MIT Center for Transportation and Logistics

For nearly 50 years, the MIT Center for Transportation and Logistics (CTL) has been a world leader in supply chain management (SCM), logistics, transportation education, and research. The center's world-renowned research programs directly involve more than 80 faculty members and research staff from a wide range of academic disciplines as well as researchers in various affiliate organizations around the world. MIT's program is consistently ranked first among graduate business programs in logistics and supply chain management.

Accomplishments and Awards

- CTL's Supply Chain Management master's program was ranked number 1 in the world by QS in 2020, the entity's first-ever ranking of graduate SCM program offerings.
- Global Supply Chain and Logistics Excellence (SCALE) Network 10-month residential master's programs have been ranked number 1 in the world for SCM by Paris-based EdUniversal every year since 2016.
- In AY2021, CTL's SCM program taught students in person and on campus in all three academic semesters, the only MIT graduate program to do so. In addition, despite the many challenges of international travel, all but two students in the Class of 2021 were able to join us on campus.
- The fourth class of Supply Chain Management "blended" students arrived at and graduated from MIT.
- Further reflecting the changing landscape of education, the MITx MicroMasters® Program in Supply Chain Management delivered 10 online courses as well as at least 30 open-access live events and saw increases in verified learning certifications and pass rates. CTL MicroMasters team members have continued to refine their pioneering use of new artificial intelligence (AI)–based software for proctoring the comprehensive final exam. After two successful comprehensive final exam runs in 2020–2021, the program now boasts 2,976 MicroMasters credential holders and is the most attended MITx MicroMasters program.
- In June 2021, 21 eligible Supply Chain MicroMasters students attended the fourth annual MIT SCx Supply Chain Bootcamp, the second course to be held virtually.
- CTL director Yossi Sheffi published *The New (Ab)Normal: Reshaping Business and Supply Chain Strategy Beyond Covid-19* in October 2020.
- CTL researchers published more than 50 articles in various mainstream and industry publications. They were also interviewed and consulted extensively on supply chain issues, resulting in features in dozens of media publications.
- CTL published monthly articles based on SCM master's theses in the leading industry trade journal *Supply Chain Management Review*.

- The number of corporate partners in the CTL Supply Chain Exchange membership program stands at 45.
- Nearly 1,300 people attended Supply Chain Exchange virtual events in FY2021.

Education

MIT Supply Chain Management Master's Program

Since 1998, the MIT Supply Chain Management Program has attracted a diverse group of talented and motivated students from across the globe who graduate from our program as thought leaders ready to engage in an international, highly competitive marketplace. The program combines analytical, engineering-focused coursework with advanced leadership skills and is delivered in two formats:

- The 10-month Supply Chain Management residential (SCMr) option, designed for early-career professionals who want to build skills and increase their earning potential with minimal time out of the workforce.
- The Supply Chain Management blended (SCMb) option, which allows MITx MicroMasters® credential holders to earn an MIT master's degree by completing spring term on campus. Launched in 2016 and the first hybrid master's at MIT, the blended program option allows us to reach students who may not have considered or had the option to pursue traditional pathways toward a master's degree.

CTL's SCALE Network provides SCM students with opportunities for deep cross-cultural engagement and collaboration with fellow students and researchers around the world.

Class of 2021 Profile

The 10-month residential (SCMr) program admitted approximately 30% of AY2021 applicants, with 38 students (21 women and 17 men) from 15 countries matriculating. Students had an average age of 27, and with 4.8 years of professional experience on average. The class included eight Supply Chain Excellence Award fellowship awardees.

The SCM Supply Chain Excellence Award program provides provisional fellowships to the most outstanding seniors in undergraduate supply chain or industrial engineering programs at nine leading US universities and Tecnológico de Monterrey in Mexico. Awardees must apply and be admitted to the SCM program after 3–5 years in the workforce to redeem their fellowships.

An additional 36 students (9 women and 27 men) from 18 countries were selected to join the Class of 2021 in the blended (SCMb) cohort. Students entered with an average of 9.9 years of work experience (6.8 on average in the supply chain field). Their average age was 32.

Across the two cohorts, SCM master's students completed a total of 40 capstone and thesis projects in AY2021. Students work closely with one of CTL's Supply Chain Exchange partners (or, in a few cases, non-partner sponsor companies) to complete these research projects as a requirement for graduation and are advised by researchers from the center's labs and initiatives.

SCM.S94 Covid-19 and the Impact in Supply Chains was added to the curriculum in AY2021 to prepare SCM students to address new and ongoing business challenges related to the pandemic.

Class of 2021 Career Outcomes

Employment outcomes for the 2021 SCMr residential class were strong despite a dramatic decline in recruiting in the fall, during which time several prominent employers canceled or postponed their campus hiring due to Covid-19–related concerns. Overall, 21% of the class had received offers by the end of the fall semester, as compared with 64% in fall 2019. Hiring rebounded in the spring, dominated by e-commerce companies and consulting firms.

Within 60 days of graduating, 92% of SCMr students had accepted full-time employment offers, with 70% receiving signing bonuses and 60% receiving stock awards alongside salary offers averaging $126,000. Fifty percent of students indicated that they would be joining e-commerce companies, while 20% accepted offers from consulting firms. Key employer partners that hired multiple students included Alix Partners, Amazon, Heyday, and Wayfair. Collectively, these organizations hired 57% of employed students. Despite concerns about the willingness of employers to sponsor international students, all international students seeking employment in the United States were able to secure positions.

Most SCMb (blended) cohort students (67%) were sponsored by their employers and plan to return to those employers. Candidates who sought new employment accepted roles in consulting (Accenture, McKinsey, O9 Solutions, Deloitte) and e-commerce (Wayfair). These industries have a great need for supply chain talent, and the companies offered compelling compensation packages. Other employers included GE and Wave Life Sciences.

Capstone Projects and Research Partners

Twenty-one companies participated as Supply Chain Exchange capstone/thesis partners. This year's projects included the following:

- How Postponement Strategy Can Reduce Cost and Lead Time for Pharma Supply Chains
- Defining and Detecting Churn in Truckload Transportation
- Adaptability of Manufacturing Operations through Digital Twins
- Diving Deep into the Determinants of Driver Dwell
- Network Design for Two-Day E-Commerce Fulfillment
- Should Shippers Be Afraid of Ghost Freight? An Empirical Analysis of a Customer Portfolio from TMC, a Division of C.H. Robinson
- Vessel Network Optimization in the Great Lakes Region
- Potential Benefits of Drones for Vaccine Last-Mile Delivery in Nepal

- Measuring Disruption Indicators in Food Service Delivery Supply Chain
- Maximizing Profits in a Warehouse and Distribution Business Using Segmentation Analysis
- Automation of Warehouse Decision Making
- Innovative Consolidation Techniques for Improved Transportation Efficiency
- E-commerce Business-to-Business (e-B2B) Distribution Strategy and Network Design for Nanostores
- Network Optimization: International Inbound Logistics
- Channel Flow Optimization for Product Allocation in Grocery Retail
- Fuel Efficiency and Safety in Coca-Cola FEMSA Last-Mile Logistics
- Advancing the Circular Economy of Plastics through eCommerce
- Delivering Locally Sourced Nutritious Food to Indian Households
- Inventory Management for Slow Moving and High Volatility Items
- The Secret Recipe for Modeling Warehouse Throughput
- Micro-Fulfillment Feasibility for Metro Trade Area Transformation
- Dynamics of Supply Chain Sustainability
- Power Influence in Horizontal Collaboration Relationships
- Supply Chain Simulation for Production Strategy Evaluation
- Developing a Digital Solution to Container Triangulation in China
- Carbon Efficient Network Design: Evaluating the Trade-Offs Between Carbon Emissions, Transportation Cost and Delivery Time for a Middle-Mile Distribution Network
- Improving Survival of Micro & Small Firms in Latin America During Covid-19 via SRM and CRM Strategies
- Optimizing the Logistics Network for Pipeline Inspection
- MIT Campus PPE Demand Planning
- Supply Chain Segmentation in the Apparel Industry
- Leveraging Predictive Analytics to Assess Operations Metrics
- Trade-Offs in Strategic Capacity Planning Under Demand Uncertainty
- Portfolio Modeling and Forecasting of Single-Use Rare Disease Treatments
- Increasing Resilience Through Advanced Analytics in a Pharmaceutical Company

- The Impact of Trade Credits in Nanostore Distribution
- Identifying Root Causes of Stockout Events in eCommerce Using Machine Learning Techniques
- Goldilocks and the Three Dispatchers: Quantifying the Impact of Dispatcher Management on Truck Driver Performance
- Optimal Production Planning Strategies for Global CPG Company
- Demand Forecasting for Food Rations at the United Nations Darfur Mission
- Digital Transformation for Flexible Last-Mile Distribution

MicroMasters Credential in Supply Chain Management

We ran 10 SCx massive open online courses (MOOCs) during FY2021. We revisited the content of the five SCx courses, adding more lessons, recitations, interviews with experts, and live events. We created and developed at least 30 live events during the last year, increasing the number of live participants and post-event views. In November 2020 and May 2021, we administered the seventh and eighth comprehensive final exams for those learners who qualified by passing all five courses. The exams were proctored online, and we continued refining our use of new software based on artificial intelligence. This required a significant effort on the part of the team, since we were pioneering the use of this technology.

As of July 2021, over 432,000 learners from 196 countries across the globe have enrolled in at least one MicroMasters course. A total of 46,518 individual verified course certificates have been issued to more than 16,200 unique learners, and 2,976 MicroMasters credentials in SCM have been granted. The MicroMasters team is currently preparing the next run of the comprehensive final exam for November 2021 and is offering five SCx courses this summer and fall. A new group of SCx learners begins in September.

We participated in several conferences and academic events to share updates and results from the MicroMasters program, including the EMOOCs Conference. We also published articles on the impact of the MicroMasters program in journals such as *Supply Chain 24/7* and participated in different panels focusing on the future of education.

MIT Global Supply Chain and Logistics Excellence Network

Education Highlights

Supply Chain and Logistics Excellence Network (SCALE) centers conducted AY2021 activities in hybrid formats, with most students attending some classes in person. A handful of students participated in their programs fully remotely due to Covid-19-related travel/visa restrictions.

The pivot to hybrid/remote learning and increased use of online platforms allowed students to connect more readily with global audiences. One example is the SCALE

Research Expo, held annually in January. Students typically present their research projects in person to an audience of approximately 300 Boston-area supply chain professionals and academics; in 2021, project materials and video presentations were presented online and accessed by more than 5,600 practitioners, researchers, and supply chain students around the world who engaged heavily with students through comments, questions, and discussions on the Research Expo website.

Network-wide, 133 students earned degrees in 2021 through residential and blended SCALE master's programs, and 27 students earned the Graduate Certificate in Logistics and Supply Chain Management. As noted, SCALE 10-month residential master's programs were ranked number 1 in the world by Paris-based EdUniversal, and the Supply Chain Management Master's Program was ranked number 1 globally by QS. In addition, the Zaragoza Logistics Center (ZLC) master's degree in logistics and supply chain management has been ranked as the best engineering logistics and supply chain management master's in the 250 Best Master's in Spain rankings by *El Mundo* for 11 consecutive years.

The Ningbo China Institute for Supply Chain Innovation expanded its master's program offerings in 2020. Since 2017, the institute has offered its 10-month SCM curriculum as part of a two-year MBA conferred by Ningbo University, and in 2020 it finalized the details of a 10-month master's in supply chain management delivered in partnership with Nottingham University Ningbo. The first cohort of the new 10-month MSc in international business (supply chain management) will matriculate in fall 2021.

Research and Outreach Highlights

The Zaragoza Logistics Center continues to lead the European market in research and development projects in the area of logistics and supply chain management, with active projects funded by the European Union, private companies, and the government of Aragón. In 2020–2021, ZLC researchers contributed four book chapters and published articles in professional journals, including *Maritime Economics & Logistics*; *Operational Research, An International Journal*; the *Journal of Transportation Security*; and the *Journal of Cleaner Production*. ZLC faculty and research staff presented their research findings at key national and international conferences.

Luxembourg Centre for Logistics and Supply Chain Management (LCL) faculty and researchers presented their work at a number of virtual industry conferences and symposia in 2020–2021, including the Institute for Operations Research and the Management Sciences (INFORMS) conference, the Production and Operations Management Society (POMS) conference, eXplore (hosted annually at LCL), and both the 40th and 41st annual International Symposium on Forecasting. Also, LCL researchers and PhD candidates published in a number of trade publications and journals such as *Manufacturing & Service Operations Management*, *TOP*, the *International Journal of Production Economics*, the *Journal of Air Transport Management*, and the *Journal of Revenue and Pricing Management*.

The Ningbo China Institute for Supply Chain Innovation finalized a partnership with Nottingham University in the United Kingdom to offer a 10-month master's program

option through Nottingham's Ningbo campus, creating an MIT SCALE supply chain master's option for students who want to study in China but do not wish to pursue a two-year graduate business degree.

Research

AgeLab

The AgeLab is a multidisciplinary research program that works with businesses, government, and nongovernmental organizations to improve the quality of life of older people and those who care for them. AgeLab enjoys sponsorship from corporations in multiple industry sectors addressing the needs of an aging society (e.g., property and casualty insurance, retail, financial services, pharmaceuticals, and consumer products). Sponsors include AARP, the Bank of America, Google, Panasonic, The Hartford, Transamerica, Stanley Black & Decker, USAA, Humana, Florida Blue Cross Blue Shield, Travelers, Affectiva, Lowe's Home Improvement, car manufacturers, and others.

The AgeLab conducted experiments and fieldwork that engaged nearly 200 research participants on campus and more than 14,000 in field trials of hardware, surveys, focus groups, and in-depth interviews. AgeLab researchers authored 18 peer-reviewed journal publications, participated in numerous academic conferences, and wrote for and appeared in national media outlets including the *Wall Street Journal* and the *Washington Post*. In addition, AgeLab hosted two symposia involving experts in the fields of caregiving and health/nutrition. With sponsor Five Star Senior Living, AgeLab held the annual summit for its OMEGA (Opportunities for Multigenerational Exchange, Growth, and Action) program, an initiative designed to foster intergenerational connections between high school students and older adults. AgeLab also convened CareHive, a first-of-its-kind caregiver panel with more than 1,000 participants, as a new means of gathering data about the caregiver experience. Ongoing research and insights developed over 20 years were captured in a new graduate subject: 11.S941 Global Aging: Planning Cities for a 100-Year Society.

Following the Covid-19 outbreak in the United States, the AgeLab moved nearly all of its operations and research online, including its ongoing bimonthly focus group of consumers aged 85 and over. It continues to conduct research and collaborate remotely; for example, the lab is collaborating on a new cross-generational survey series exploring life, work, and consumerism in the Covid era. It will convene two symposia remotely this fall: one on new caregiving resources and one on the impact of AI/machine learning on the life course.

The AgeLab is recognized worldwide as an innovator in understanding the demands of the evolving longevity economy and its impact on various complex systems, including transportation, health, finance, and community development. Collaborating with a number of MIT departments and labs, including the Media Lab (Livable Communities), the Department of Urban Studies and Planning (Future of Real Estate), and the Department of Brain and Cognitive Sciences (Aging Brain Initiative), as well as the Department of Mechanical Engineering and the Computer Science and Artificial Intelligence Laboratory (Ubiquitous Computing and Autonomous Systems), the AgeLab

is laying new ground in thinking about retirement, information presentation and design, autonomous vehicle systems, and home services that offer both convenience and care across the life span.

Computational and Visual Education Lab

Founded in 2017, the CTL Computational and Visual Education (CAVE) Lab is a research and education initiative focused on the use of interactive visualization to improve supply chain and logistics data visibility, advanced data analytics, and data-driven supply chain decision making. Leveraging a specifically created physical lab space at MIT equipped with state-of-the-art visualization technology, the lab is working on developing interactive visual interfaces for data and analytical tools addressing complex supply chain and logistics problems.

CAVE provides students, researchers, and decision makers with a more intuitive understanding of and access to quantitative methods to support strategic design, tactical planning, and operational decision problems in the supply chain and logistics domain and related fields. The lab offers a hands-on environment for learning about and implementing advanced analytics approaches to complex decision problems and allows for in-depth analyses of behavioral aspects of data-driven supply chain and logistics decision making.

MIT Digital Supply Chain Transformation

The MIT Digital Supply Chain Transformation (MIT Digital SC) research group explores the opportunities that digital transformation may bring to supply chains. This entails understanding the role of digital technology and data in the transition toward value-driven supply chains. MIT Digital SC's research shows that digital technology is accelerating the pace of business and transforming supply chains, which can lead to up to a 50% reduction in processing costs and an increase in revenue of up to 20%. However, even companies that make digital supply chain transformation a high priority face major hurdles to realizing their goals. Studies show that while 70% of companies report they have started a formal digital transformation effort, less than half have defined or plan to implement a roadmap. Most important, more than 30% are "dissatisfied" with their progress so far.

With this motivation, the research team investigates three primary research streams: multidimensional collaboration in supply chains, digital supply chain capabilities, and artificial intelligence in supply chain management. The researchers have had a number of papers published in leading academic and business-oriented journals. Some of the featured research projects cover synchromodality in transportation and supply chain management based on real-time information, digital twins to boost sustainability capability in reverse supply chains, and design of AI systems with human-machine teams.

MIT Digital SC also works on projects with globally leading companies from various industries such as Dell, Coca-Cola, Desigual, Walmart, and Lenovo. In AY2021, research was focused on the following projects:

- Development of a digital platform as a simulation tool to implement different methods for developing horizontal collaborations between diverse stakeholders, running scenarios for gain, and engaging in value sharing in collaborative last-mile delivery.
- Research to provide a better understanding of how AI augments collective intelligence and enhances human and machine capabilities. We empirically analyzed successful cases in demand forecasting in the retail industry using field experiments and estimated causal effects through a multivalued treatment effect methodology.
- Complex, adaptive, and longitudinal buyer-supplier transactions in digital supply chains and how to address different sources of uncertainties. In this regard, we examined three different levels of complexity—nodes, dyads, and networks—to understand how each level informs emergent network behavior and feeds relationship dynamics.
- A case study with Dell about its roadmap for digital supply chain transformation.
- Digital supply chain transformation strategies for Coca-Cola Femsa.

MIT Food and Retail Operations Lab

The Food and Retail Operations Lab (FaROL) has converted into a think tank promoting long-term sustainable food and retail ecosystems worldwide. We work together with the Global Foodbanking Network (GFN), the World Union of Wholesale Markets (WUWM), Tufts University, Warehouses4Good, Cargamos, LOGYCA, startups, and other multilateral funding agencies to drive our slogan: "Food for thought, thought for food."

Among our achievements, we developed a 13-session webinar series for Latin America and the Caribbean in collaboration with the Center for Latin-American Logistics Innovation (CLI) to respond to the Covid-19 crisis. In addition, team members participated in more than 20 forums to share their research with industry representatives, scholars, and policymakers. The most important events included academic conferences (e.g., POMS, INFORMS), practitioner forums (e.g., the WUWM conference), and webinars with GFN, CLI, and many academic partners from the SCALE Latin America network.

One-third of the submissions to the 2021 SCALE Latin America Conference focused on FaROL-related topics. We won two seed grants from the MIT International Science and Technology Initiatives, one to combat food malnutrition in slums in Brazil and one to connect smallholder farmers to urban areas in Peru. In addition, we collaborated on two projects (with funding from the Inter-American Development Bank) to map food waste in Colombia and one project (funded by the World Bank) piloting deliveries to nanostores using e-cargo bikes in Colombia and Mexico. We were awarded a seed grant with Tufts University and the City of Somerville to analyze food access models through nanostores in the Boston metropolitan area.

FaROL members advised on 25 theses and capstone projects and published two books, six book chapters, seven research papers, and a number of working papers in

proceedings from multiple conferences. We are currently executing approximately 15 projects in more than 10 countries around the world.

Finally, we have developed a bimonthly research webinar with industry representatives, policymakers, startups, and members of the public to define an action-driven research agenda with a multidisciplinary approach.

MIT FreightLab

In FY2021, the MIT FreightLab team contributed thought leadership to the freight transportation sector in multiple ways. In February we hosted an industry roundtable, Securing Transportation Capacity in Challenging Markets, that convened multiple supply chain stakeholders for a virtual discussion on the current state of freight transportation. The team also presented our ongoing work at the annual POMS conference in May. Shraddha Rana presented her paper "Discrete Event Simulation for Evaluating Fuel Distribution Interventions to Mitigate Disruptions," and Angela Acocella presented "Elephants or Goldfish? An Empirical Analysis of Carrier Reciprocity in Dynamic Freight Markets."

MIT GeneSys: Supply Chain Management for Micro and Small Enterprises in Developing Countries

The MIT GeneSys project aims at contributing to the survival and growth of micro and small enterprises (MSEs) by improving supply chain management.

Since 2016 we have developed a comprehensive methodology, data collection process, and mobile app that provide detailed assessments and recommendations to increase the survival of MSEs. We have partnered with 20 universities in nine countries in Latin America (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, and Uruguay) and worked with approximately 1,000 undergraduate students who have participated in data collection on and assessments of more than 500 MSEs.

In the face of the sudden outbreak of Covid-19, the world has been pushed into a recession, and the economic damage is mounting across all countries. The situation is more severe in Latin America and the Caribbean, where 99% of companies are MSEs, than in other areas. As a response to this crisis, we have broadcast six webinars with the participation of approximately 1,500 MSE managers from the countries listed above. These webinars have focused on providing insights into different ways to mitigate the impact and improve MSEs' survival via better supply chain management.

Consequently, our team has outlined and deployed a large-scale project organized around several questions and objectives. The aim of this research is to help MSEs survive the Covid-19 crisis.

Fifteen universities (some with multiple campuses participating) from Bolivia (La Paz and Santa Cruz), Brazil (Rio de Janeiro and Florianopolis), Colombia (Bogotá and Medellín), Ecuador (Quito), Mexico (Mexico City, Aguascalientes, State of Mexico, Puebla, Monterrey, and Torreon), Peru (Lima and Piura), and Uruguay (Montevideo) have joined the project.

Participants include approximately 200 MSEs, more than 40 faculty members and researchers, approximately 400 undergraduate students, one master's student, and two PhD students. All students will be trained in the use of a mobile app to gather data from MSEs.

The expected outcomes of this large-scale project are as follows (1) to help MSEs in Latin America mitigate the impact of Covid-19; (2) to develop and disseminate the project findings, which will be used to scale the effects on other MSEs in similar challenging conditions; and (3) to develop SCM competencies among students in Latin America as a tool for the training of future professionals.

Finally, in order to disseminate our findings, we are planning to conduct large-scale webinars and a web-based simulator in which MSEs can input their data, obtain recommendations, and share best practices. We will use our media connections and other sources to engage with more MSEs and key stakeholders in the region.

MIT Megacity Logistics Lab

The MIT Megacity Logistics Lab (MLL) focuses on understanding and transforming how supply chain organizations approach the process of providing cities with goods and services in light of rapid global urbanization. As cities grow in size and density, last-mile delivery operations are becoming increasingly critical to companies' success in reaching urban markets.

Since its founding in 2012, MLL has grown into one of CTL's most active research groups, attracting significant amounts of external funding from major private- and public-sector research partners. Among the sponsors of the lab are UPS, Walmart, Coca-Cola Femsa, Anheuser-Busch InBev, Adidas, and the World Bank Group.

The lab has engaged a large number of graduate and undergraduate students from all over the world and has started to offer the SCM.293[J] Urban Last-Mile Logistics graduate course, which is cross listed in MIT's Supply Chain Management, Civil and Environmental Engineering, and Urban Planning programs. Furthermore, the lab collaborates with a dense network of international researchers on topics of common interest.

Omnichannel Distribution Strategies

While most of the existing research in the area of omnichannel distribution has focused on the sales side of the movement, our work focuses on appropriately designing the physical network of urban goods transportation that would form the backbone of any omnichannel strategy. We propose a model that helps retailers integrate online and offline channels and design a more efficient omnichannel distribution network.

We have developed a mixed integer programming model for the network design problem of a carrier specializing in online deliveries. The model incorporates customer preference for click and collect facilities and focuses on the impact of several relevant parameters.

We published a paper about omnichannel logistics networks in the *Computers and Industrial Engineering Journal*, a top international journal in the field.

We have also developed a network design model integrating offline and online channels in the grocery business. We published the model results, which show that omnichannel strategies can deliver improved performance and reduced costs, in *Supply Chain Management Review*.

MIT Sustainable Supply Chains

MIT Sustainable Supply Chains is nearing completion of its second annual *State of Supply Chain Sustainability* report in conjunction with the Council of Supply Chain Management Professionals. Following a successful report launch last year, the 2021 report was supported by five companies: Blue Yonder, C.H. Robinson, Intel, KPMG, and Sam's Club.

Data collection for the study began in fall 2020 and consisted of more than 2,400 survey responses, 21 interviews with industry executives, and an analysis of more than 250 relevant published documents including corporate social responsibility and sustainability reports, news articles, journal articles and research reports, and industry reports.

The report is expected to be released in July 2021.

Outreach

The foundation of CTL's corporate outreach is the Supply Chain Exchange, a large, active, robust corporate membership program in the supply chain management field.

Corporate Relations

During FY2021, CTL dropped three companies from the Exchange: Schlumberger, Hershey's, and ORR. Four were added as partners to the exchange: Project44, Nolan Transportation, Link Logistics, and Analog Devices.

Outreach Events

CTL organized 31 events in FY2021. Following the closure of the campus due to the Covid-19 pandemic, CTL moved all events to a virtual format.

- In September 2020, the MicroMasters team hosted a virtual supply chain bootcamp for SCx students.
- CTL held two sessions of its major supply chain management executive education course (in January and June 2021), Supply Chains: Driving Strategic Advantage. The January course was also attended by 24 executive MBA students from the Antwerp Business School and 24 from the Institute of Business Studies in Moscow.
- In January 2021, MIT SCALE took its 13th annual Global SCALE Network Supply Chain Student Research Expo online. More than 180 students from all SCALE Network programs (CTL, ZLC, CLI, and the Malaysia Institute for Supply Chain Innovation) presented over 100 thesis projects to thousands of people virtually.

- CTL hosted the virtual Roundtable on Supplier Diversity, Equity, and Inclusion on January 12.
- CTL hosted Supply Chain Champions for Change: An International Women's Day Panel on March 8 with industry guests.
- The center hosted the following events for CTL Supply Chain Exchange partners: Analytics of the Future Virtual Roundtable: Robotic Process Automation (October 16, 2020), Innovations in Transportation Roundtable: Transportation Portfolio Management (November 10, 2020), Analytics of the Future Virtual Roundtable: Predictive Analytics (November 18, 2020), and Securing Transportation Capacity in Challenging Markets (February 25, 2021).

In March 2020, CTL began hosting a weekly series of research briefings for Supply Chain Exchange members. The Supply Chain Exchange Virtual Series has hosted a number of CTL researchers who have presented on topics including supply chain resilience, the impact of Covid-19, supply chain sustainability, and more.

Personnel Changes

In FY2021, new hires and appointments at CTL included postdoctoral associates Zachary Noonan and Edgar Gutierrez-Franco; research associate Lauren Finegan; research affiliates Melissa Broughton, Talia Rose Gilfix, Allison Green, Cecilia Law, Beatriz Rojo Agustin, and Meaghan Rudolph; digital learning specialist Kellen Betts; human resources coordinator Oltiana Kacori; program assistant Jonathan Mayer; and senior research support associate Micah Luedtke.

In addition, visitors to CTL included visiting military scholars Lieutenant Colonel Jeremy D. Johnson, Lieutenant Colonel William E. Laase, and Lieutenant Colonel Joseph Paladino and international visiting students Fiona Esther Guerin and Daniela Neupert.

Departures from CTL included research scientists Alexis Bateman, Sergio Alex Caballero, and Tuba Efendigil; postdoctoral associates Steven G. Landry, Atieh Madani, Alberto Morando, Andres Felipe Munoz Villamizar, Michele Davide Simoni, Nima Kazemi, and Cansu Tayaksi; research associate Gabriel Eduardo Sanchez-Martinez; research affiliates Michael Veatch and Li Ding; lecturer Gregory Steinbruner; program manager Suzanne Greene; machine learning engineer Meng Wang; technical associate I Elise Tanner; social media and marketing administrator Samantha Varney; and administrative assistant I Iliyana Krivcheva.

Yossi Sheffi
Director
Elisha Gray II Professor of Engineering Systems
Professor of Civil and Environmental Engineering