



Engineering, business schools team up to benefit students

Unique partnership, intensive internships distinguish University of Michigan's award-winning Tauber Institute for Global Operations.

By Lawrence Seiford,
Roman Kapuscinski
and Theresa Ceccarelli

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he University of Michigan's award-winning, 20-year-old Tauber Institute for Global Operations provides graduate students within the College of Engineering and Ross School of Business with high-level, operations-management work experience and the opportunity to secure coveted jobs at leading corporations. "Two to three months after graduation, nearly 100 percent of our students have taken positions; generally in the \$70,000s to \$100,000s," says Diana Crossley, managing director with the Tauber Institute for Global Operations. "Our internships set our students apart. It's much easier to envision hiring someone who not only has technical skills, but who also understands how to apply them. Last year alone, our students saved \$10 million per project. In three years, they saved \$375 million."

Sarah Markey, 24, finished up her master's in mechanical engineering at the University of Michigan this year with six job offers including a fantastic opportunity with IBM in Austin, Texas. The competitive edge came in part from the Tauber Institute's 14-week internship, which focuses on operations management. During that time, Markey joined Rahul

Chowdhury and Alida Villarreal, students at the Ross School of Business, to work on a successful strategy for Masco Cabinetry that has generated significant savings and increased network-capacity utilization by more than 20 percent. They helped transition Masco Cabinetry from a brand-driven to a competency-driven supply chain.

“They really had two deliverables,” says Chris Winans, vice president of operations with Masco Cabinetry. “One was to optimize the component-manufacturing network while minimizing cost and the other was to build an Excel-based model that keeps the supply chain relevant on an annual basis. To do this, they built an optimization tool that we’re still using today. It allows us to analyze different cost drivers across the network.”

As a result, Masco Cabinetry, which is part of Masco Corp., a Fortune 500, moved around parts, capabilities, lumber and products; optimized the material flow between key cost drivers within the network; streamlined door-manufacturing and finishing operations; and expanded some capacities. “The Tauber Institute attracts top talent and these internships have always been successful for us,” says Winans. “In this case, we shifted all of the production in one direction or another and we took some capacity offline. We also picked up and moved some capabilities that didn’t exist in some places and now do the majority of our lumber production, door manufacturing and finishing at fewer locations.”

Many Companies Involved in Program

Approximately 30 companies – including Ford, Cisco, Cooper Lighting and Amazon – are part of the program, which won the inaugural UPS George D. Smith Prize for its preparation of students in operations research, management science and analytics. The award was presented by INFORMS.

Students also do facility tours at places such as GM, Ford and UPS; can volunteer to help coordinate the Tauber Leadership Speaker Series, which draws speakers from companies like Target, Intel, Bosch and Frito-Lay; and can help plan the Tauber Institute’s annual Global Operations Conference. Keynote speakers at last year’s conference included Mike Roth, vice president of North American operations with Amazon.com, and Jon Lauckner, chief technical officer at General Motors.

“The complementary skill set of engineering and business is the perfect fit within supply chain operations at Cisco,” says Scott Morey, a director of sales and operations planning at Cisco. “At our company, someone who has a technical background with an understanding of how products were designed and put together, combined with a business background – and an understanding of how to drive value, volume and



Walter James “Jim” McNerney Jr. (front, center), CEO of The Boeing Company, visits with all the Tauber students who worked on three separate Boeing team projects during the summer of 2012.

scale – can help us solve the bulk of our business problems. The reason is that you’re able to look at a problem from multiple angles, as well as see other people’s perspectives from multiple angles. Hard skills, as well as soft skills, are critical to succeed in business, especially at an international operation like Cisco, which requires teamwork with people not only across the United States, but also worldwide. Also, some of the leading consulting companies expect you to have both backgrounds so it can continue to pay off years after graduation.”

At any time, Cisco’s Supply Chain Operations group works with students from five to 10 schools and hires a number of its interns each year.

“I strongly believe that being part of the Ross School of Business and the Tauber Institute opened many doors for me,” says Alida Villarreal, 35. “My job search was a very extensive but successful process. Before I graduated, I received five job offers. I accepted a position at W.W. Grainger as senior manager in Global Purchasing Strategy. This role allows me to work across business units to develop a product strategy and analytic framework that can be used to assess the relevance of the product assortment for local customers. Additionally this role allows me to share best practices on assortment assessment across business units.”

Approximately 47 percent of Tauber Institute students accept jobs from companies involved in the program and around 44 percent receive job offers from companies where they’ve interned (around 22 percent accept them). Three to eight students go to work every year for Boeing, and 25 to 35 percent of students take positions with consulting firms. In 2013 alone, AT Kearney, McKinsey, Deloitte and Scenaria hired University

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Intensive INTERNSHIPS

of Michigan graduates, who were part of the Tauber Institute program.

“It’s an ideal scenario for us, both with respect to the internships and also in terms of attracting top talent who may have already worked with an organization for a time and have the required skill set when we are trying to fill a position,” Winans says.

High Demand for Skill Set

Morey says he is surprised that more universities are not formally educating students on both the business and engineering side of supply chain operations, especially since the demand for the skill set is high. At most schools, students must generally identify the need and acquire the knowledge on their own. Another key for Cisco is having studied, worked or lived abroad. Since Cisco has operations worldwide, that dictates the schedules of many people working in operations. For example, Morey’s workday is now dominated with international calls and videoconferences early in the morning and late at night.

Rahul Chowdhury, 31, now a senior manager in global-business processes with Wal-Mart Stores Inc., had a background in supply-chain consulting before entering Tauber and brought two distinct experiences to the Masco project: modeling large, complex supply-chain entities and managing limited timeframe projects with a diverse team in a client space. “But even with my



Tauber student Gerlad Lou working on the 2012 BorgWarner Turbo-HSCB team project in Kirchheimbolanden, Germany.

experience, it was a very challenging project since we had a very limited time to build a model for an entire component supply chain. The span between early May and August was jam-packed with each of us giving at least 10 to 12 hours on most days if not more. It was great teamwork, and all of us chipped in with a fair amount of the workload. I took the lead in project scoping, solution building and best-practice identification. We were fortunate to have the complete support of our sponsors and faculty advisors.”

At Wal-Mart, Chowdhury, an internal consultant, is responsible for merchandising analytics for Wal-Mart’s international arm. “My responsibilities involve working with teams from different geographies to find ways to reduce costs and improve sell-through across different merchandising departments and categories,” he says. “Even though this is a very different industry and work profile, the analytical skill sets I developed during the project have been very helpful in my present job. As an international student, I did not have any exposure to working in the United States. But due to my Tauber experience, I was at ease from my first day on the job. The Tauber project was my most valuable experience at school, and I am thankful to the Ross School for including this wonderful learning experience as part of the curriculum.”

Constantly, Carefully Evolving

A key challenge for the Tauber Institute is carefully evolving in an ever-changing job market that favors innovation. “We work with companies over time,” says Crossley. “However, as the economy and student interests change, we try to make sure that we continue to have a well-balanced group of industries. Over the past couple of years, we’ve done outreach to include energy companies, food companies, consumer products goods and then there has also been a lot of interest in sustainability.”

The Tauber Institute also works with its advisory-board members to ensure that the program remains relevant. “I think that is one of the reasons our success

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Tauber students Jon Landstra (left) and Akshay Desai worked together on the Alcoa Team Project in Whitehall, Mich.

continues,” Crossley adds. “We are constantly evolving and keeping the program relevant. For example, we have some projects this year focusing on big data. This is a wonderful fit for us since there is a strong demand for analysis. Having data is one thing, but you need specialists who understand how to interpret and manipulate it in order to get to actionable results.”

Smart technology is also driving efficiencies. “The macro trend toward energy savings is driving industries, like ours, to adopt new technology,” says Chris Scocos, the vice president of operations with Cooper Lighting. “Some fixtures are now being configured with controls managed by iPhones and tablets. The innovations are exciting. But to transition to new technology, we have to be able to fund the investment by driving more cost productivity from our business. And that’s why programs like the Tauber Institute are so valuable. Although not industry experts, our Tauber team was able to come in and use the research and analytical skills they learned to identify and drive cost savings for our business.”

Another frequently cited benefit of the Tauber internship program is that companies gain access to all of the university’s research and resources.

“You’ve got the University of Michigan behind it including all the research that they’ve done and all the



Photo by Dwight Cendrowski

Tauber students Dot Gregg (MBA '13) and Kevin Shallcross (EGL '13), who spent last summer in Zeeland, Mich., working on a project for Woodward, Inc., won the 2012 Spotlight! Scholarship event sponsored by the Tauber Institute. Pictured, from left to right: Tauber Industry Co-Director Al Woodliff, John Bowman (Director of Operations, Woodward), Shallcross, Tauber Co-Director Roman Kapuscinski, Joel Tauber, Gregg, Scott Nisbet (vice president, Woodward) and Tauber Co-Director Larry Seiford. Gree and Shallcross each received a \$5,000 scholarship.

learnings that they have,” Scocos says. “So the students can talk with professors and other researchers and look at past case studies.”



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The students also cite the university's support as a key benefit. Each team is assigned two faculty advisors (one from the university's Ross School of Business and one from the College of Engineering); a com-

munications coach, who previews papers and presentations, suggests edits and provides general style tips; and a team-dynamics coach, who makes sure the students are working well together.

"We also try to impart soft skills through year-round modules because those are the skills that will enable our students to get ahead," Crossley says. "So while they are earning their MBA or master's in engineering, they use their electives for courses in the opposite school and then go through training through our Leadership Advantage Program. We offer operations-efficiency and leadership modules to prepare students by further cultivating their skills, teamwork capacity, cultural awareness and business relationships. Our advisory board told us that in order for our students to have a competitive advantage, they needed that training. As a result, some companies strictly want to interview our students because of the thoroughness of the program." **ORMS**

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Tauber students Katelyn Bevier (left) and Stephanie Kuo worked at the BorgWarner Cadillac Plant in Cadillac, Mich.

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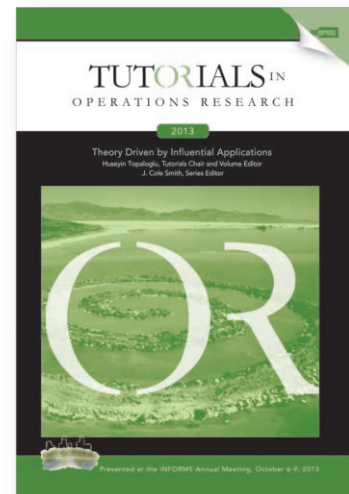
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