

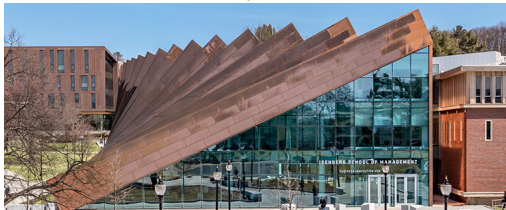
# Honoring Beale Medalist Dr. Ailsa Land

## Real-World Optimisation Models: Successes and Pitfalls

**Anna Nagurney**

John F. Smith Memorial Professor of Operations Management  
Director – Virtual Center for Supernetworks  
Operations and Information Management Department

February 25, 2021



UMassAmherst

Isenberg School  
of Management



# Dr. Ailsa Land Is Interviewed by Professor László Végh

In July 2019, Professor Emeritus Land was interviewed by LSE Professor Végh, as part of the INFORMS History and Traditions series on Oral Histories. She was the first female thus honored.



[Click here to view the interview video and transcript.](#)

In this very interesting and panoramic interview she notes, among others, John Murchland, whose work on the Braess Paradox I've cited, saying: "So John Murchland and I came to an agreement. He would teach me Fortran while I would teach him how to solve an LP using Fortran."

# Some Quotes of Professor Land's from the Interview

- “I cannot see that an objective function which is just profit makes any sort of sense at all. It's not the way a world should be run.”
- “And as you know, you have to publish. It's publish or perish, isn't it?” ... “Very good at inventing new things, but didn't want to think anything through to the end.”
- “But if you want my basic opinion about OR is that it was great for wartime.”

**Although we are not officially “at war,” various officials have stated that now “we are at war with the coronavirus.”**

**The COVID-19 pandemic has spurred mobilization on an international scale not seen since WWII 80 years ago. OR played an essential role in WWII and is again engaged in intense scientific efforts with high stakes, with expectations of helping in response, mitigation, and recovery.**

# Response of the OR Community to COVID-19

**Our profession has responded also in a substantive way through offering advice to governments as well as impacts on policy.**

Fueled by a passion to assist, there have been innovations in supply chain network modeling, game theory, cold chain vaccine logistics, hospital capacity, as well as other related areas. The research has garnered attention.



Information on COVID-19 and Pandemics



Coronavirus  
Healthcare  
Resources



Coronavirus  
Supply Chain  
Resources



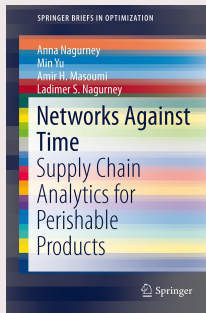
Coronavirus  
Transportation  
Security  
Resources



Coronavirus  
Journal Resources

# Response of the OR Community to COVID-19

Our research on perishable and time-sensitive product supply chains, in which utilize results from physics, chemistry, biology, and medicine in order to capture the perishability of various products over time from healthcare products such as blood, medical nucleotides, and pharmaceuticals, as well as vaccines, to food, has been especially relevant in the pandemic. We have also worked on multiple extensions, including the incorporation of the critical resource that is labor.



## Beale Medal Panel in Honor of Dr. Ailsa Land

# Writing OpEds

On August 4, 2020, I published an article in *The Conversation*,

**“The Raging Competition for Medical Supplies is not a Game, but Game Theory Can Help.”**



On September 18, 2020, I published another article in *The Conversation*,

**“Keeping Coronavirus Vaccines at Subzero Temperatures During Distribution Will Be Hard, but Likely Key to Ending Pandemic.”**

# Coverage by the Media During the Pandemic





On April 22, 2020, a letter from California Attorney General Xavier Becerra to the Admiral Brett Giroir, the Assistant Secretary of the US Department of Health & Human Services, and signed by US Attorney Generals of 21 other states, requested updates, because of the pandemic blood shortages, to blood donation policies that discriminate.

**My March 12 article in *The Conversation*, which was reprinted in LiveScience, was the first reference and was cited on the first page.**

# Impacting Policy Through OR and Analytics



State of California  
Office of the Attorney General

XAVIER BECERRA  
ATTORNEY GENERAL

April 22, 2020

*Via Electronic Mail*

The Honorable Admiral Brett Giroir, MD  
Assistant Secretary for Health  
U.S. Department of Health & Human Services  
Mary E. Switzer Building  
330 C Street SW, Room L600  
Washington, DC 20024  
Attn: ACBTSA-PAHPAIA Sec. 209  
[ACBTSA@hhs.gov](mailto:ACBTSA@hhs.gov)

RE: "Solicitation for Public Comments on Section 209 of the Pandemic and All-Hazards Preparedness and Advancing Innovation Act," 85 Fed. Reg. 16,372 (March 23, 2020)

Dear Assistant Secretary Giroir:

The undersigned State Attorneys General from California, Colorado, Connecticut, Delaware, the District of Columbia, Hawaii, Illinois, Iowa, Maine, Massachusetts, Michigan, Minnesota, Nevada, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Vermont, and Virginia submit this letter in response to the federal government's "Solicitation for Public Comments on Section 209 of the Pandemic and All-Hazards Preparedness and Advancing Innovation Act," (85 Fed. Reg. 16,372). We support the Office of the Assistant Secretary for Health in the U.S. Department of Health and Human Services' (HHS) efforts and work in maintaining an adequate national blood supply during the COVID-19 pandemic.

An adequate blood supply is critical to the nation's healthcare. Blood transfusions and blood products are needed for major surgeries, to treat diseases such as sickle cell anemia and some cancers, and to treat victims who have injuries caused by accidents or natural disasters.<sup>1</sup> Every day, the United States needs approximately 36,000 units of red blood cells, nearly 7,000

<sup>1</sup> Anna Nagurney, How Coronavirus is Upsetting the Blood Supply Chain, Live Science (Mar. 13, 2020), <https://www.livescience.com/coronavirus-blood-supply-chain.html/>.

# Impacting Policy Through OR and Analytics

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WILLIAM TONG  
Connecticut Attorney General



KATHLEEN JENNINGS  
Delaware Attorney General



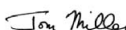
KARL A. RACINE  
District of Columbia Attorney General



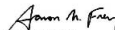
CLARE E. CONNORS  
Hawaii Attorney General



KWAME RAOUL  
Illinois Attorney General



TOM MILLER  
Iowa Attorney General



AARON M. FREY  
Maine Attorney General



MAURA HEALEY  
Massachusetts Attorney General



DANA NESSEL  
Michigan Attorney General



KEITH ELLISON  
Minnesota Attorney General



AARON D. FORD  
Nevada Attorney General



GURBIR S. GREWAL  
New Jersey Attorney General



HECTOR BALDERAS  
New Mexico Attorney General



LETITIA JAMES  
New York Attorney General

# A Concluding Thought

Professor Land, towards the end of her interview with Professor Végh, says: “But in terms of what I have achieved as a lifetime, have I left the world in any sense better by doing what I did, I think the answer is no. Might I have done better if I’d lived amongst the economists and had some effect there? I don’t know.”

**Professor Land, you have made an immense impact on the field of OR and on the practice of OR, and today we all thank you and salute you! We will make sure that the contributions of those working in OR will continue to make a positive difference.**