

History & Traditions - Herstory & The Future

Anna Nagurney
Isenberg School of Management, UMass Amherst

	Committee's Choice Panel What Does Our Past Tell Us About Our Future		
			
Christopher Thomas Ryan University of British Columbia Moderator	Linus Schrage Lindo Systems, Inc.	Thomas Magnanti MIT	Anna Nagurney UMass Amherst

INFORMS 2024 Annual Meeting, Seattle, WA
Summit Ballroom, Tuesday, October 22, 2024 8:00-9:15 AM

Female OR Pioneers



Ailsa Land
(1927-2021)
PhD 1956
LSE



Marguerite Frank
(1927-)
PhD 1956
Harvard



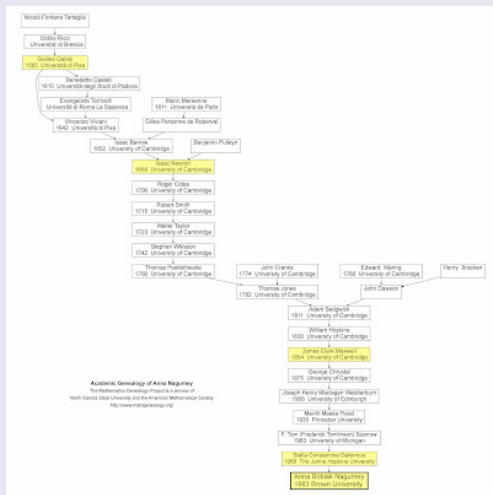
Stella Dafermos
(1940-1990)
PhD 1968
Johns Hopkins



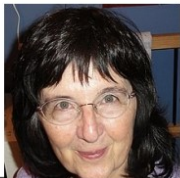
Judith B. Liebman
(1936-2023)
PhD 1971
Johns Hopkins

Standing on the Shoulders of Giants

My academic genealogy because of Stella Dafermos goes back to Maxwell, Newton, and Galileo!



Female OR Pioneers



Christine Shoemaker
PhD 1971
USC



Frieda Granot
PhD 1974
UT Austin



Karla Hoffman
PhD 1975
George Washington



Margaret Wright
PhD 1976
Stanford



Kathryn Stecke
PhD 1977
Purdue



Elisabeth Pate'-Cornell
PhD 1978
Stanford



Dorit Hochbaum
PhD 1979
Wharton School

The INFORMS History & Traditions Website

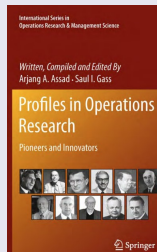
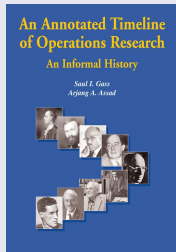
This website, a continuing work in process, includes profiles of more than 230 historic individuals as well as the historic institutions, methodologies and application areas with which they are associated. It incorporates images, bibliographic citations and links to online material, including oral history interviews, archives, and memoirs. The great preponderance of material, including relevant papers in INFORMS publications, is open access. The site is a public resource for research, teaching, and the enjoyment of those interested in the history of OR/MS. It will continue to grow as new material becomes available.

- 3 of the 47 oral interviews are with females: Land, Shoemaker, and Wright; their bios plus Liebman's bio are included. About 2% of the bios on the website are of females.

INFORMS Fellows are examples of outstanding lifetime achievement in operations research and the management sciences. They have demonstrated exceptional accomplishments and made significant contributions to the advancement of OR/MS over a period of time. Their service to the profession and to INFORMS has culminated in election to the INFORMS Fellow Award.

- 4 out of the 125 INFORMS Fellows in the inaugural class of 2002 were females (3.2%): Karla Hoffman, Judith Liebman, Elisabeth Pate'-Cornell, and Margaret Wright.
- In 2006, about 5% of the INFORMS Fellows were female and, as of 2024, about 10%. Approximately 27% of the INFORMS members identify as female.

Books on the History / Herstory of OR are Important



43 males are profiled in the 2011 Assad Gass book.

Profiles		
Russell Lincoln Ackoff	Saul I. Gass	Hugh Jordan Miser
E. Leonard Amoff	Murray Aaron Geisler	Philip McCord Morse
Egon Balas	Ralph E. Gomory	Howard Raiffa
Evelyn Martin	Charles Frederick	Bervyn Hugh Patrick
Lansdowne Beale	Goodeve	Rivett
Anthony Stafford Beer	David Bendel Hertz	Bernard Roy
Richard E. Bellman	Ronald A. Howard	Thomas L. Saaty
Patrick Blackett	Ellis A. Johnson	Herbert A. Simon
Alfred Blumstein	Leonid Vital'evich	Jacinto Steinhardt
Seth Bonder	Kantorovich	Albert W. Tucker
Abraham Charnes	George E. Kimball	Steven Vajda
C. West Churchman	George Kozmetsky	Andrew Vazsonyi
William W. Cooper	Harold W. Kuhn	John von Neumann
George B. Dantzig	John D. C. Little	Harvey M. Wagner
Jay Wright Forrester	John F. Magee	Philip Starr Wolfe
D. Ray Fulkerson	Harry Markowitz	

TUTORIALS IN
OPERATIONS RESEARCH
INFORMS 2011



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History of Operations Research

Saul I. Gass

University of Maryland, College Park, Maryland 20742, sgass@rhsmith.umd.edu

Arjang A. Assad

School of Management, State University of New York at Buffalo, Buffalo, New York 14260,
aassad@buffalo.edu

Abstract We discuss the history of operations research (OR) from the following perspectives: the origins and people of OR; the major sites of early United States OR research; the best stories from contributors to early OR; and lessons learned, or how history informs OR today.

Keywords operations research; history; perspectives

Tutorial Outline

Part I: Origins and People of Operations Research (OR)—A Quick Tour

Part II: The Major Sites of Early U.S. OR Research

Part III: The Best Stories from Contributors to Early OR

Part IV: Lessons Learned, or How History Informs OR Today

Female Leadership

Some data on female leadership of our professional societies:
In the 20th century there were two female Presidents:
Judith Liebman (ORSA, 1987) and Karla Hoffman
(INFORMS, 1998).

The below Tables of data are thanks to Graham Rand, and
his Commentary on Carroll & Esposito Amideo, “Gender
Equality: Opportunities and Challenges for the OR
Community,” published in JORS in 2024.

Table 1 Gender distribution of society presidents.

Gender	ORS	USA				EURO
		ORSA	TIMS	INFORMS	IFORS	
Male	32	42	41	20	20	19
Female	3	1	0	10	3	5
Femal proportion	8.6%	2.3%	0%	33.3%	13%	20.8%

Table 2 Gender distribution of society presidents in the twenty first century.

Gender	ORS	INFORMS	IFORS	EURO
Male	9	16	5	7
Female	3	9	3	5
Female proportion	25%	36%	37.5%	41.7%

There have been no female Editors-in-Chief of the journal *Management Science* (11 males), the *European Journal of Operational Research* (15 males), and the *Journal of the Operational Research Society* (17 males).

This year, after 13 male editors, the Editor-in-Chief of *Operations Research* became Amy Ward.

Several other INFORMS journals now have a female as Editor-in-Chief.

First Discussion Paper in JORS Published in 2024

JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY
2024, VOL. 75, NO. 6, 1011–1029
<https://doi.org/10.1080/01695682.2024.2343343>



DISCUSSION

OPEN ACCESS

Gender equality: opportunities and challenges for the OR community

Paula Carroll and Annunziata Esposito Amideo

School of Business, University College Dublin, Dublin, Ireland

ABSTRACT

There is a research gap on understanding gender equality issues in the OR discipline, and on the role of gender in OR participation and career progression. We apply a gender lens to the literature on the history of OR, reflecting on the origins of OR, the OR community, and the theory, methods and practice of OR. A gender lens aims to uncover hidden gender dimensions to bring gender issues into sharper focus. The review shows that women are largely invisible in the recorded history of OR. We use a survey instrument to capture the current OR community and extract insights on their careers by gender. Using a decision tree to understand factors that affect participation in OR, our findings are consistent with other studies: women perceive barriers to their participation and career progression, but the barriers are not as apparent to their male peers. Our paper offers novel contributions including a reflection on the history of OR through a gender lens, insights on the role of gender in OR careers, and a critical discussion of our findings. We aim to stimulate a conversation and encourage a discussion on the next steps toward innovative and cross-disciplinary research and applications at the gender/OR nexus.

ARTICLE HISTORY

Received 12 April 2023
Accepted 10 April 2024

KEYWORDS

History of OR; gender equality; OR/gender nexus; survey; decision tree

JOURNAL OF THE OPERATIONAL RESEARCH SOCIETY
2024, VOL. 75, NO. 6, 1030–1042
<https://doi.org/10.1080/01695682.2024.2344969>



COMMENTARY

OPEN ACCESS

Commentary on Carroll & Esposito Amideo “Gender Equality: Opportunities and challenges for the OR community”

Laura A. Albert^a, Annunziata Esposito Amideo^b, Julia Bennell^c, Sally Brailsford^d, Paula Carroll^b, Ruth Kaufman^e, Katherine Kent^f, Kathy Kotiadis^g, Martin Kunc^h, Anna Nagurneyⁱ, Frances O'Brien^j, Graham Rand^k and M. Grazia Speranza^l

^aUniversity of Wisconsin-Madison, Madison, Wisconsin, USA; ^bUniversity College Dublin, Dublin, Ireland; ^cLeeds University Business School, University of Leeds, Leeds, UK; ^dUniversity of Southampton, Southampton, UK; ^eThe Operational Research Society, London, UK; ^fWomen in OR and Analytics Network (WORAN), Office for National Statistics, London, UK; ^gUniversity of Kent, Canterbury, UK; ^hJournal of the Operational Research Society, University of Southampton, Southampton, UK; ⁱUniversity of Massachusetts, Newton, Massachusetts, USA; ^jUniversity of Warwick, Coventry, UK; ^kLancaster University, Lancaster, UK; ^lUniversity of Brescia, Brescia, Italy

ABSTRACT

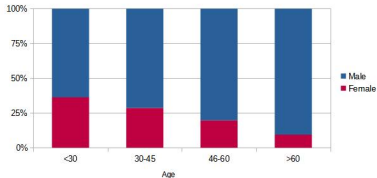
This article comprises a set of commentaries for the paper written by Carroll and Esposito Amideo from different scholars and OR practitioners. The commentaries agree on the importance of documenting the gender situation across the OR community and the need to address it through multiple actions.

KEYWORDS

Gender Equality; Survey; WISDOM; WORAN

Some Data on Members, Thanks to INFORMS!

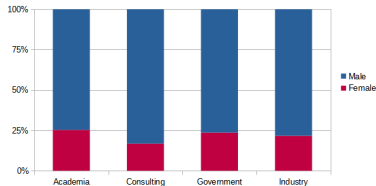
Gender Distribution of IMFORMS Membership



Gender Distribution by Membership Type

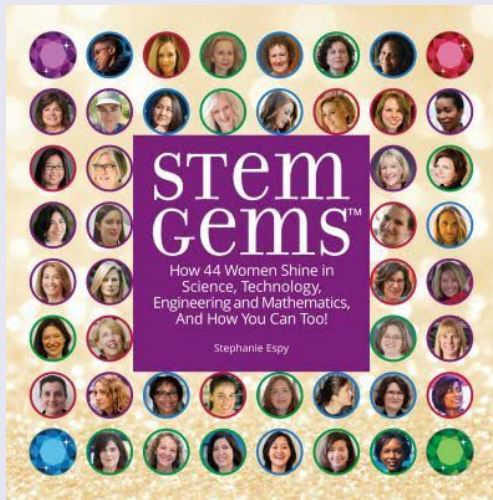


Gender Distribution by Employment Type



The Future is Bright But Investment is Needed

It is very important that we codify the history / herstory of OR for different age groups.



The Future is Bright But Investment is Needed

- The skillsets of our students are highly sought after.
- Our discipline continues to advance methodologies as well as applications. Many of our tools are used by those in different disciplines.
- Our members are regularly contacted by the media to inform and comment on current events and issues.
- INFORMS has done a great job in terms of advocacy and outreach.
- Quite a few INFORMS members are engaged in writing OpEds, etc.
- More are being called to advise the government (harkens to the origins of OR).

The Future is Bright But Investment is Needed

- We need better **name recognition** by the public, corporations, future students, practitioners, government officials, decision-makers, etc.
- The OR discipline arose from applications in practice, including military applications and logistics. Tighter interfaces between academics and practitioners are needed.
- There are various initiatives in Europe regarding OR outreach that might be useful to expand.
- Grateful that we have begun serious discussions about gender and OR and are celebrating the discipline's greatness!