmental standards for paper use. This paper includes a minimum of 10 percent post-consumer recovered fiber.

**Please recycle this publication.**



Georgia Tech  
Supply Chain & Logistics Institute



EDUCATION ■ INNOVATION ■ LEADERSHIP



**Georgia Tech  
Supply Chain &  
Logistics Institute**

## Contact Us

For more information about the Supply Chain & Logistics Institute and its programs visit [www.scl.gatech.edu](http://www.scl.gatech.edu) or call 404.894.2343.

**Georgia Tech  
Supply Chain & Logistics Institute**  
H. Milton Stewart School of Industrial  
and Systems Engineering  
Groselock Building, Suite 203  
765 Ferst Drive NW  
Atlanta, GA 30332-0205