ORSP NEWSLETTER
www.orsp.org.ph
September 2021

ORSP Inks MOA with Asia Pacific College to Offer Business Analytics and Systems Thinking Course

Operations Research Society of the Philippines (ORSP) and Asia Pacific College (APC) signed a memorandum of agreement on a Business Analytics and Systems Thinking (BAST) course last June 15, 2021.

The Business Analytics and Systems Thinking course is a two-module professional track designed for professionals such as managers and entrepreneurs seeking to improve their skills in making critical decisions involving complex problems.

The Business Analytics Module, which covers the technical aspect of the course, aims to provide a framework for machine learning and business intelligence in the practice of efficient and effective management.

Meanwhile, the Systems Thinking Module covers the practical aspect of the course that aims to improve critical thinking and organizational performance through system dynamics modeling.

The Business Analytics and Systems Thinking program will start on November 26, 2021.◆

Above is the virtual signing of the MOA with (top right to left) Ma. Teresita P. Medado APC, Jo Anne dela Cuesta APC, Francis Miranda ORSP, (bottom right to left) Manuel F. Magbuhat APC, Marie Shella Mariscal ORSP, and Elise del Rosario ORSP.

2nd Webinar

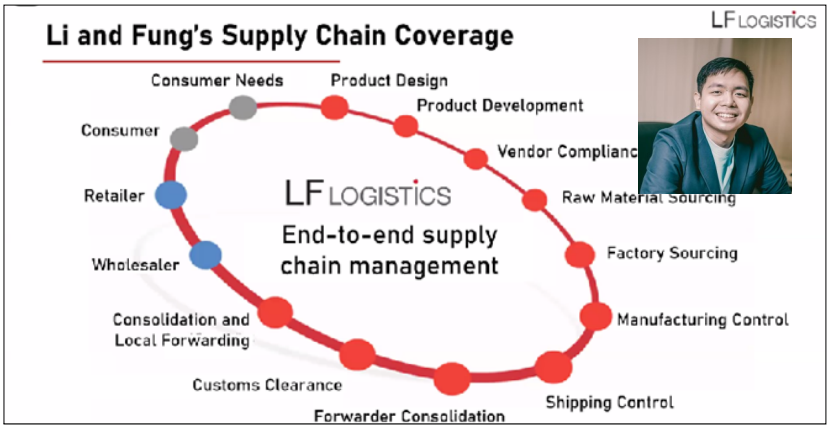
Technology Adapts to the Changing Logistics Landscape

The second ORSP webinar last June 7 on the topic *Logistics in Challenging Times* was very well attended with 227 members and students from companies and various schools. The talks of the two invited speakers complemented each other to give a picture of what is happening in the Logistics area in the Philippines and around the world.

Gloria T. Estabaya of San Miguel Integrated Logistics Services, Inc. presented trends in logistics that are disrupting the industry, namely: 1) technology which, through analytics, GPS, autonomous vehicles, internet of things, and AI have enabled faster and reliable delivery of services; 2) the increasingly demanding needs and wants of various market segments, including a mix of millennial and affluent older customers; 3) macroeconomic trends of globalization, climate change, urbanization, and 4) the current pandemic.

On the other hand, the Philippines is faced with challenges of 1) an archipelagic geography; 2) widely varying population densities; 3) poor internet; and 4) the region's highest logistics costs.

She emphasized that logistics makes possible the advent of digital marketing, online shopping, as well as traditional shopping experience. She described how digitization in transportation and logistics makes it possible to optimize processes and capture real time information to enhance service delivery.



The second speaker, **Patric Ellis Chua U*y***, shared how his company, L & F Logistics, a regional third-party service provider, has embraced digitalization to transform the different elements of the supply chain into data that could provide valuable insights. This is key in equipping the company with speed to make faster decisions, operate with agility, and rely on innovative ways of doing business.

Agility and innovative decision making are made possible through the use of off-the-shelf tools that perform supply chain network optimization; supply chain mapping through GIS; market demand analysis and geo-processing; statistical computing with Python and Minitab; transportation and shipment planning and optimization; data visualization, big data and business intelligence; warehouse layout and simulation; and lastly, vehicle routing and scheduling, along with fleet planning and management. The speaker gave examples on the use of these tools and how they were used to establish a supply chain network in the Philippines; design an optimal SKU arrangement in warehouses through simulation; plan transport shipments that take into account time windows, vehicle types and service levels; and dispatch vehicles with real-time dashboards. He explained the importance of a Control Tower which enables monitoring of processes, KPIs and exceptions across the freight, warehousing and transport operations.

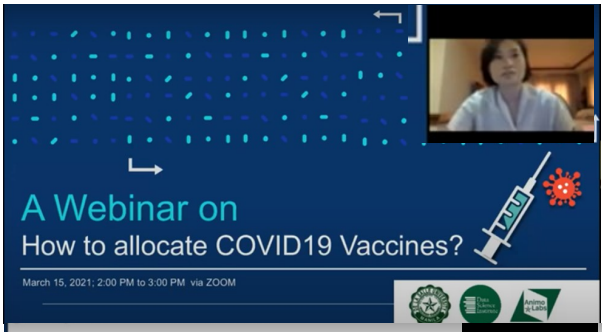
A lot of questions were asked by the audience. The recording of the lecture is available to attendees at https://youtu.be/AVQV782y7g4; https://youtu.be/mJ_Ix_KX4iY. The two hour session gave a full picture of the logistics challenges and how it is being addressed. Webinar participants, who rated the session at near perfect levels, benefited greatly from the cumulative and extensive logistics experience of the two speakers. ◆

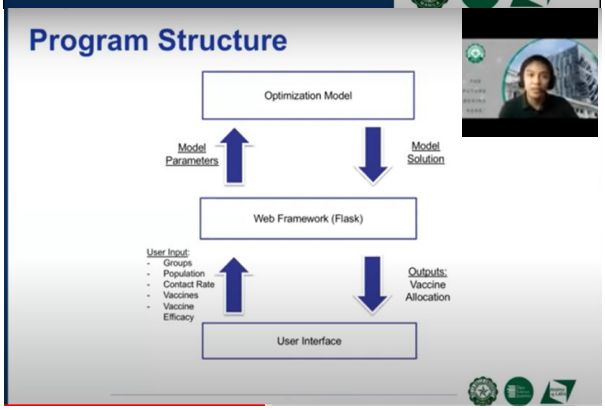
1st Webinar

OR Responds to the Pandemic

ORSP launched its first quarterly online technical forum for 2021 with the first in the series themed *OR: Helping Respond to the Pandemic* on March 15, 2021.

The two-hour forum was opened by ORSP Executive Director Elise del Rosario. In her welcome remarks, ORSP President Marie Shella Mariscal**,** OR Manager of San Miguel Corporation, highlighted how the Covid 19 has impacted all aspects of life, the economy and the relevance of OR in all these experiences, thus highlighting the importance of the two talks featured for the day.





ORSP Board member Dennis Cruz introduced **Dr. Charlle Sy** who is an associate professor and research fellow at the Department of Industrial Engineering of De La Salle University. She in turn, introduced co-presenter **Dr. John Frederick Tapia,** an Associate Professor at the Department of Chemical Engineering of the same University.

Their paper, *An Optimization Approach to the Allocation of Covid-19 Vaccines* tries to address how to allocate a limited amount of vaccines specially during the initial roll out such that infection rates are minimized. Dr. Sy discussed how initially, an LP model was developed to minimize the sum of fatality rates among the various age groups. The output, however, showed that infection rates did not improve appreciably with this approach. They developed a second model that minimizes reinfection rates with the use of eigenvalues. This resulted in a nonlinear programming model which minimizes the reproduction rate of the virus. The reproduction rate represents the expected number of secondary infections generated by an infectious individual. As designed, the model could handle multiple vaccines with different levels of efficacy. A hypothetical case study illustrates the computational capability of the model. Furthermore, the group of Dr. Tapia has developed a Python-based software to aid in model deployment.

The series of questions posed by the audience moderated by D. Cruz showed the high level of audience interest in the research. Possible improvements with the use of data were also suggested.

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The second speaker was introduced by ORSP Board member Nestley Sore - **Vic Reventar** is himself an ORSP Board member and a Lecturer at the Department of Quantitative Methods and Information Technology Department at the John Gokongwei School of Management of the Ateneo de Manila University. He has done extensive consulting work in various areas of Operations Research, one of which concerns his talk, the *COVID 19 and its Effects on Supply Chains in the Philippines.*

The Philippine Government reaction to the pandemic was an immediate Enhanced Community Quarantine (ECQ) designed to limit the mobility of people by restricting their movements and minimizing "contact-rate" through social distancing. These resulted in income reduction for most with unintended effects on the manufacturing and agricultural sectors and their distribution systems. These consequences were fully visualized in the systems dynamics and agent-based simulation model.

As presented by the speaker, the model provides the basic insight that systems are interlinked and that policy decisions affect a major segment of society. This kind of analysis is specially useful in evaluating how to address partial disruptions in the local supply chains through reconfiguration that may involve, say, increasing production and inventory capacities or repositioning inventories in affected regions or facilities. He stressed that any disruption affecting any segment in the supply chain affects the integrity of the whole chain and that the critical issue is to ensure a fast time-to-recover from such a disruption.

He ended by recommending that the government policy effort in managing the effects of COVID-19 must consider the flow of goods and services with the use of the simulation models presented. The questions at the end were reflective of the realization of the power that this type of approach could potentially offer to the current situation. Recording of this webinar is available for attendees at https://youtu.be/9c12MR7g_nc.

It could be said that the 136 participants from UST, UP Los Baños, Holy Angel University, De La Salle Lipa, Quezon City Polytechnic University, Batangas State University - Alangilan, Asia Pacific College, Adamson University, San Miguel Corporation, Phil Batteries Inc., and CSIRO (Australia) left the zoom meeting with an idea of how the pandemic is bringing out the OR tools for use of decision makers. ◆

3rd Webinar

Stimulating Ideas Exchange: OR Conversations

In response to the feedback gathered from the past two that it has organized, ORSP designed its third quarterly webinar in a format that would have three short talks and a 30-minute breakout session. This is to encourage participants to answer questions that relate to OR as a tool for decision-making, its practice and its teaching. Practitioners, academics, and students will be encouraged to give their opinions on questions that the panel will be putting together, as drawn from the talks that will be shared by Elise del Rosario (*OR: An Express Overview*), Dennis Beng Hui and Martha Tan (*On the Practice of OR*), and Alleli Ester Domingo (*On the Teaching of OR*).

Responses will be gathered using Padlet and summaries of responses will be published in the next issue of the ORSP Newsletter. Each breakout room will have 10 participants including one practitioner and one faculty member who will act as facilitators. Questions not included in the list may be discussed and brought up during the Q&A at the end. This is meant to gain an insight into, among others, what makes OR tick, what makes it fail and what makes it the most or the least favorite subject of students. ◆

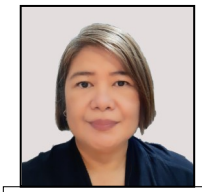
OR Conversations Speakers and Session Leaders


Elise del Rosario


Dennis Beng Hui


Martha Tan


Alleli Ester Domingo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ORSP Toasts Its First IFORS Fellow

E. Del Rosario joins other IFORS Presidents (with their term of office and national society represented) as IFORS Fellows (L to R): Heiner Muller-Merbach (1983-85, Germany), Peter Bell (1995-97, Canada) Elise del Rosario (2007-09, Philippines), Andres Weintraub (1998-2000, Chile), Paolo Toth (2001-03, Italy) and Thomas Magnanti (2004-06, USA). Not in the picture are Dominique de Werra (2010–2012, Switzerland), Nelson Maculan (2013-2015, Brazil), Mike Trick (2016-2018, USA).

ORSP proudly announces that its founding President, Elise del Rosario, was bestowed the IFORS Fellow award last January 15, 2021 by the International Federation of Operational Research Societies (IFORS). According to the award letter issued by IFORS President Grazia Speranza, the award is a recognition of her "dedicated efforts over the years to help IFORS promote the development of OR worldwide, both in methodology and practice and to link member societies together.

E. Del Rosario joins 19 others (https://www.ifors.org/ifors-fellows/) in the list of which she is the only woman and Asian. She is one of the founding Presidents of ORSP, at the time that she was head of the Operations Research Group of San Miguel Corporation, from where she retired as its Vice President. It will be recalled that the San Miguel Corporation was awarded the 1992 Operations Research Society of America Prize for its sustained and consistent use of OR in organizational decision-making. Founded in 1955, IFORS is the only global organization in the field of OR and counts some 54 OR national societies with over 30,000 individual members. ◆

Welcome New Members!

This newsletter issue welcomes new members who have joined the ORSP Family.

From the ***Academe***: **Renier G. Mendoza**, Assistant Professor, Institute of Mathematics at University of the Philippines-Diliman.

From the ***Industry***: **Liezel Bianca C. Dizon**, Data Science Analyst at GfK Philippines Corporation.

Returning to the fold as *Balik-ORSP* members: **Rachel Aurelio**, Disaster Recovery and Property Restoration Specialist at BELFOR (ASIA) PTE LTD - Singapore and **Marizen Contreras**, Associate Professor at University of Batangas. ◆

Renier G. Mendoza

Liezel Bianca C. Dizon

Rachel Aurelio

Marizen Contreras