

CARISCAREPORT

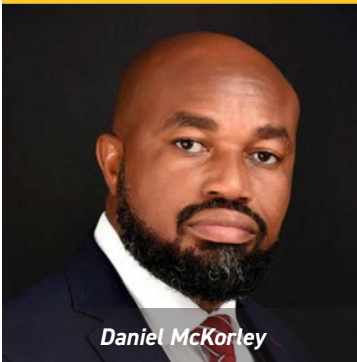
Center for Applied Research and Innovation in Supply Chain – Africa

2023 • ISSUE 8



Join us for the **2023 Supply Chain Research Summit** **JUNE 20-22, 2023**

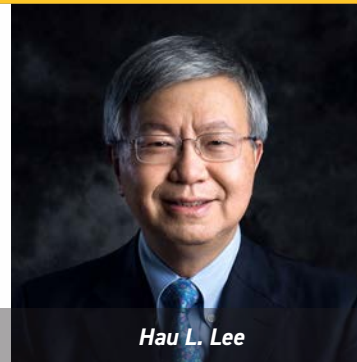
KEYNOTE SPEAKERS



Daniel McKorley



Gayani de Alwis



Hau L. Lee



Lebogang Letsoalo

CARISCA's third annual Supply Chain Research Summit kicks off June 20, in Ghana's capital, Accra. More than 750 people from 38 countries have registered to attend the summit, either in person or virtually.

The theme of this year's conference is "Africa's Supply Chains and the Future of Work." Nearly 90 supply chain students, scholars, practitioners and policymakers will present papers in five tracks over three days. The conference also will feature four keynote speakers, a journal editors panel, a PhD Dissertation Awards competition, remarks from Ghana's Minister of Health and much more.

The summit is central to CARISCA's goal to put Africa's supply chain research on the map and strengthen African

supply chain capacity. We achieve this by bringing together academic and non-academic researchers and public, private and civil society organizations to create an ongoing dialogue addressing complex supply chain challenges in Africa.

"The CARISCA Research Summit is a great experience for attendees who gather every June to talk with leading scholars about research and where the field is headed," says Dale Rogers, CARISCA's executive director. "Plus, it's fun."

If you have not yet registered, don't miss this opportunity to learn from and network with leading supply chain experts. In-person registration is closed, but you can attend all sessions virtually. The conference cost is fully covered, courtesy of CARISCA.

Learn more and register at carisca.knust.edu.gh/summit2023/ 



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KWAME NKRUMAH UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Meet the keynote speakers:

JUNE 20

DANIEL MCKORLEY

“Challenges and Key Success Factors in Ghana’s Logistics Sector”



Daniel McKorley is the founder and executive chairman of the McDan Group of Companies, a Ghanaian conglomerate. McDan delivers a broad spectrum of services including shipping and logistics, oil and gas, aviation, construction and hydro, mining, private security and agribusiness.

McKorley is the first Ghanaian to own and operate a private jet terminal as well as the largest salt mine

in Africa. He has won multiple awards for his entrepreneurial ventures, among them being named Outstanding C.E.O of the Decade by the Entrepreneurs Foundation of Ghana.

An avid promoter of youth entrepreneurship, McKorley pioneered McDan Youth Connect and the McDan Entrepreneurship Challenge to empower young people to become self-reliant. He also provides humanitarian support to needy communities through the McDan Foundation.

JUNE 21

HAU L. LEE

“Frontier Research in Frontier Land”



Hau L. Lee is the Thoma Professor of Operations, Information and Technology at the Stanford Graduate School of Business in the U.S. He is also faculty advisor for the Stanford Institute for Innovations in Developing Economies and a co-director of the Stanford Value Chain Innovation Initiative.

A member of the National Academy of Engineering and widely published scholar, Lee has earned several notable distinctions for his research. These include

authoring one of the 10 most influential papers in the history of Management Science, earning the Wickham Skinner Best Paper Award from the Production and Operations Management Society, and being named second place winner of the McKinsey Award for the Best Paper in Harvard Business Review.

In addition to his scholarly achievements, Lee has consulted extensively in the public and private sectors. He also is a co-founder of DemandTec, a pioneering leader in retail pricing and commerce solutions, which went public in 2007.

JUNE 21

GAYANI DE ALWIS

“Role of Women in the Future World of Work”



Gayani de Alwis is the global chairperson of Women in Logistics & Transport (WiLAT), the women’s forum of the Chartered Institute of Logistics and Transport (CILT). With over 3,250 members, WiLAT seeks to be the most sought-after organization for advocacy and empowerment of women in logistics, transport and supply chain management.

De Alwis began her career as an auditor at Unilever, one of the world’s largest consumer goods companies. Over nearly two decades there, she rose to become director of customer service and a member of the management committee for Unilever Sri Lanka.

During her Unilever career, she became the first female director for supply chain and first global lead auditor from South Asia. A past president of CILT, de Alwis is also the only person in Sri Lanka who is a fellow of both CILT and Institute of Supply and Materials Management.

JUNE 22

LEBOGANG LETSOALO

“Leveraging Africa’s Competitiveness Through Efficient Supply Chains”



Lebogang Letsoalo is founder and chief executive officer of Sincpoint, an organization focusing on sustainable supply chain consulting and advisory solutions. She also is founder of the African Women in Supply Chain Association (AWISCA), which is aimed at driving career awareness, youth development and capacity building in supply chain management.

Prior to founding Sincpoint, Letsoalo was vice president of supply chain for Sasol, a global chemicals and energy

company. In total, she has over 20 years of experience on end to end supply chain within the energy, chemicals, construction, transport and mining industries.

Letsoalo has been profiled as one of the 100 most influential women in supply chain and has earned numerous other recognitions for her leadership and mentoring. In addition to her role at Sincpoint, she serves on multiple boards and works to build sustainable, impactful supply chains through frequent conference presentations and media appearances.

Other don’t-miss highlights:

JUNE 20

Panel on Publishing in Top Journals in Operations and Supply Chain Management



CONSTANTIN BLOME

Co-editor in chief, International Journal of Operations and Production Management



GLENN RICHEY

Co-editor in chief, Journal of Business Logistics



WENDY TATE

Co-editor in chief, Journal of Supply Chain Management

JUNE 21



Conference dinner featuring remarks by Ghana’s Minister of Health, Kwaku Agyeman Manu, and a performance by Ghana Dance Ensemble

JUNE 22



Session on the Ghana Logistics Managers Index and a sneak peek at the second quarter 2023 results

CARISCA SCHOLAR LEARNS LESSON IN SUCCESS

Many people take a lifetime to understand what really matters in life. **Yussif Iddrisu** learned it early.

“My own perception of success is, you have the ability to help somebody grow,” says Iddrisu, sales and marketing manager for Kasima, an agricultural supply chain company. “That is where inner peace lies.”

Iddrisu graduated from KNUST in 2022 with a master’s degree in logistics and supply chain management, with support from a CARISCA scholarship. He credits CARISCA with helping to form his attitude toward success.

“But for CARISCA, I wouldn’t be here,” says Iddrisu, referring to his ability to pursue his chosen career in business. “It has opened so many doors for me. CARISCA has taught me a lesson to give back to society.”

A desire thwarted, then rekindled

Raised in a polygamous family in Tamale, Ghana, Iddrisu was the youngest of nine children. Financial difficulties prevented him from completing his secondary education at one of Tamale’s top high schools. As a result, he had to switch from studying accounting to auto mechanics.

From there, he went to a teacher training college and then worked as a teacher for about five years. Afterward Iddrisu enrolled at KNUST for an undergraduate degree in sociology.

Unable to land a job in social work after graduation, Iddrisu found a position as a procurement assistant for a small company in Accra.

“That was where my desire to go into the business rekindled,” says Iddrisu. “I started to develop a love for procurement – or supply chain – as a profession.”

“**The long and short of it is that CARISCA has taught me a lesson to give back. That is what is driving me.**”

After working at the company for 16 months, Iddrisu returned to KNUST to pursue his master’s degree. Following his admission, he received an email about scholarships available through CARISCA.

He quickly applied, was called for an interview and earned a scholarship to help cover tuition expenses. In addition to the financial support from the scholarship, Iddrisu has taken advantage of many CARISCA programs.

Photo courtesy of Yussif Iddrisu



▲ **Yussif Iddrisu**

“Any training, workshop, anything that has to do with education as far as CARISCA is concerned, if it is within my means, I register,” says Iddrisu. “They have helped me in dealing with the supply chains that I am involved in, in terms of how to motivate a better outcome. It is so beneficial.”

A drive to give back

After teaching and getting his bachelor’s degree, Iddrisu felt that anything less than a professional career was unacceptable. He feels fortunate that the CARISCA scholarship and programming has enabled him to embark on a career in supply chain management.

He has become a member of the Chartered Institute of Procurement and Supply and is pursuing his certification. Iddrisu’s long term goal is to be a supply chain consultant.

Along the way, he hopes to help others who could use a hand up like he was given. He is especially interested in improving the lives of women who work in the agriculture industry.

“Becoming a supply chain consultant would pave the way for me to be able to help the needy in the society, especially those who cannot access education,” says Iddrisu. “The long and short of it is that CARISCA has taught me a lesson to give back. That is what is driving me.”

NEW PROJECT DIRECTOR TAKES HELM



CARISCA welcomed a new project director to the team this spring, as **David Schlinkert** was promoted into the role in April. He previously served as the director of monitoring, evaluation, research and learning.

As project director, Schlinkert is responsible for the overall management, operations and coordination of CARISCA, through the term of its funding by the United States Agency for International Development. He is the primary point of contact for all major partners and stakeholders.

“I’m really excited about honing in on what is working with CARISCA, while at the same time being open to innovation, new ideas and experimenting,” says Schlinkert. “I believe we are well-positioned to have a big impact, as we have a lot of keen academic minds on our team.

“With the team’s insights on supply chains in Africa, they can drive the way the industry works and how future supply chain management professionals are trained.”

Before joining CARISCA at the start of the project in June 2020, Schlinkert was a senior policy analyst at Arizona State University. Prior to that, he was a research scholar for USAID Global Development Lab, working on a project in Colombia.

“I’m grateful to have had the experience of being a USAID research fellow,” says Schlinkert. “It exposed me to a lot of the work that USAID does and how they run projects. I really believe in their mission and values and what they’re trying to accomplish around the world.”

Schlinkert is an avid adventurer and learner and was fortunate to spend several years traveling the world while working and volunteering. He spent six months sailing around the Virgin Islands after buying a sailboat and teaching himself to sail. He also learned Spanish while backpacking for 18 months by bus from Argentina to Arizona.

After his travels, Schlinkert spent three years working as an intensive case manager at the International Rescue Committee. The humanitarian aid organization resettles and serves newly arrived refugees in the U.S.

“Throughout my travels, the international community was so kind to me, and I’ve tried to give back in any way I can,” says Schlinkert. “In addition to surrounding myself with family and friends and building community, it has really become one of my biggest passions in life.”

Schlinkert is a three-time graduate of ASU. He holds a PhD in transborder studies, master’s degree in public administration and a bachelor’s degree in journalism and mass communication.

CARISCA ACHIEVES ‘HUGE VICTORY’ WITH JOURNAL PUBLICATION

CARISCA achieved “a huge victory” this spring, in the words of executive director Dale Rogers, with a publication in one of the world’s leading supply chain journals. The Journal of Business Logistics published a paper by a CARISCA research team online May 1. It will be in the June print edition.



▲ **Dominic Essuman**

The article, “In search of operational resilience: How and when improvisation matters,” advances understanding of the determinants of resilient operations and supply chains. Lead author **Dominic Essuman**, a CARISCA research faculty member, presented an early version of the paper at the 2022 Supply Chain Research Summit.

“Improvisation is a topic that is intensely important in times of new opportunity as well as disruptive crisis,” says Glenn Richey, the journal’s co-editor in chief. “Dr. Essuman and his team’s timely and timeless work will enrich emerging theoretical perspectives toward explaining operations and supply chain resiliency. Perhaps we will see a new stream of research on improvisation?”

As noted in the article, improvisation refers to the degree to which firms

engage in spontaneous and creative actions to find new ways to achieve an objective. The researchers examined whether different dimensions of improvisation may have different effects on operational resilience under varying firm situations.

“Creative improvisation provides novel solutions, while spontaneous improvisation provides speedy responses,” explains Essuman. “Our results reveal that creative improvisation is more helpful to operational resilience when supply chain disruption is high.

“Spontaneous responses are prone to mistakes,” Essuman adds. “This dark side of spontaneous improvisation may cancel out its contribution to operational resilience.”

Essuman says it has been his goal to publish in the Journal of Business Logistics since shortly after he earned his MBA degree from KNUST in 2015. But he wondered how it was possible, considering the journal accepts only 5% to 10% of the article submissions it receives.

When he submitted the paper, Essuman included a cover letter explaining how his work addresses issues Richey had identified for further research in his own papers. Essuman believes that improved his odds.

Essuman also credits CARISCA for some of his success. He says his involvement with the center has played a significant role in enhancing his research and publication skills.

“CARISCA has provided a platform where I can receive advice and guidelines from top-tier journal editors,” he says. “I also often receive feedback on my work from experienced CARISCA team members. My association with CARISCA has been a blessing.”

Essuman’s co-authors on the paper are CARISCA director Nathaniel Boso and fellow research faculty members Henry Ataburo, Emmanuel Anin and Listowel Awusu Appiah.

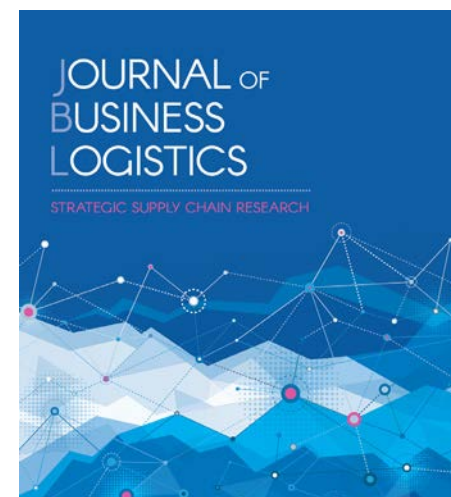
One of CARISCA’s top objectives is to strengthen KNUST’s capacity to apply global best practices for research in emergent supply chain management research topics. Getting an article published in a top-ranked journal is evidence the center’s efforts are bearing fruit.

The Journal of Business Logistics has a two-year impact factor of 7.875, a measure of how often it is cited, and is ranked 42nd out of 226 management-related academic journals. It is published in affiliation with the Council of Supply Chain Management Professionals.

“Dr. Essuman and his team from Ghana do excellent work that we are proud to publish in the Journal of Business Logistics,” says Richey. “We look forward to future submissions.”

Read the full JBL article at bit.ly/CARISCAJBLarticle

Read a profile of Dominic Essuman at bit.ly/DominicEssumanprofile



RESEARCH FACULTY MEMBER JOINS ACCELERATOR MEETING IN ARIZONA



▲ **Emmanuel Quansah collaborates with Zachary Rogers from Colorado State University at the CASN-RA meeting in Arizona**

Academic conferences and meetings are a valuable resource for scholars, whether doctoral students, newly minted PhDs or eminent professors. Conferences provide exposure to new ideas, opportunities to build a professional network and the chance to showcase one’s own work.

As part of CARISCA’s efforts to strengthen the research expertise of KNUST supply chain scholars, we provide support for attendance at select international conferences. In March, CARISCA research faculty member **Emmanuel Quansah** traveled to Arizona to participate in the Complex Adaptive Supply Networks Research Accelerator (CASN-RA) meeting.

Housed within Arizona State University’s W. P. Carey School of Business, CASN-RA involves 140 researchers from more than 25 U.S. states and 18 countries. The group meets every two years to brainstorm new research ideas.

“CASN-RA acts as a research accelerator by creating opportunities for scholars interested in supply networks to forge new teams to pursue interesting and challenging research projects,” says co-director Thomas Choi.

Choi, a senior technical advisor for CARISCA, invited Quansah to attend CASN-RA at the suggestion of executive director Dale Rogers. Rogers has worked with Quansah on several projects.

“Dr. Emmanuel Quansah is one of the bright young CARISCA faculty,” says Rogers. “It was great to have him here on campus at ASU to meet and work with faculty from all over the world.”

During the three-day CASN-RA meeting, Quansah participated in workshops, breakout discussions and brainstorming sessions. He was assigned to a team that will pursue a

research project on the application of artificial intelligence to complex adaptive supply networks. Rogers also is on the team along with researchers from the University of Cambridge in the U.K. and York University in Canada.

“I think CASN-RA presents a wonderful model of research generation through collaboration,” says Quansah. “CASN-RA’s ideation process of generating innovative research projects that takes into consideration current practices in industry and relevant theoretical underpinnings is really a productive approach to producing research that gets published.

“It’s something that African supply chain scholars can emulate. I am very grateful for the generous funding from CARISCA that enabled me to participate in this conference.”

GHANA'S LOGISTICS SECTOR ON REBOUND

Ghanaian logistics activities have weathered the storms of a near recession in mid-2022 and have been resilient in the face of a challenging operating environment. Results from the first quarter 2023 Logistics Managers Index report reveal optimism that the logistics sector is rebounding.

The index recorded its highest reading to date, with an overall value of 67.1. A value above 50% indicates growth, and values below 50% are evidence of a contraction.

The record-high rating is being driven by an increasing inventory level and a reduction in the cost metrics of inventory, says lead LMI researcher Emmanuel Quansah. Rising transportation and warehousing prices are also factors.

The Logistics Managers Index is a tool CARISCA created in 2022 to support decision-makers and improve businesses and livelihoods in Africa. By measuring combinations of inventory, warehouse and transportation activities and tracking the relationship between these variables, the LMI provides a timely measure of movement in logistics activities in Ghana.

The Ghana LMI is the first of its kind in Africa and a significant step toward supply chain efficiency, visibility and transparency in the country. The first quarter 2023 report came out in May, and researchers shared the results in a webinar on May 23.

CARISCA will continue to capture, analyze and share LMI findings quarterly on its website, carisca.knust.edu.gh/lmi

Senior executives and managers of Ghanaian organizations are invited to participate in the quarterly LMI surveys by visiting surveymonkey.com/r/Q2-23-LMI

Through surveys of logistics managers, the LMI measures the quarterly growth or decline of Ghana's logistics industry based on eight key components:



Inventory levels



Inventory costs



Warehousing capacity



Warehousing utilization



Warehousing prices



Transportation capacity



Transportation utilization



Transportation prices

Key findings from the Q1 2023 report include:

Inventory levels have climbed up and businesses are restocking in anticipation of consumer spending in the second and third quarter.

Logistics costs (inventory cost, warehouse prices and transportation prices) have declined and may continue on a downward trend leading into the second quarter of 2023.

Warehouse capacity has increased slightly while transportation capacity has declined; however there is a significant increase in **warehouse** and **transportation utilization**.

Predictions indicate further growth in **logistics activities** in the second quarter.

The **Electronic Payment Systems (EPS)** index recorded growth in the first quarter 2023. Researchers expect to see more people transacting business using electronic payment systems in the second quarter.

SECOND ANNUAL ALUMNI SURVEY COMPLETED

Alumni networks are powerful bridges that can create beneficial outcomes for students, companies and non-governmental organizations. They also support universities training the next generation of researchers, innovators and leaders.

To strengthen relationships between KNUST graduates and their alma mater, CARISCA undertook its second annual alumni survey in 2022 and posted the results this spring. The 2022 survey was expanded to include all School of Business alumni, not only supply chain and information systems grads.

The survey aimed to assess the mid- to long-term outcomes of graduates in the workforce, measure job satisfaction, and identify opportunities to enhance students' experiences at the university.

Alumni feedback revealed several key themes. Students expressed a desire for more hands-on learning

opportunities. They also emphasized the need for training in essential skills like data analytics, communication and industry-specific computing.

Additionally, students wished to participate in seminars on leadership, life after school and entrepreneurship to bridge the gap between academic and industry expectations.

One outcome of the survey is that CARISCA is supporting the School of Business in creating a career services office to help students find good jobs upon graduation.

KNUST's alumni office has adopted aspects of the alumni survey for its annual tracer study of graduating students. CARISCA also intends to continue administering the alumni survey annually.

In April, USAID featured the survey in its Science for Impact newsletter, with a link to the results. [Read more at carisca.knust.edu.gh/2022alumnisurvey](https://carisca.knust.edu.gh/2022alumnisurvey)

STAY CONNECTED

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

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CARISCA EXTENDS OUTREACH WITH CONFERENCE EXHIBITS

Access and inclusion is one of CARISCA's four primary areas of focus. One goal within that focus area is recruiting more women and girls to the supply chain profession. We had the opportunity this spring to engage with numerous young women attending the **Ghana Youth Agriculture Summit**, held on the KNUST campus in April.

CARISCA senior technical advisor Matilda Owusu-Bio was a keynote speaker at the youth summit. She talked about "Navigating an Efficient Agricultural Supply Chain for Economic Development, with a Focus on Youth and Women."

In addition, CARISCA staffed an exhibit table at the event and engaged with the youth, policymakers and other stakeholders in agriculture. The exhibit table featured poster presentations, pull-up banners and giveaway items such as newsletters, pens, bookmarks and brochures.

In other outreach efforts this spring, CARISCA team members actively engaged stakeholders at two additional conferences:

CILT Africa Forum

CILT Africa Forum is a major event for the Chartered Institute of Logistics & Transport International. Organized annually among African member countries, this year's forum was in Kigali, Rwanda in April. Over 80 new subscribers signed up for the CARISCA mailing list at this event.

Women Icons

Women Icons is a regional exhibition of women-owned businesses. At this event in May, we had the chance to talk to attendees about a CARISCA research project on "How Female Entrepreneurs Can Build Resilient Businesses." The presenter, KNUST PhD student Priscilla Addo Asamany, gave part of the talk in Twi, one of Ghana's local dialects.

CILT Africa Forum



▲ The leadership of CILT International visits CARISCA's booth at the 2023 Africa Forum in Kigali, Rwanda.



▲ CARISCA team members (left to right) John Manso Frimpong, Christa Agyemang and Abdul Samed Muntaka at the CILT Africa Forum.

Women Icons

▶ CARISCA senior technical advisor Matilda Owusu-Bio (left) at Women Icons 2023 with the KNUST vice-chancellor's representative.

▶ Poster presented at the Women Icons exhibit

Ghana Youth Agriculture Summit



▲ A KNUST PhD student explains his research to a group of high school girls.



▲ CARISCA senior technical advisor Matilda Owusu-Bio presents at the Ghana Youth Agriculture Summit.

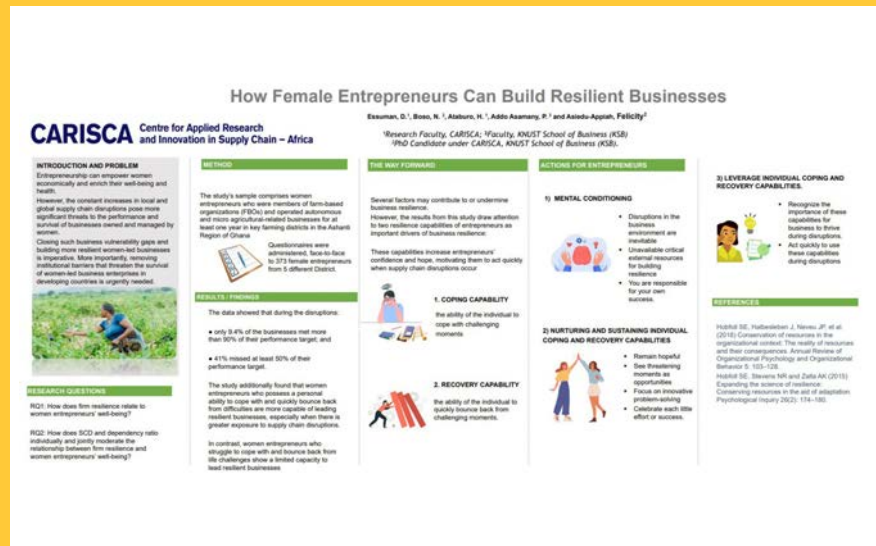


▲ CARISCA staff member Elsie Konadu Addae hands out items to an exhibition visitor.



▲ KNUST PhD student Priscilla Agyemang shows her poster to an exhibition visitor.

Photos by Immanuel Ofie



SCIENTIFIC VISITS AIM TO ENHANCE SUPPLY CHAIN EDUCATION ACROSS CONTINENT OF AFRICA



Photo by Keak Studios

▲ **Marvel Ogah**

Although CARISCA is based in Ghana, its objective is to improve the level of supply chain education across the continent of Africa. To help facilitate that effort, we implemented a series of scientific visits this spring.

Faculty from partner universities in Nigeria visited KNUST for a week each in March and May. During the visits, the faculty met with CARISCA team members and faculty of the KNUST School of Business to discuss possible future collaborations.

They also gave research seminars to faculty and graduate students and served as guest lecturers in supply chain undergraduate classes.



Photo by Immanuel Offei

▲ **Ibraheem Forson Abdul-Azeez**

“The visit provided a rare opportunity for me to start an academic network with KNUST Business School faculty and students,” said **Marvel Ogah**, a faculty member at Lagos Business School, about his visit in March. “It created a forum for exchanging ideas and learning from both sides.”

Next academic year, CARISCA plans to expand the visits into an exchange program that will also involve outbound visits by KNUST faculty to partnering institutions.

“I think the scientific visit is a good initiative,” said **Ibraheem Forson Abdul-Azeez**, a Lagos State University faculty member who visited KNUST in May. “It provides various benefits, including collaboration and networking opportunities, exposure to new research perspectives and capabilities, and personal enrichment.”

CARISCA ACADEMIC, ADVISORY BOARDS MEET

Supply chain academic and industry leaders continue to support CARISCA by advising on and supporting our research capacity-strengthening efforts. The 26-member Academic Board met on February 22, and the nearly 50-member Advisory Board of industry experts met on April 12.

The Academic Board heard presentations from two KNUST PhD students on their research projects

and offered valuable feedback and guidance. The Advisory Board heard presentations on several key project initiatives and began a discussion about the center’s sustainability.

Both groups will meet again in late summer or fall. The next Academic Board meeting is scheduled for August. The Advisory Board will convene in person in Ghana in October.

DISTINGUISHED LECTURE SERIES

Six times a year, CARISCA invites top supply chain scholars and leaders to deliver presentations. These Distinguished Lectures give faculty and students access to inspiring role models, the latest ideas and approaches in supply chain research, and practical guidance for conducting and publishing research.

Seaports & African trade: the role of ports in Africa’s economic growth



▲ **Frank Ojadi**

Africa’s port infrastructure presents both challenges and opportunities for the development of trade. Among the key challenges is congestion, which leads to long cargo dwell time at the ports. Port congestion was already an issue on the continent long before the COVID-19 era.

On Feb. 9, **Frank Ojadi**

from the Lagos Business School faculty talked about the latest paradigm shifts in ports globally and the role ports are now playing to enhance trade. Ojadi holds a PhD in transport economics and has published articles, book chapters and cases on Nigerian seaports, supply chain and logistics management, and the maritime industry.

In his presentation, part of CARISCA’s Distinguished Lecture Series, Ojadi first looked at the fundamentals and history of port development in Africa. He covered the early growth period and the role ports have traditionally played in African trade.

“The truth of the matter is, as early as civilization started some form of seaport also came into being,” said Ojadi. “It was primarily to facilitate trade at those early times.”

The growth or decline of seaports over time may be due to multiple factors, explained Ojadi. These include natural forces such as earthquakes, foreland influences such as global trade, political developments and market forces.

“One of the other very powerful forces is geographical conditions,” he said. “That is, the site, the accessibility, and the special environment of the situation.”

He also offered insights with respect to colonial-era port development on the continent.

“Most African ports evolved as gateway ports for evacuation of commodities by colonial masters to home countries,”

said Ojadi. “In the cases of West African coastal countries, it was economically better to develop ports on the coastline than build a rail line or road across the Sahara Desert to Europe.”

A more strategic approach

Later, as trade grew and governments took control of port operations, a more strategic approach developed. People began asking, “What role will the port play in the economic development of the country?”

Generally, ports are structured into two main components – the sea-side and the land-side. The land-side could extend from the immediate vicinity of the port to remotely located contestable foreland far away from the sea shore.

Under the World Bank port classification in the 1980s, different port models emerged. The most favored type across most African countries is the landlord port model. In this case, a government agency assumes the role of the landlord and leases the infrastructure to private operators. They invest in the superstructure and manage the cargo flows.

“The challenge here is simply that, while the private sector drives for efficiency, you don’t see that kind of efficiency in the public sector,” Ojadi said. “Matters that require input from the public sector tend to get delayed and undermine the speed with which activities and decisions are taken.

“Some countries may favor the landlord port system because it brings about private sector participation and equity,” said Ojadi. “But they also need to be mindful of the fact that it will be in their interest to speed up the public-sector processes to avoid delays in decision making.”

“The truth of the matter is, as early as civilization started some form of seaport also came into being.”

continued on next page ►

Challenges of congestion and empty containers

In his talk, Ojadi looked at the challenges African ports need to overcome to make supply chains on the continent more efficient. Although ports all around the world became bottlenecks during the COVID-19 pandemic, Nigerian ports began experiencing congestion much earlier, due to an economic recession in 2015.

Ojadi said one development that has improved the situation is the introduction of barges. Later, the use of truck-scheduling digital applications also helped.

“We never had barges operating in Nigerian seaports,” he said. “Movement of cargo was primarily limited to access by the road. But when the barges came, it became a relief that cargo can now be routed from the seaport terminals through other routes.”

Another problem the Nigerian ports had to address was how to handle empty containers. This challenge is the result of an imbalance between cargo coming into the country and cargo flowing out of the country.

“Most African countries rely a lot on exports of agricultural commodities that are shipped in bulk form,” said Ojadi. “The major bulk items or commodities that leave the country leave in bulk vessels.”

That means that import containers that deliver manufactured goods to Africa sit empty at their ports. “We now have empty containers littering all over the port vicinity,” said Ojadi. “And it added to the problem of COVID-19 in 2020 and 2021.

A call for action

Ojadi identified a number of reasons why these problems could not be resolved swiftly:

- ♦ different business models and objectives of stakeholders;
- ♦ reluctance to improve coordination that also favors competitors;
- ♦ risk-averse behavior and short-term focus of firms;
- ♦ unequal distribution of costs and benefits;
- ♦ lack of resources or willingness to invest.

“This is really something that calls for action,” concluded Ojadi. “It’s not only for Nigeria, but I think, for almost all African countries to address.”

“So much of what we now call tracking and tracing, supply chain visibility, analytics, digital supply chains, platforms, 3D printing, augmented reality technology, IoT – a large portion of this came from startups,” Wagner said. “So yes, companies need to engage with startups.”

On the downside, startups have a low survival rate. Wagner cited statistics from Europe, Ghana, the U.S. and South Korea showing that 70% or more of new businesses fail in the first five years.

“As a corporate, I need to be careful whether I work with a startup,” Wagner said. “I need them because of the reasons that I mentioned. However, many of them will not be successful.”

Startup Supplier Model

A variety of vehicles exist for corporations to engage with startups, Wagner pointed out. These include incubators, accelerators, venture capital investments, mergers and acquisitions, all of which require a financial investment.

Wagner studies a different kind of corporate–startup relationship that he calls a startup supplier model. It involves a corporation integrating a startup into its supplier base. The corporate entity gains access to the startup’s technology or product, but the startup remains independent.

“This is what we are interested in,” said Wagner. “The interactions with startups that require the buildup of supplier relationships can be that the startup delivers a product or service to the company. Or, in the supply chain ecosystem, the startup can be a service provider that helps a company with sourcing processes, supply chain processes, maintenance processes, and all these.”

In both cases, a buyer-supplier relationship needs to be established, Wagner said. Corporate firms working with startup suppliers are primarily looking for flexibility and innovation, he noted. Managing these suppliers does come with unique challenges.

In one research study, Wagner looked at challenges corporations might encounter at the pre-formation stage, before a buyer-supplier relationship is established. One such challenge is the need to adapt their standard supplier evaluation tools.

“Some of the traditional information that the buying firm normally wants to have from suppliers, startups simply do not have,” Wagner said. “The buyer has established questions that would include, ‘please give us your sales numbers from the last three years.’ ‘Can you prove what the quality performance was over the last year?’ ‘Can you show us your financials?’

“No, we cannot,” Wagner said startups would reply. “A startup cannot do this.”

Another potential pre-formation challenge is differing expectations about timelines, Wagner said.

“Interdisciplinary research is very promising, and you can have a lot of impact, but publishing it is not that easy.”

“The startups, they want to move fast. They know if they do not move forward with the project, if they don’t win the business with this customer, they will not get financing. They will not be able to scale their business.

“As a corporate buying firm, I have more time. I have my processes to go through. I don’t have time pressure. So there’s a disconnect.”

Post-formation challenges

Wagner also has studied post-formation challenges, those that occur after a buyer-supplier relationship has been established. Among these are slow and complex decision making and what he terms “missing reliability.”

“So a startup that wants to sell a service or product to an established corporate, well now there is a business person, IT comes into play, legal comes into play, corporate communication, and many, many other units that might be involved, which simply slows down the process,” says Wagner. “That is something that startups really have to struggle with.”

Missing reliability refers to a buyer’s expectation that a product is 100% developed and proven, while a startup’s product may be only 80% reliable. It could still be in the pilot phase and need further development.

“A startup might offer a product to a buying firm when it’s 80% okay,” said Wagner. “For the startup, speed is more important. If I’m an established buying firm, I want to source a product that’s 100% developed and not still in the pilot phase.”

Through a qualitative study Wagner conducted, he developed a model of buying firm archetypes. The archetypes describe how different firms work with, identify and select startups as suppliers.

Skeptical buyers do not adapt their supplier selection process to the needs of startups and thus do not successfully integrate startups into their supplier network. Opportunistic adapters partially adjust their processes for startups.

The third archetype, systematic selectors, use best practices for working with startups. They have different startup-specific evaluation criteria and may even have dedicated people within the organization for startups to work with.

Startups in the Supply Chain Ecosystem – Practice and Research



▲ Stephan Wagner

logistics management at the Swiss Federal Institute of Technology Zurich (ETH Zurich), aims to change that. In his April 20 Distinguished Lecture, he set out to motivate researchers, both in Africa and other parts of the world, to take up projects at the interface of operations management and entrepreneurship.

Wagner began doing research in this area in 2015 and has published 11 papers on the topic to date. He and his students

Startups are associated with innovation, emerging technologies, digitalization and disruptive business models. But the scholarly supply chain, logistics and operations management literature has up to now paid little attention to startups’ role in the supply chain ecosystem.

Stephan Wagner, professor and chair of

also have put their research into practice. They have founded two successful startups – GenLots, a supply planning tool, and Archlet, a supply analytics platform.

When other students were developing hardware startups, Wagner said they would come to him and ask, “How should I build up our operation? We need to sell a product. We don’t know how to do this.” Those inquiries spurred his interest in research at the intersection of entrepreneurship and operations management.

In his lecture, Wagner outlined a number of reasons why it makes sense for operations and supply chain management scholars – as well as corporate entities – to engage with startup firms. Those reasons are:

- ♦ Startups develop innovative products and services.
- ♦ Startups offer products and solutions that existing firms do not.
- ♦ Startups are oftentimes a driver for digitalization and automation.
- ♦ Startups are an important source of external innovation.

Wagner concluded his talk with recommendations for corporate managers who wish to work with startups and questions for scholars interested in studying startups to consider.

For managers who want to work with startups:

Step 1: Clarify what you aim for

- ◆ Develop a holistic strategy for engaging with startups.
- ◆ Specify the types of collaboration that best fit your company (e.g., accelerator, merger or acquisition, startup supplier).

Step 2: Draw on best practices

- ◆ Identify the technology areas to integrate into your company through a startup.
- ◆ Improve your knowledge about startups.
- ◆ Tap into experts such as venture capitalists and accelerators.
- ◆ Adapt, simplify and speed up processes, contracts and tools.

- ◆ Create new-venture partnering capabilities by adapting your evaluation and selection, development, communication and governance processes.

Questions academics who want to research startups should consider:

- ◆ Should I focus on a problem or a method? Wagner has used experiments, large scale surveys, secondary data and case studies.
- ◆ What are the risks and benefits of engaging in novel research streams?
- ◆ Should I engage with practice, and if so, how?
- ◆ Can I get access to data or will I need to create the data?
- ◆ Will I be able to find a journal to publish my interdisciplinary research?

“I think interdisciplinary research is very promising, and you can have a lot of impact,” concluded Wagner, “but publishing it is not that easy.”

FACULTY WORKSHOP

More than 150 students, faculty and staff from KNUST and other higher education institutions in Africa gathered in person or virtually April 3 and 4 to learn about conducting experiments. The occasion was CARISCA's second faculty workshop of the academic year.

Mahyar Eftekhari, an associate professor of supply chain management at Arizona State University, traveled to Ghana to lead the workshop. He shared examples of lab and field experiments he has conducted and talked about the value and power of experimental research.

The Value and Power of Experimental Study

“Simple” is a word Mahyar Eftekhari uses often to describe experimental research. As he phrased it on a presentation slide, “The art of designing good experiments ... is in creating simple environments that capture the essence of the real problem while abstracting away all unnecessary details.”

“The key is that if you want to design an experiment, you want to avoid creating a complicated environment,” said Eftekhari during his two-day faculty workshop in Ghana. “Again and again, I’m going to talk about this. Hopefully you will realize how simple you can design an experiment.”

Experiments can be conducted either in the lab or in the field. In lab experiments, researchers generate their own data and have more control.

“You invite subjects to come to your lab, wherever the lab is – a park, manufacturing lobby, a conference room, a classroom, wherever,” explained Eftekhari. “They know that they are contributing to an experiment. And then you record their behavior or you record their decisions. And this is the way that you generate data.”



▲ Mahyar Eftekhari

Field experiments, on the other hand, take place in natural, real-world settings. The researcher has less control over what takes place.

“The key is that if you want to design an experiment, you want to avoid creating a complicated environment.”

“In the field experiment, you have some control, but everything is in nature,” Eftekhari said. “People don’t know that they contribute to your experiment. They show their real action, their real decision.”

Although the level of control is much higher in a lab experiment, the external validity is lower, explained Eftekhari. Because the lab environment is often artificial, study results may not be generalizable to other populations.

Whether you are doing a lab or a field experiment, you want to be sure to design a rigorous study so the results are useful for practitioners, Eftekhari noted. He listed three factors that make experimental research rigorous:

- ◆ Theoretical guidance – The hypotheses you develop should be based on existing assumptions or theories.
- ◆ Induced valuation – You need to have some reward for participants to test how they pursue their goals.
- ◆ Careful control of institutional structure – The strategic options and information you make available to participants should match the real world.

Lab Experiments

Lab experiments typically serve one of three major purposes, Eftekhari said. These are 1) to test and refine an existing theory; 2) to develop a new theory; or 3) to test new institutional designs.

So the first step in designing an experiment is to identify or develop the theory it will test, said Eftekhari. He noted that a good theory has three characteristics.

“It should be useful. It should be based on repetition. It should be real,” he said. “You know, it should be useful to help us learn about the world or to help us improve something.”

In one of his own lab experiments that he shared with the group, Eftekhari tested the theory that charity organizations reduce their donation income if they offer volunteering opportunities. He conducted the project in collaboration with a social service charity in Arizona, The Society of St. Vincent de Paul.

“This study is based on standard economic theory,” Eftekhari said. “People make one type of donation. Time is valuable. If I gave you time, I’m not going to give you my money too.”

He found that theory not to be true, however. In fact, in his study, volunteers were more likely to donate and at higher levels.

To run the experiment, Eftekhari recruited participants through an online research platform called Prolific. The study followed a between-subject design with two treatment conditions.

As Eftekhari noted, a study needs to include at least two treatments – a baseline and a comparison – to qualify as an experiment. A research project with only one treatment is considered a demonstration.

Participants were randomly assigned to either a volunteer or task group. Randomization is key in any experiment, Eftekhari stressed. It’s a way to avoid confounding the experiment with nuisance variables that throw off the results.

The volunteer group was asked to design a “sweet dreams” note card that would be left on shelter residents’ pillows at night. The task group was asked to design a card for themselves. They were told the purpose was to assess the artistic quality of virtual painting.

Each participant was paid \$3 plus a \$1.50 bonus. At the end, they were given the chance to donate all or any part of their bonus to St. Vincent de Paul. Participants who completed a volunteer activity were 15% more likely than the task group to make a donation, and their donations were 21% higher.

“This is a counterintuitive result compared to classic economic theories,” said Eftekhari. “In classic economic theories, we assume that if you’ve given your time, you won’t give money.

“But in this setting, we showed that no, you give time as a volunteer and you also give money. This understanding is critical when a charity schedules a volunteering program.”

Field Experiments

In the field experiment Eftekhari shared at the workshop, he was collaborating with the same charity. St. Vincent de Paul wanted to reduce the costs it was incurring from unwanted in-kind donations, such as stained clothing or damaged furniture.

The researchers were tasked with finding a way for the charity to discourage its donors from giving trash, while not discouraging them from making any future contributions. Again, simplicity was key to the experiment.

“If you tell the donors, ‘Hey, look, you are giving us trash,’ donors are not going to laugh,” said Eftekhari. “They are going to say, ‘Okay, I don’t give any kind of donation to you whatsoever.’

“So you need to nicely tell them, ‘Don’t give us trash.’ And the charity asked us to do this, and this became our experiment. You see, as simple as that.”

Eftekhar based the study on two behavioral interventions: social norms and information disclosure. Both are well-documented in research literature.

Social norms come into play when people match their behavior to acceptable group standards. Information disclosure refers to altering people’s behavior through information or education.

In Eftekhar’s experiment, he composed two emails to be sent to in-kind donors two days before the scheduled pickup of their items. Importantly, the researchers did not change anything else about the donation process.

One group (social norm) received an email that said the majority of donors give the charity items in very good condition that have a high likelihood of being sold. A second group (information disclosure) received an email stating that unsellable items cost the charity tens of thousands of dollars every month to dispose of. A third (baseline) group did not receive an email.

The researchers then trained pickup drivers to evaluate the quality of donated items and rate them on a scale of one to five. A rating of one meant the items were all garbage. A score of five indicated the items were all good.

In-kind donations from those who received and opened the social norm email earned an average rating of 3.33. Donations from the information disclosure group averaged a rating of only 2.69. The researchers found no significant difference between the information disclosure and baseline groups.

“The social norm message was really powerful,” said Eftekhar. “Now the charity sends the message with social norm to their donors.”

Before the experiment, St. Vincent de Paul received about 90 truckloads of “garbage” donations each month, Eftekhar reported. Now they receive fewer than 45 truckloads monthly.

Useful for humankind

Eftekhar concluded his presentation by urging participants to consider how their own research projects will make a difference, both to theory and practice.

“One important question for you to think about is, what is the goal of a business school researcher?” Eftekhar asked. “I think our goal is to improve the living standards of people.

“Basically, this is the goal of any scientist. And that’s why, if you work on theory, you want to develop a theory that is useful for humankind.”

“In the last three years, a lot of people have realized that the supply chain is vulnerable,” said guest speaker **Bindiya Vakil**, CEO of Resilinc, a supply chain mapping, monitoring and resiliency company. “We have a lot of work to do and a long way to go, particularly healthcare and pharma.

“Traceability is super critical,” she added. “What makes it different in Africa is that there are a lot of smaller players, and there is a reluctance to share data.”

Following presentations by Vakil and **Stephen Acheampong** from the Rainforest Alliance, participants at the May 4 meeting discussed supply chain traceability in breakout groups and convened for a panel discussion.

During the panel discussion, Dale Rogers, CARISCA executive director, emphasized that traceability is a basic step toward achieving resilience in the supply chain.

“In the last three years, a lot of people have realized that the supply chain is vulnerable. Traceability is super critical.”

Supply chain traceability is not a sprint; rather, it is a long journey, panelists agreed.

“A thousand miles begins with a single step,” said Acheampong, Rainforest Alliance’s senior officer for certification bodies monitoring in charge of Africa. “As awareness continues to grow and companies adopt better practices, the lack of transparency is gradually being solved.”

Nearly 200 people attended the SCAN meeting, including 91 in person in Accra, Ghana, and more than 100 online.

SUPPLY CHAIN ACTION NETWORK MEETING

Supply Chain Traceability: Improving Africa’s Agric and Health Sectors

Supply chain traceability is the key to unlocking the potential of Africa’s agricultural and health sectors. It involves establishing transparent and efficient processes to track and verify the movement of goods throughout the supply chain, from production to consumption.

In the rapidly evolving landscape of Africa’s economies, embracing supply chain traceability is a crucial step that can provide numerous benefits. In the agriculture and health sectors, it can help ensure product safety, quality and compliance with regulatory standards.

On May 4, CARISCA’s Supply Chain Action Network (SCAN) convened stakeholders to explore the possibilities

for enhancing supply chain traceability to improve Africa’s agricultural and health sectors. The discussions explored adopting cutting-edge technologies and establishing effective cross-sector collaborations to enhance supply chain traceability.

CARISCA’s Supply Chain Action Network engages supply chain stakeholders in Ghana and across Africa to discuss current topics, trends, opportunities and challenges for managing African supply chains. The goal is to create a strong network of policymaking, private sector and civil society organizations to strengthen supply chain research, education and facilitate knowledge transfer.



▲ Guest speaker Bindiya Vakil on Zoom



▲ Guest speaker Stephen Acheampong



▲ Attendees at the SCAN meeting



▲ Breakout discussion

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CARISCA'S UPCOMING EVENTS

June 19	Paper Development Workshop
June 20–22	Third Annual Supply Chain Research Summit “Africa's Supply Chains and the Future of Work”
June 26	Partnership Coordination Committee Meeting
July 7	Advancing Women in Supply Chain Webinar “Role Women Can Play in the Cocoa Supply Chain”
July 27–28	Continuing Professional Development Course “Supervisory Skills for Procurement and Supply Chain Managers”

To learn more about and register for CARISCA events, go to carisca.knust.edu.gh/events

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