

# CARISCA REPORT

CENTER FOR APPLIED RESEARCH AND INNOVATION IN SUPPLY CHAIN – AFRICA

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CARISCA team members from Arizona State University and Kwame Nkrumah University of Science and Technology gather in Kumasi, Ghana, before the start of the 2022 Supply Chain Research Summit. (Photo by Fondjo Images)

## Second annual Research Summit proves Africa matters to global supply chain

CARISCA hosted its second annual Supply Chain Research Summit June 28-30, 2022. The three-day event featured three keynotes, more than 50 paper presentations, four invited sessions and a dissertation award session.

Researchers and practitioners presented papers during three parallel tracks: general supply chains, sectoral supply chains and emerging issues in global supply chains. The Supply Chain Research Summit attracted more than 450 supply chain researchers, practitioners and students from 26 countries (including 16 African countries), attending both in-person, in Kumasi, Ghana, and online.

Describing the Supply Chain Research Summit as “a platform to share newly created knowledge on and practical solutions to global supply chain inefficiencies and ineffectiveness,” the provost of the College of Humanities and Social Sciences at KNUST, Charles Marfo, opened CARISCA’s second annual conference. He did so on behalf of Professor (Mrs.) Rita Akosua Dickson, KNUST vice-chancellor.

For the next two-and-a-half days, supply chain experts from across the globe exchanged information and insights on a broad range of topics. Sessions covered blockchain, deep tier finance, lean practices, product safety, cold chain logistics, gamification, modern slavery in global supply chains, decarbonization, sustainability, artificial intelligence and the impact of COVID-19 on the supply chain industry.

“We want CARISCA to be a place where new ideas are developed, tested and disseminated around the world,” said Dale Rogers, CARISCA executive director. “I think that actually happened at the research summit this year.”

### NONCOMMUNICABLE DISEASE SESSIONS

Among the most popular programs at the summit were three invited sessions on supply chain challenges, solutions and innovations related to noncommunicable diseases.

Strokes, cancer, diabetes and other noncommunicable diseases, or NCDs, account for more than 70% of the global burden of disease and lead to 41 million deaths annually.



CARISCA Director Nathaniel Boso welcomes attendees to the 2022 Supply Chain Research Summit. (Photo by Immanuel Offei)

That's according to session chair Helen McGuire, NCD team lead at PATH, a global nonprofit working to improve public health.

Yet, medicines and products that could prevent deaths from noncommunicable diseases are the least available and incur the highest out-of-pocket costs. Further, less than 2% of development assistance is allocated for NCDs, McGuire reported.

"We're currently trapped in almost like a poverty cycle of data and money," said panelist Andrea Feigl, founder and CEO of Health Finance Institute, a U.S.-based nonprofit focused on closing the financing gap for NCDs. "We don't have enough data to show that a market can exist, and we don't have the necessary medicines and commodities to meet the demand."

In subsequent sessions, panelists presented potential solutions and innovations to address NCD supply chain challenges. These included the establishment of a monitoring system for pharmacies to track the availability of hypertension medications in Senegal, a diabetes care pack piloted in Kenya, and an NCD forecasting initiative undertaken in Kenya and Uganda.

"People are bringing more and more innovative ideas, and lots of research findings have been reported at the summit showing that perhaps Africa is not so much left behind," said Nathaniel Boso, director of CARISCA and dean of the business school at KNUST. "There are things we are doing in unique ways that the rest of the world might want to learn from."

## ADVANCING SCHOLARSHIP WITH A PAPER DEVELOPMENT WORKSHOP

The day before the summit opened, CARISCA held a paper development workshop where doctoral students and junior faculty received individual feedback from senior faculty and journal editors. It was the first time such an event was held at the KNUST Business School.

The workshop's purpose was to help PhD students and junior faculty improve their drafted research papers to better attract interest from top journals. Participants said they appreciated the one-on-one interaction, openness, generosity and humility of the senior professors.

"The workshop was a wonderful opportunity to learn from top supply chain scholars to enhance my research skill," wrote one participant in a follow-up survey.

Some of those top scholars traveled nearly 8,000 miles to participate in the workshop and summit. Along with Rogers, three senior technical advisers on the CARISCA team based at Arizona State University—Thomas Choi, Mohan Gopalakrishnan and Adegoke Oke—led small-group sessions at the paper development workshop.



Mohan Gopalakrishnan, left, works with Priscilla Asamany, a CARISCA PhD student, during the Paper Development Workshop. (Photo by Fondjo Images)

Also traveling from the United States to attend the summit in person were keynote speaker Lisa Ellram, a Distinguished Professor at Miami University of Ohio, and presenters Ron Lembke, chair of marketing at the University of Nevada, Reno, and James Roh, a professor at Rowan University.

Presenters hailed from points all across Africa as well. From the University of Pretoria in South Africa, Helena Barnard gave the opening keynote address.



Dr. Ephantus Maree, head of Noncommunicable Diseases for the Kenya Ministry of Health, was one of the invited session panelists, along with Bernard Asamany, a deputy director in the Ghana Health Service.

“The research summit was truly a global event,” said Rogers. “We had folks from a lot of the continents in the world attending. We were happy to welcome many companies and NGOs as well.”

### DISSERTATION AWARDS COMPETITION

In addition to providing emerging scholars with the opportunity to have their papers reviewed during the paper development workshop, the summit also included a PhD Dissertation Competition. Its purpose was to showcase the best logistics and supply chain management PhD research projects being carried out in African higher education institutions.

In February 2022, CARISCA invited entries from PhD candidates who would have defended their proposals by the time of the conference or were close to the final submission or defense of their thesis. Entries came from students in Egypt, Ghana, Kenya, Nigeria, South Africa and Ethiopia.

The submissions were judged based on originality, theoretical foundation, methodological foundation, implications for Africa and quality of writing and structure.

The top three finalists presented their research at the summit, and the winners were announced at the conference dinner the following day. Taking the top spot was Kelvinne Mocke from the University of Pretoria for his dissertation on “Investigating Development of Logistics Capabilities from a Resource Orchestration Perspective.”

### 2023 SUPPLY CHAIN RESEARCH SUMMIT

More than 94% of attendees who completed an evaluation of the 2022 summit said they plan to return for next year's conference. It will be held June 25-27, 2023, in Ghana's capital, Accra. The theme is Africa's Supply Chains and the Future of Work.

“I thought this year's summit was really successful, and I am excited about both what happened and what we will continue to do together,” said Rogers.



CARISCA Executive Director Dale Rogers speaks with conference attendees Huda Hodzi Ahmed and Ethel Boadi. (Photo by Immanuel Offei)

Added Boso, “CARISCA and the Supply Chain Research Summit have been able to get the world to appreciate the importance of Africa in a global supply chain system. Next year, we will be moving to Accra, at the heart of Ghana, and we will be having conversations around what are the key set of skills that people need to be able to succeed in the supply chain system of the future.”

Rogers agrees that Africa is and will continue to become more important in the global supply chain. He foresees the continent as a global center for manufacturing and processing.

“It's been predicted that the second half of the 21st century is going to be the African century,” he said. “I've been a professor for 33 years, and I've gotten to do a lot of different things, but this might be the most important project I have ever worked on.”





Sherwat Elwan Ibrahim, a member of CARISCA's Academic Board, announces Adeline Angkosaala as first runner up in CARISCA's 2022 PhD Dissertation Awards Competition.

## PhD Student Adeline Angkosaala Overcomes Obstacles to Become Educational Role Model

When CARISCA director and KNUST Business School Dean Nathaniel Boso is asked how he gets so much accomplished, he gives credit to his former administrative assistant Adeline Angkosaala. He describes her as “very efficient, highly organized, ethical and kind.”

“She made life easier for me as a dean because I did not have to struggle to retrieve information and get things done. I had a capable assistant,” Boso says.

Over time, he observed that Angkosaala was much more capable than even the most able administrative assistant. He believed she had the potential to become a fellow faculty member and contribute to knowledge.

“Adeline has an exceptional cognitive capacity, excellent understanding of contemporary topical themes in organizational leadership, and strong writing skills,” Boso says. “I made it clear to her that she had a gift of academic excellence that she should put to greater use to advance the well-being of humankind.”

After some persuading, Angkosaala took that advice. She now expects to graduate from KNUST in November with a PhD in organizational leadership. As further evidence that Boso judged her correctly, Angkosaala took second place in the PhD Dissertation Awards Competition at CARISCA's 2022 Supply Chain Research Summit in June.

“I was not surprised at all because I knew she was someone with exceptional talent,” says Boso. “I reminded her at the summit dinner that she had just bagged one piece of evidence to demonstrate her academic success.”

### The turning point in the family

For her part, Angkosaala had always aspired to higher education, but she encountered many obstacles along the way. At age 9, she was sent to live with and care for her grandparents in the north. She stayed with them until she was 15 and overheard plans to have her married off.

“I was not interested,” she states. “I wanted to pursue my education. So I had to run all the way, without even taking any of my belongings, back to my parents.”



There, she finished junior high school but could only go on to high school because her mother asked friends to loan money toward the fees. Her father did not support her continued education.

“He said I will just end up in my husband’s house, and he is not going to benefit in any way,” says Angkosaala.

But she was determined to get an education. Her three older siblings had missed out on that chance when their father went into hiding for nine years to avoid arrest over a story published in the newspaper he edited. He was even declared dead.

Adeline was born after he reappeared and rejoined the family. Three other siblings soon followed.

“I said I would be the turning point in the family,” Angkosaala recalls. “I can’t let all of us just be completely illiterate. I have to be the one who at least leads the way so that those following me can also see the benefit in education.”

### **A true reflection of female resilience**

After completing secondary school, Angkosaala did not have the money to continue her education, so she got a job teaching at a primary school. Over two years, she saved enough to enroll at Kumasi Polytechnic, where she earned her higher national diploma in secretaryship and management studies.

Angkosaala subsequently joined KNUST, where she has worked in administrative assistant roles for 16 years while earning her bachelor’s, master’s and doctoral degrees. She has also raised two daughters largely on her own after her husband, whom she married at 26, left the family to seek his fortunes in the U.K.

Upon graduation this fall, she hopes to stay at KNUST in a lecturer role and then rise through the academic ranks. Her research interest is in green leadership behaviors of logistics and transport organizations.



**Adeline Angkosaala**

Angkosaala says she wants to conduct research to help minimize the transportation industry’s negative effects on carbon emissions.

“This work is going to assist policymakers to know the sort of vehicles and machinery they have to choose for their operations and even how to use them on a daily basis,” she says.

Dean Boso, her former boss, believes that Angkosaala’s impact will extend well beyond her field of study.

“Adeline’s life experience is a true reflection of female resilience in a turbulent and male-dominated environment,” he says. “Young girls growing up in Ghana’s and Africa’s complex cultural settings can look at her experience and achievement as a motivation to be strong and withstand difficult conditions.”

Angkosaala explains her accomplishments this way: “It’s all about determination and perseverance. I knew where I came from, and for somebody to see the desire in me and the capabilities that I can do it, I needed to prove to them that I *can* do it.”

**“I have to be the one who at least leads the way so that those following me can also see the benefit in education.”**

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# CARISCA Updates



Professor Samuel Gbadebo Odewumi, dean of the School of Transport at Lagos State University, speaks at CARISCA's Affinity Group meeting.

## Improving transport systems, breaking gridlock

### CARISCA hosts second Affinity Group: transport and logistics experts gather in Nigeria to discuss improvements for urban transport systems

CARISCA aims to produce locally relevant research that significantly improves the efficiency and effectiveness of supply chains in Ghana and across Africa.

Stakeholder engagement is a crucial activity for CARISCA. It creates a platform for supply chain professionals to voice their challenges and share their ideas on making the supply chain more efficient.

One way CARISCA engages with stakeholders is through Affinity Group meetings. These meetings are opportunities for the center to interact with professionals working in a specific sector of the supply chain, with the goal of producing locally relevant solutions.

In August 2022, CARISCA hosted its second affinity group meeting, with transport and logistics experts in Nigeria. The topic of discussion: "The Impact of Urban Transport Systems on Fast-Moving Consumer Goods (FMCGs) Supply Chains."

Although CARISCA is based at Kwame Nkrumah University of Science and Technology in Ghana, its focus extends to all parts of Africa.

"CARISCA does not have Ghana in its name but rather Africa," said Adegoke Oke, one of CARISCA's senior technical advisors based at Arizona State University. "That's one of the reasons we are here today. CARISCA intends to be a Pan-African initiative."

The event had four presenters. They spoke on transport systems in Lagos state; city logistics and last-mile delivery in Lagos; transportation planning, policy and regulations; and technology in FMCGs.

"The topics of discussion are of great interest," said Abdul Muntaka, a CARISCA senior technical advisor based at KNUST. "The presentations kept everyone in their seats. Everyone at the event needed a solution to the challenge; these were academicians, policymakers, regulators and professionals."

### NEXT STEPS: MAKING POLICY CHANGES

After in-depth discussions at these stakeholder meetings, CARISCA senior technical advisors and research faculty work hand in hand to provide solutions to the challenges identified.

CARISCA team members will collaborate with faculty from the Lagos State University School of Transport and the Lagos Business School in Nigeria to produce a practitioner paper on how the transport systems in the country can be improved.

"This report will enable policymakers to see the possible solutions that, at the end, will bring the change we are all looking for," said John Serbe Marfo, senior technical advisor and leader of CARISCA's stakeholder engagements.



Transport and logistics experts gather in Lagos to discuss improvements to Nigeria's urban transport systems.

## Distinguished Lecture Series

CARISCA hosts a distinguished lecture series six times a year to provide access to inspiring role models, the latest ideas and approaches in supply chain research, and practical guidance for conducting and publishing research.

### DO SUSTAINABILITY AND RESILIENCE GO HAND IN HAND?

#### THE CASE OF PENNSYLVANIA DAIRY FARMERS



Veronica Villena

The COVID-19 pandemic has created major supply chain disruptions, forcing managers to focus their attention on short-term survival. A study of Pennsylvania dairy farmers suggests that now is the time to reinforce sustainability investments for dairy supply chains to better navigate future disruptions.

Veronica Villena, an associate professor of supply chain management at Arizona State University, conducted the study. She presented her findings to KNUST faculty and graduate students on June 16, 2022. In August, Villena won the Distinguished Award for Responsible Research from the Academy of Management for her project.

Villena conducted two empirical studies. A qualitative study revealed that dairy farms that pursue short- and long-term goals and manage diverse stakeholder tradeoffs are well equipped to be more resilient. The second, a quantitative study, tested the propositions emerging from the first study in a large-scale survey involving 588 Pennsylvania dairy farms.

Both studies suggested that farms that have invested in environmental, labor and animal welfare practices are more likely to continue their operations and implement an emergency plan that allows them to run safe operations. Interestingly, the researchers found that large and women-operated farms benefited more from these investments than small farms and those operated by men.

Villena said the study contributes to three research streams. It contributes to the sustainability-resilience research literature by showing how investing in long-term sustainability practices builds resilience—perhaps one of the most important traits for dairy farms today. It also contributes to agricultural research by highlighting two prominent, albeit vulnerable, groups: small-farm operators and women farmers.

Finally, the study contributes to operations management by responding to an important call to investigate the factors contributing to small- and medium-sized enterprises' resilience and the role of women in a male-dominated industry.

### THE JOURNEY TOWARD SUPPLY CHAIN MANAGEMENT PROFESSIONALISM

On Sept. 2, 2022, the chairman of the Kenya Institute of Supplies Management (KISM), John Karani, shared lessons from the institute. KISM's mission is to train, register, license, discipline and regulate supply chain management practitioners throughout Kenya.

Karani is among the most seasoned Pan African supply chain practitioners. He led supply chain management across Africa for major blue-chip multinationals, including Coca-Cola, for over 27 years.



John Karani

Karani is passionate about entrenching integrity and credibility in the supply chain management profession. He also is committed to developing and inspiring the next generation of professionals.

In his lecture, Karani provided an overview of how the supply chain management profession has evolved in Kenya since 2007, when KISM was created. Starting as a transaction-driven discipline, it is evolving into one driven by business strategy.

KISM's vision is to develop empowered, competent and ethical supply chain management practitioners. The field needs "big-picture, entrepreneurial thinkers," Karani said.

The top challenges the profession faces are corruption and stakeholder perceptions, he noted. Corruption arises from having multiple stakeholders with vested interests. It needs to be countered by strengthening values and ethics within the profession, he said.

Stakeholder perceptions are a top challenge because less than 10% of stakeholders and chief financial officers view supply chain management staff as leaders, according to a survey Karani cited. Many stakeholders view the procurement department as "paper-pushers."

"We need to position ourselves as strategic rather than tactical," Karani said. "I look at this as a ministry. What legacy do we want to bequeath to the next generation? Let's elevate our game."



## ACADEMIC BOARD MEETS TO BRAINSTORM IDEAS FOR CARISCA ACTIVITIES

In fall 2021, CARISCA formed an Academic Board to advise and support our research capacity-building efforts. Board members are drawn from CARISCA's senior technical advisor networks and include scholars from African and non-African countries.

The Academic Board met for the second time on Aug. 30. Leading supply chain scholars from Africa, Brazil, Ireland, Switzerland and the U.S. attended the virtual meeting.

"We're thrilled by the number of scholars from around the world that have been willing to help us out with CARISCA," said Dale Rogers, the project's executive director, at the start of the meeting. "There are more reasons than ever to care about Africa. It's a great time to be doing what we're trying to do there."

Following a presentation on CARISCA's recent accomplishments and challenges, members brainstormed on ways to close the gaps in a few of the capacity-building activities undertaken this year. These included research projects and workshops, the annual Supply Chain Research Summit, and PhD student success and supervision.

Board members self-selected into one of the three capacity-building activities and then broke into groups to share ideas for strengthening that activity. After a detailed discussion, the groups came back together to report on their ideas.

As a next step, board members volunteered for one of three task committees to follow up on the ideas. These committees will present recommendations at the next Academic Board meeting in February 2023.

## PROFESSIONALS LEARN SUPPLY CHAIN DIGITALIZATION AT CPD COURSE

More than 75 supply chain practitioners came together virtually for two days at the end of August to learn about supply chain digitalization. The occasion was CARISCA's fourth continuing professional development course (CPD).

Through CPD courses, CARISCA aims to enhance professional skills improvement of supply chain practitioners in key sectors in Africa, leading to better supply chain outcomes. The courses are designed to be innovative, practical and evidence-based.

The supply chain digitalization course was divided into four modules:

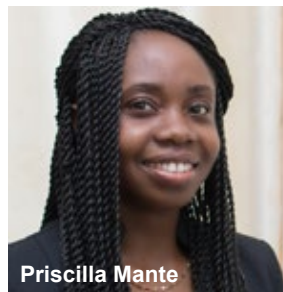
- Building blocks of the digital supply chain
- Digital supply chain network
- Advanced analytics in supply chain management
- Leverage enablers for supply chain functions

Day 1 included short video presentations on different approaches to supply chain digitalization, followed by breakout sessions for group tasks. On Day 2, participants received hands-on training with Power BI, an interactive data visualization tool.

In a post-event survey, participants shared how they intend to apply what they learned. One attendee said he would use what he learned to solve procurement and supply chain issues. Another said that the training would help in executing work tasks with ease, especially analyzing data to make an informed decision.

More than 80% of the attendees were members of the Health Services Supply Chain Practitioners Association of Ghana. Women comprised 40% of the participants.

## PRISCILLA MANTE NAMED A RISING STAR



Priscilla Mante

Priscilla Mante, a member of CARISCA's research faculty, has been recognized as a Rising Star by the International Pharmaceutical Federation's Women in Science and Education initiative (FIPWiSE). She is among a group of 20 women pharmaceutical

scientists and pharmacy educators from 14 countries named to the inaugural list of Rising Stars.

The recognition highlights women in pharmaceutical sciences and education for their achievements, innovations and significant impacts; for being pathfinders in their fields, and for going "above and beyond" for the pharmacy profession.

Mante is a senior lecturer in pharmacology at KNUST, where she earned her BPharm and PhD in pharmacology degrees. She specializes in neuropharmacology and aspires to find a cure for epilepsy.

Read more about the FIPWiSE Rising Star Award and Mante at <https://www.fip.org/fipwiserisingstars>

Watch a video of Mante and two other FIPWiSE Rising Stars talk about their career challenges, mental health and finding their true passion:

[https://www.youtube.com/watch?v=fDDw\\_vJnLa8](https://www.youtube.com/watch?v=fDDw_vJnLa8).





From left to right: CARISCA team member Elsie Addae with CARISCA PhD scholarship students Grace Annan, Owusu Boahen, Priscilla Asamany and Priscilla Agyemang; all are KNUST alums. (Photo by Emmanuel Offei/KNUST)

## Lessons Learned: Building and Tapping into Alumni Networks

Most KNUST supply chain and information systems graduates are succeeding in the workforce, according to an alumni survey CARISCA conducted in 2021. Among the 41% of graduates who responded to the survey, 88 percent are employed full-time.

Seventy-nine percent of respondents are in a leadership role, 30 percent have been promoted since starting their job, and 15 percent are self-employed or own their own business. Seventy-eight percent of alumni said their job is closely related to what they studied at KNUST, and 19 percent said somewhat related.

Alumni also identified ways KNUST can improve the learning experience for future students. One recurring theme was to provide more hands-on learning opportunities like internships, applied projects, field trips and networking opportunities.

The survey provided valuable insights to the CARISCA project team and KNUST administrators. It added survey data to a largely anecdotal understanding of student experiences and created a benchmark for evaluating future alumni outcomes.

KNUST has adopted the survey and will use it to follow up and learn from other alumni. The university has also created an alumni committee to facilitate increased connectivity with graduates.

Insights from the survey have led to the following planned actions:

- KNUST's alumni office adopted the survey and plans to administer it annually to all KNUST School of Business students.
- KNUST will petition to replace its current thesis requirement for master's students with an applied interdisciplinary research project class that is connected with a supply chain organization.
- KNUST will invite stakeholders to discussions about the development of course content.
- CARISCA will develop business cases for students to provide insights into the complexity of supply chain decision-making.

This summer, USAID published a story on its Education Links website (<http://www.edu-links.org/>) about CARISCA's alumni survey, lessons learned from it and how KNUST is building an alumni network.

## Stay connected

If you want to learn more and receive project updates and information about upcoming events, please visit CARISCA's project website and sign up for our newsletter: [research.wpcarey.asu.edu/carisca/mailling-list](https://research.wpcarey.asu.edu/carisca/mailling-list).



Dominic Essuman with his mother after graduating with his PhD degree

## Research faculty member Dominic Essuman studies and demonstrates resilience

Dominic Essuman seems to have had a drive for education from his earliest years, although he was unaware of it, and his circumstances don't explain it. Neither of his parents, who were cocoa farmers, had any schooling.

Yet when Essuman was 7 years old, he took it upon himself to register for the new school opening in his village in western Ghana. His parents were away, so he grabbed his 5-year-old twin siblings and followed other families to the new school to enroll.

Asked what accounted for that independence and aspiration at such a young age, Essuman responds matter-of-factly.

"They announced that they'll be starting a school, and every parent should bring their kids, and my parents were not there," he recounts. "Everyone was taking their kid to the school to get registered. So we joined them. We were very young, but I can still remember that moment."

Another early memory is his mother calling the kids together every evening to read their school books. Although she didn't speak English and didn't understand what they were reading, she knew it was important to encourage their education.

"I don't know why she was doing that; it wasn't like she was learning from someone how to assist your children to learn," Essuman says. "She didn't know that, but it was a practice she adopted to make sure we were always learning."

Even so, Essuman is the only one of the nine children in his family to go on to earn a university degree. One younger brother is working toward his degree now.

### Something challenging and dynamic

Essuman says he pursued higher education at the urging of an uncle, who wanted him to become an accountant. He studied accounting and was good at it but soon abandoned it for supply chain management.

"When I got to the university, that was the first time I heard of supply chain management as a field or as a topic," Essuman recalls.



“We had a few lectures, and I began appreciating that most of the things that were taught were practical things you can easily relate to.

“Accounting tends to be very abstract, and you have to follow processes and procedures,” he continues. “I don’t like that. I want something more challenging, something dynamic.”

So Essuman completed a degree in logistics and supply chain management. He didn’t stop there, though. He also earned an MBA and PhD, all from Kwame Nkrumah University of Science and Technology (KNUST).

Now a lecturer at the University of Sheffield in England, Essuman is also one of CARISCA’s research faculty. In that role, he conducts research and promotes research-led education on supply chain management; produces abstracts, papers and other publications on his studies; and mentors other team members and students.

Essuman’s research interests center around supply chain disruptions and resilience capabilities. Those interests seem appropriate, given his educational experience. At two junctures, he had to develop his own resilience to overcome disruptions to his study plans.

After completing his MBA, Essuman wanted to pursue a PhD at KNUST but was told he would have to earn a master of philosophy degree first. Instead, he was advised to apply to the University of Leeds in England, where he was accepted and offered a scholarship.

“Unfortunately, things there didn’t go as planned,” Essuman relates.

### **A resilient, brilliant and reliable student**

After 16 months in the three-year program, Essuman had defended his dissertation proposal and was ready to go into the field to collect data. Then his PhD supervisors told him he needed to change his research topic.

“I tried working on what they suggested for two months or so,” he recalls, “but every time I met with them they tried to suggest something different. I was really stressed. It affected me emotionally. So I decided to quit the program. I couldn’t complete it.”

Feeling deflated, Essuman moved back to Ghana. There, he discovered that Nathaniel Boso had been appointed dean of the KNUST School of Business.

Essuman had first met Boso during his MBA studies, when Boso visited KNUST to run a training program. Essuman was one of only three participants in the program who completed the final assignment. Impressed by their initiative, Boso reached out to them, and he and Essuman stayed in touch.

Boso subsequently advised Essuman on his master’s thesis and recommended he apply to the PhD program at the University of Leeds, where Boso was then on faculty. When Essuman returned to Ghana, Boso offered him support to finish his PhD at KNUST.

One year later, as a newly minted PhD, Essuman joined the KNUST faculty as an assistant lecturer in supply chain management. He was promoted to lecturer the next year.

“Dominic was a resilient, brilliant and reliable student,” says Boso, “who in addition to his role as dean serves as director of CARISCA. “I was extremely impressed with the quality of his work and his willingness to learn new things, and so investing in him was definitely a yes from me. His success as an academic so far justifies my initial confidence in him as a rising star in academia.”

### **Rocky start as a researcher**

Essuman insists that his becoming an academic was not a conscious decision. He just found himself working in academia when he was offered a teaching assistant position after completing his bachelor’s degree. That position came with the

opportunity to do graduate work.

“It wasn’t a conscious decision,” Essuman says. “It wasn’t. But one thing that I like about academia, that I think is a conscious decision that I want to stick to, is research.

“I like finding explanations to why things are happening. I don’t want to take anything for granted. I want to understand why things work, how things work.

“I’m very analytical,” he adds. “And I like questioning virtually everything and even questioning myself. So it’s very inherent within me.”

After his undergraduate program, Essuman had his first experience presenting his work at a research conference. That turned out to be another test of his resilience.

**“I like finding explanations to why things are happening. I don’t want to take anything for granted.”**

“I didn’t know anything about research, but there was a research conference happening at KNUST, and I presented my undergraduate dissertation there,” he recalls. “But I didn’t receive positive feedback.”

“The feedback seemed to suggest that what I was thinking was so foolish that they couldn’t believe I was considering what I was doing as research. It took me about two weeks or so to recover. Any time I remember it, tears drop. It wasn’t a cool experience at all.”

Still, after he recovered from the harsh response to his first conference presentation, Essuman was eager to get another chance. His next experience went much better, and he has continued to improve ever since. For CARISCA’s 2022 Supply Chain Research Summit, Essuman had two papers accepted and also served as a session chair.

### Gaining an advantage

In his role as a research faculty member on the CARISCA team, Essuman has led two projects. One study is on women entrepreneurs’ resilience (see story on next page). The other is on women-owned businesses in agricultural supply chains.

He believes his experience with CARISCA helped him land his current position at a top research-intensive university in the United Kingdom. He says he was unaware of how competitive the job search was until he joined the committee that recruits new faculty.

“Then I realized it was very, very competitive,” he says. “I had to provide a very good CV. The activities I’m performing at CARISCA, I think, went into it in terms of giving me an advantage.”

Essuman says working with CARISCA also “has been a great blessing” because it allows him to interact with giants in the field whose work he previously read only in papers.

Essuman dreams of helping other aspiring researchers. He wasn’t introduced to research until the third year of his undergraduate program, and he feels that was too late.

“Waiting for students to get to the tertiary school, or even in their final year, before you introduce them to research is not good enough,” he declares. “There are some basic traits that people need who want to be good researchers.

“They need to be open; they need to learn psychology; they need to learn philosophy. There are certain things they need to know. But I didn’t get any of that.”

Essuman wants to fill those gaps for future researchers by recruiting students with interest and aptitude at the senior high school level. He will then provide them with the underpinning they need to excel as researchers when they get to college.

“In the future, I want to build a foundation that will help develop young researchers,” Essuman says. “I would love to start in Ghana, and then if it becomes successful, which I believe it will be, expand it across Africa.”

### As good as they come

Essuman already has passed along some of his research knowledge to those coming behind him. One student, William Afloe, was assigned to Essuman as his undergraduate thesis supervisor at KNUST.

Never having been exposed to research before, Afloe and another student turned in a paper that Essuman said was plagiarized. He warned the students they would have to find a new thesis supervisor if they ever did that again.

“But what he did was to take us further to explain what research is and give us a couple of articles to read and make sure we understood what we were about to do before we started the entire journey,” recalls Afloe. “And so I can say that he’s the main reason why I began to appreciate research, and supply chain research for that matter.”

Afloe recently completed his master’s thesis, which Essuman helped supervise, and plans to continue on for a PhD. He hopes to join the KNUST faculty one day. He and Essuman stay in touch.

“Once he realized that the passion to do the work was there, he tried to help in every way possible,” Afloe says. “He’s really a good person, and I’ll say I’m very blessed and privileged to have met him. Dominic is as good as they come.”



Dominic Essuman





## Building Resilience in Women Entrepreneurs

Growing up in a family with nine children in a cocoa-farming village in Ghana, Dominic Essuman is familiar with the stress of having too many mouths to feed. In population terms, it's called a "high dependency ratio" (when the non-working-age population significantly outnumbers the productive population).

"My parents were a happy couple," recalls Essuman, "but they were mostly under economic stress. Any time that we didn't have money at home, they would get angry and begin to fight. I normally tell people that if you don't have money, don't marry."

As one of CARISCA's research faculty, Essuman used that early experience to inform a study on women entrepreneurs' resilience. And he got some surprising results.

Motivated by reports of how much more the COVID-19 pandemic affected women than men, Essuman initially set out to study the resilience of women entrepreneurs and its influence on their well-being.

One of CARISCA's focus areas is access and inclusion, so the topic fits well with the center's goal of increasing the participation of women in Ghana's supply chains.

As Essuman thought through the study and began his literature review, he decided to broaden the project's scope. He wanted to look at the resilience of the business and its owner.

"The individual's resilience to adversity in life is essential, but that may not translate into their well-being when you consider entrepreneurs," Essuman realized. "I speculated that it should be rather the business that has to be resilient before the entrepreneur's well-being can be enhanced."

For the study, Essuman and his team interviewed 378 women entrepreneurs in Ghana's Ashanti Region. Each woman owns and manages an agriculture-related business employing 10 or fewer people. All participants had experienced at least one unexpected supply chain disruption in the prior six months.

"Lo and behold, the data really supported this new perspective, that the individual's resilience is necessary but not enough," Essuman notes. "The business, too, has to be resilient to supply chain disruptions. And it is the business resilience that translates into the well-being of the woman entrepreneur."

A major implication of the study is that policymakers should not necessarily focus on helping women entrepreneurs develop personal resilience. Instead, they should assist them in building resilient businesses.

"Their livelihood depends on the business," Essuman explains. "So if disruptions occur, and the business cannot withstand the impact, what will they live on?"

Something else the study revealed ties back to the dependency ratio. It turns out that the impact on well-being from owning a resilient business is not the same for all women entrepreneurs. It is stronger if a woman has more people depending on her.

"It's like a psychological thing," Essuman says. "People normally begin to appreciate the value of the resources they have when there's an actual need for it."

In light of his research findings, Essuman has developed a three-step framework for building resilience:

### STEP 1: MENTAL CONDITIONING

Entrepreneurs should prepare their minds to accept that they operate in highly disruptive environments. Because external support resources are in short supply or inaccessible, business owners are responsible for their own success.

### STEP 2: NURTURE AND SUSTAIN INDIVIDUAL COPING AND RECOVERY CAPABILITIES

View threats as challenges and opportunities; focus on problem-solving; celebrate each little success; maintain hope; learn from your experiences surmounting difficult moments.

### STEP 3: LEVERAGE INDIVIDUAL COPING AND RECOVERY CAPABILITIES

Recognize your coping and recovery capabilities as critical for your business to thrive during supply chain disruptions and act quickly when disruptions occur.



Dale Rogers presents at the 2022 CSCMP Learning from the Giants Session. Photos by Inbound Video Pros courtesy of CSCMP.

## Dale Rogers Invited to Deliver ‘Learning From Giants’ Lecture

CARISCA Executive Director Dale Rogers was the invited speaker for a special session titled “Learning from the Giants” at the Council of Supply Chain Management Professionals’ 2022 EDGE Conference. His talk, on Sept. 19, was part of the conference’s Bowersox Doctoral Student Symposium.

The Academic Strategies Committee of CSCMP annually selects someone who has meaningfully impacted the field and honors that person with the Learning from the Giants session. The invited speaker has the floor for an hour to share lessons learned “from a most admirable career.”

Donald J. Bowersox, for whom the symposium is named, is often referred to as the “grandfather of logistics.” He was one of the most well-known and influential supply chain management academics in the world. Rogers studied under Bowersox at Michigan State University and co-wrote two books with him.

“I’m very grateful for this honor,” said Rogers. “It’s a big deal to me.”

In 2021, Rogers received CSCMP’s Distinguished Service Award and joined his mentor, Bowersox, in the Supply Chain Hall of Fame.

“And this year, to get this, in a lot of ways is a much bigger deal,” said Rogers at the event. “I don’t know if there weren’t any other candidates or something, but I’m very grateful to get the pick.”

Following are excerpts from Rogers’ talk to up-and-coming supply chain academics:

### ON WHY NOW IS A GOOD TIME TO BE A SUPPLY CHAIN ACADEMIC:

This is such a great time to be in supply chain in academia. You guys are coming into this field at a time when people kind of know what it is.

I remember sitting on an airplane around the age that you guys are now, and I told the lady sitting next to me I was a logistics professor. And she said, “I’ve always loved languages.”

I think you’re coming into this profession at a really good time. The world understands what supply chain is a little bit. They know it’s hard to do. They know that it is an important economic variable.

I mean, if you look at the cause of inflation right now, it’s really mostly supply-based inflation. It’s not the traditional 1970s demand-based inflation. That gives you a lot of opportunities to do a lot of different things.



## HOW THE FIELD HAS CHANGED SINCE ROGERS WAS A NEWLY MINTED PHD:

It's way harder to publish than it used to be. I mean, I'm an old man and it feels to me like I've lost all ability sometimes. You know, the first 20 years of my career I got a rejection once. And in the last 13 years of my career, it feels like I've gotten about a thousand.

You guys are competing when you go into your jobs and even right now, you're competing with the world. When I was a brand new academic, we were competing against a few people in the U.S. and a few in Europe and I don't think hardly anybody else.

But now the whole world is doing supply chain. And they want to be in the same journals that you guys are in, that you guys need to be in to keep your job, and also get a job. So there's tremendous pressure.

## ON WHAT YOU SHOULD DO TO BE SUCCESSFUL IN ACADEMIA:

You need to do some things that are likely to get you published. But you also should be trying some things that maybe are really innovative and could make you famous someday. You know, the reviewers only understand what they understand. You can't be mad at reviewers when they reject your paper. You know the old saying, "If they don't get it, then you didn't explain it well enough."

When Bruce Springsteen was just a New Jersey bar band guy, he didn't only sing other people's songs. He did his own stuff. The guys who sang other people's songs in New Jersey bar bands, what are they doing now? They're probably gray-haired guys, balding with a ponytail, still singing in New Jersey bar bands. So the way you get to be something special in this profession is when you take some chances.

You need to look for opportunities every time you go somewhere. When you come to CSCMP, talk to people both on the academic side but also talk to business people. They're desperate for academic friends. They want to know bright young faculty. They want you to help them figure out problems.

The problems that companies and governments are dealing with today are more complex than they've ever been before. What do we do as we're sort of undoing the global supply chains that we've built over the last 70 years? What's the next step? Companies are really looking for help trying to figure out where to go.



And if you've heard anything I've said today, I think you should try to be valuable. Do stuff that is going to be useful and valuable.

And to do that you've gotta know as much as what business people know. And you've gotta know more than what other academics know about something. And you should be strategic in how you pick those topics. Everything can be a stepping stone if you do it right.

I didn't come into this profession really having a clear vision of what I was going to do. I just had Bowersox' voice in my head saying, 'Rogers, you're running out of runway. Get stuff done. Move quickly.' And I still hear his voice in my head every single day, even though he died in 2011.

## ON WHY BEING A SUPPLY CHAIN PROFESSOR IS A GREAT CAREER:

It's such a great career. This is one of those jobs where you get to make your own path, *if* you make your own path. You get to invent stuff and you get to try things. You're not just stuck. I mean, you've got to do the work.

You have to publish. The publishing expectations are greater than they've ever been.

But having said that, it's such a great life. Because what you're really being paid to be is curious. You need to have a great sense of curiosity. You need to look for interesting problems and truths in a lot of places.

I mean, every time I go to the grocery store, I think, 'Hmm, this is an interesting deal.' Every time I go to another country I go to the grocery store.

This job is entrepreneurial. I've always thought I should be an entrepreneur, in this professor's job. My job is to do research, but how I generate that research can be in a lot of different ways. One thing that this profession rewards is innovation. It really does.

One of the other things that's cool about this profession is you're surrounded by people that it's quite likely you're gonna know for the rest of your life. You get to be with people who will be your friends maybe for the next 40 or 50 years.

## CARISCA gears up for year three

Oct. 1, 2022, signaled the start of CARISCA's third full year as a capacity-building project to create a supply chain research center at Kwame Nkrumah University of Science and Technology in Kumasi, Ghana.

Since mid-2020, supply chain faculty from Arizona State University have been working closely with KNUST's supply chain faculty to achieve four aims:

1. Broaden KNUST's supply chain research capabilities,
2. Build partnerships with stakeholders and industry partners,
3. Enhance the supply chain curriculum,
4. Promote access and inclusion for women across the supply chain from student to leader.

The third year of five-year projects like CARISCA is when most of the progress is realized. From the beginning, ASU and KNUST envisioned a gradual hand-off in year three that puts KNUST in the lead for most activities, with ASU playing a supporting role.

CARISCA's year-three work plan includes a continuation of multiple year-one and year-two activities including:

- Advancing Women in Supply Chain webinar series
- Annual Supply Chain Research Summit
- Biannual Faculty Research Workshops
- Biannual stakeholder meetings
- Bimonthly Distinguished Lecture series
- Quarterly Ghana Logistics Managers Index
- Scholarships for promising graduate students
- Sharing lessons learned through project implementation with other international development projects



Emmanuel Quansah, with microphone, leads CARISCA's Logistics Managers Index activity.

New in year three, CARISCA is planning a train-the-trainer series for women who are supply chain leaders in their communities, especially in the agriculture and health care sectors. In year four, these new trainers will put their skills to work training a larger cohort of female entrepreneurs.

Also in year three, CARISCA will launch a continuing professional development series to address the training needs of professional bodies, governmental entities and private-sector businesses.

Supporting CARISCA's activities are three advisory groups: the CARISCA Advisory Board, the CARISCA Academic Board and the Partnership Coordination Committee. These groups comprise international academic, private sector and government partners who advise the CARISCA project in a number of ways.

See the calendar below for a schedule of upcoming events, and subscribe to the CARISCA mailing list ([research.wpcarey.asu.edu/carisca/mailling-list](https://research.wpcarey.asu.edu/carisca/mailling-list)) to receive future issues of this newsletter.

## CARISCA's Upcoming Events

- Distinguished Lecture Series, "Working with Industry on Supply Chain Sustainability Issues," Oct. 20, 2022
- Advisory Board meeting, Oct. 26, 2022
- Advancing Women in Supply Chain webinar, "Embracing Risk in Supply Chain Finance: A Deep Tier Impact Approach for Agricultural Value Chains," Nov. 18, 2022
- Supply Chain Action Network (SCAN) meeting, Nov. 29, 2022
- Distinguished Lecture Series, Dec. 8, 2022

Event dates and details are subject to change. Visit [research.wpcarey.asu.edu/carisca/news/upcoming-events](https://research.wpcarey.asu.edu/carisca/news/upcoming-events) for the latest information.