

# POP QUIZ

## SUPPLY CHAIN EDUCATORS ANSWER PRESSING QUESTIONS

Recent interest in supply chain management is attracting students in record numbers. How are education programs preparing those students for a supply chain career? We quizzed some of the top academic programs in the country to find out.

By Karen Kroll

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or much of the decade prior to the pandemic, the number of students in supply chain programs couldn't match industry's need for supply chain professionals. "The biggest challenge was convincing students it was a real career path," says Brian Fugate, chair of the department of supply chain management at the University of Arkansas.

As the scope of the pandemic and its impact on supply chains and logistics became clear, just about everyone gained some familiarity with the concept of a supply chain. Many supply chain programs, like those at the University of Arkansas, became "beyond overwhelmed" with increases in enrollment, Fugate says.

Most students choosing transportation, supply chain management, and related majors will be well-prepared for roles in industry. "The academic infrastructure for transportation and supply chain management programs in North America is excellent," says David Fisher, executive director of the Transportation & Supply Chain Institute at the University of Denver. "This is an advantage we need to leverage as a nation."

Here is how some of the top supply chain programs in the country are preparing students for an evolving industry.

## Q: HOW DO YOU SEE CAREERS IN SUPPLY CHAIN MANAGEMENT CHANGING?

**David Fisher, University of**

**Denver:** In my 30-plus year career in transportation, logistics, and supply chain management, I've never seen so much potential for change. Companies are testing driverless trucks, warehouses that run robotically, and systems that optimize freight using advanced algorithms. These are macro changes.

The jobs of tomorrow will increasingly be found in advanced technology, optimization, coding, and other non-traditional elements that make up the thrust of change in logistics.

**Anna Nagurney, University of**

**Massachusetts, Amherst:** The new supply chain professional is more of a data scientist. At the University of Massachusetts, we emphasize innovation. Students gain an excellent grounding in data and technology, modeling, and the software packages they'll use in their careers.

They also need expertise in a supply chain domain—such as healthcare, manufacturing, or food products—as well as knowledge of business strategy and finance, along with operations, so that they can model risk management.

Students also need to understand the geopolitical risk around the world. And I can't overemphasize enough the importance of communication skills, both in giving presentations and in collaborating with others on a team.

## Q: WHAT SKILLS WILL BE KEY TO FUTURE SUPPLY CHAIN PROFESSIONALS?

**Edward Anderson, University of**

**Texas:** The ability to leverage business intelligence—to extract information from data and then craft a story around it to help reach decisions—is more important than it used to be. We don't need full-on data analytics, but we do need to be able to understand data at a level that wasn't necessary 10 or 20 years ago, when data was hard to come by. Now it's not.

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BROAD COLLEGE OF BUSINESS

Supply chain management programs at Michigan State University's Broad College of Business prepare students for careers in the field by integrating topics from manufacturing, purchasing, transportation, and distribution into a unified program.

with have stated emphatically that they don't want to lose sight of leadership capabilities, such as being able to speak clearly and persuade.

Often, in supply chain, you don't have much direct control to get everyone on the same page. So, leadership capabilities become more important.

**Tobias Schoenherr, Michigan State**

**University:** In my sourcing courses I emphasize the skills that are needed to succeed as a purchasing professional, including how to develop strong buyer-supplier relationships, trust, empathy, and talent management.

**Kelly Lynch, Michigan State**

**University (MSU):** Key skills are communication, data analysis, interpersonal skills, end-to-end supply chain management thought processes, and a broad set of core courses—writing, history, and others—that are required of all MSU students.

**Brian Fugate, University of**

**Arkansas:** What's shifting is how we enable students to think better and to have a command of soft skills, like communication.

In teaching project management, we used to teach the six-month waterfall management approach. Now we do scrum project management, helping students become more agile.

And while we teach solutions like Agile Project, we still use Excel because many companies still do.

## Q: HOW DO YOU PREPARE STUDENTS FOR CAREERS IN AN EVOLVING FIELD?

**Fisher:** Along with transportation and supply chain management, we teach leadership, finance, trade, regulatory affairs, and technology. We also help students embrace life-long learning as a habit, to have a well-rounded and maximized potential for advancement. There is no such thing as having too much knowledge.

As the past several years have demonstrated, we live in a complicated world. It is essential that logisticians keep moving forward so the world can as well.

**Fugate:** If you were going to design a program to make sure students are *not* prepared to deal with issues such as trade wars and the conflict in Ukraine, you would take the traditional approach of lectures and exams. We are moving beyond that.

While students still need to know the basics, the pandemic showed us how important it is that students are prepared to adapt, solve changing problems, and face uncertainty. We throw students into projects that have more ambiguity and that change partway through the process. It's frustrating for students, but they learn to deal with change.

We also require all students to get internships. The difference between students with experience versus those without it is night and day.



**Robert Glenn Richey, Jr., Auburn University:** It used to be that you taught just transportation and logistics. Now we also teach quality management and new product development, as well as an international content covering, among other subjects, importing and exporting and port operations.

We also have a required internship or co-op program. Students land in positions in purchasing, transportation, brokerage, and analysis, and other functions. It allows them to get a feel for the job and apply their book learning to a real environment.

Students also travel to conferences where they can hear from top minds in supply chain management and participate in case study competitions.

## **Q: HOW HAS THE PANDEMIC IMPACTED SUPPLY CHAIN CURRICULUM AND PROGRAMS?**

**Nagurney:** Supply chain education has changed in the past few years. We're not focusing just on supply chain cost. Now, risk and resilience are important. It's more just-in-case versus just-in-time.

We discuss how to recover from and plan for various disruptive events. For example, if the ports shut down or are congested, how can we identify alternate routes?

**Schoenherr:** In my strategic sourcing and supply management courses, I have integrated the impact of the pandemic on purchasing, starting with illustrating the importance of purchasing, and then weaving through topics such as supplier selection and evaluation, global supplier footprint, supply chain design, buyer-supplier relationships, and risk management.

All of this illustrates that supply chain management matters, and that companies need to put the "management" back into "supply chain management."

**Anderson:** Before COVID, the main concern was building students' analytic capability. That's still important, but COVID showed the importance of relationship management. Evidence shows that companies with better



**A Bachelor of Arts in Transportation and Supply Chain from the University of Denver involves hands-on instruction in procurement, inventory management, international trade, supply chain logistics, and project management, among other topics.**

supplier relationships got first dibs.

Companies also ask us to give feedback on team interaction between students. It's not just leadership that's important, but also interpersonal skills and creating situations where students work together. While there's much talk of numerical, analytic, and modeling capabilities, the discussion now also recognizes you can't lose sight of other skills. Otherwise, companies would hire just technology people.

**Lynch:** The biggest change is that companies that previously did not know or understand how strategic supply chain management can impact their company before the pandemic do so now.

Companies have to understand how supply chains can impact their costs, time to market, innovation, and margins, and how they're missing the boat if they don't embrace strategic supply chain management.

## **Q: WHAT OTHER CHANGES ARE OCCURRING IN YOUR PROGRAMS?**

**Fisher:** We just launched a bachelor degree in transportation and supply chain for adult learners with full-time jobs. We strategically established this program because the industry increasingly needs people who already are in careers to have growth potential. It also helps with retention.

We also have broadened our courses in transportation and supply chain environmental, social, and governance (ESG) topics. We focus on social issues and how the supply chain can impact areas such as trafficking and diversity.

And we've strengthened our courses in government policy, because our industry is subject to significant and ever-changing regulatory shifts.

**Nagurney:** ESG and cybersecurity are more prominent. I also teach a course on humanitarian logistics and disaster management, bringing in real-world events, such as the pandemic and the conflict between Russia and Ukraine. The overall message: You need to be able to adapt and to be agile.

**Anderson:** Supply chain resilience is more important. We look at a number of strategies to achieve this, like geographic diversity of suppliers, and then teach it in a way that recognizes the complexities.

For instance, most sub-suppliers of semiconductors are located in Asia. So, if you manufacture semiconductors and decide to source more from Mexico, you may still need to get some components from Asia.

ESG concerns, and particularly environmental concerns, have become important to students. However, reducing a company's carbon footprint is more complex than it might seem. For instance, if you switch your fleet to electric vehicles, you need to know the locations of fast-charging stations your vehicles will use.

**Lynch:** MSU students learn end-to-end supply chain management and that the only way you optimize your supply chains as a company is to strategically align the supply management (procurement), operations, and logistics functions together. That is the key.

In addition, risk management,

sustainability, and the resiliency of a company's supply chains are critical to success. It's not only about optimizing costs, but also enhancing the revenue side of the equation. Strategic management of the supply chain can give companies a competitive edge.

**Richey:** During the pandemic, we launched both an online and an on-campus supply chain management Masters program and have about 35 students. Some students come with a supply chain background, but many ended up in supply chain, even though their background is in something else.

### **Q. HOW HAVE RECENT DISRUPTIONS IMPACTED INTEREST AND ENROLLMENT?**

**Fugate:** We see massive growth at the undergraduate level. We actually need more teachers and professors.

It's so attractive to work in supply chain, the cost of giving up, say, four years to become a supply chain professor is steep. Those who choose to become a supply chain professor never regret it.

**Richey:** Seven years ago, about 180 students were in our program. Now, at least 550 students are in the undergraduate supply chain program. It's a massive adjustment.

Many are transitioning from accounting programs; in supply chain, you're not behind a computer screen all day. We also see growth in the number of women in the program.

**Nagurney:** The pandemic increased the general public's awareness of supply chains. Now parents and family members understand that supply chains are extremely important, so they know that if their children are interested in the topic, it can be a great future professionally. Demand for classes has grown by about 40%.

At the same time, CEOs and company boards understand how critical supply chains are. That helps when I invite guest speakers in my classes or when we ask for funds for development. I honestly can't think of a more relevant or a more exciting subject to be teaching now or learning about than supply chains. ■

# ROLL CALL

Meet the professors who participated in this roundtable discussion.



**Robert Glenn Richey, Jr., Ph.D.**

Harbert Eminent Scholar and Chair  
Department of Supply Chain Management  
Auburn University  
Raymond J. Harbert School of Business



**Tobias Schoenherr**

Hoagland-Metzler Professor  
Purchasing and Supply Management



**Kelly Lynch**

Director of Corporate and Student Relations  
Michigan State University  
Eli Broad College of Business



**Brian S. Fugate, Ph.D.**

Chair, Department of Supply Chain Management  
Oren Harris Endowed Chair in Transportation  
and MIT Fulbright Scholar  
The Sam M. Walton College of Business  
University of Arkansas



**David Fisher**

Executive Director,  
Transportation & Supply Chain Institute  
University of Denver



**Anna Nagurney, Ph.D.**

Ph.D. Coordinator in Management Science  
Eugene M. Isenberg Chair in Integrative Studies  
Director, Virtual Center for Supernetworks  
University of Massachusetts Amherst  
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**Edward G. Anderson Jr., Ph.D.**

Professor of Management,  
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