Professor Matthias Ehrgott, Dr. habil. Dr rer. nat.
Department of Management Science
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Education
- **Habilitation (Dr. habil.) in Mathematics** July 2001. University of Kaiserslautern
- **PhD (Dr. rer. nat.) in Mathematics** July 1997. University of Kaiserslautern
- **MSc (Dipl. math. oec.) in Management Mathematics** December 1992. University of Kaiserslautern

Scientific Career
- **August 2014 – July 2017**: Head of Department of Management Science, Lancaster University
- **April 2013 – present**: Professor, Department of Management Science, Lancaster University
- **February 2011 – January 2013:** Head of Department, Department of Engineering Science, The University of Auckland
- **February 2011 – March 2013**: Professor, Department of Engineering Science, The University of Auckland
- **October 2006 – May 2008**: Directeur de Recherche, Centre National de la Recherche Scientifique, Laboratoire d'Informatique de Nantes Atlantique

Awards
- Edgeworth-Pareto Award of the International Society on Multiple Criteria Decision Making 2011
- Emerging Research Excellence Award, The University of Auckland 2002
- Wiley Prize for Best Applied Paper in Multicriteria Decision Analysis 2002

Other Management Experience
- President of the International Society on Multiple Criteria Decision Making 2019-2024
- President of of the INFORMS Section on Multiple Criteria Decision Making 2015
- Vice President of the Operations Research Society of New Zealand 2008 – 2012

Professional Actities and supervision of students
During my career I have supervised three post-doctoral researchers and been the supervisor or co-supervisor of 19 succesfully defended PhD theses (currently one active supervision). Moreover, I have examined 18 PhD theses as external examiner. In editorial work, I have been on the editorial board of 11 journals, including Management Science, in various roles (currently 6 active roles). From 2023 I will be editor in chief of Wiley's Journal on Multiple-Criteria Decision Analysis. I have been invited as plenary or keynote speaker at about 15 international conferences, including the 11th Triennial International Conference of the Association of Asia Pacific Operational Research Societies (APORS) 2018 and have given short courses on multi-objecyive optimisation in various countries.

Research Interests and Publications
My research interest is in Operations Research, a scientific method to solve decision making problems involving the use of scarce resources. Following an interdisciplinary approach, it employs data analysis, statistics, mathematical modelling, optimisation and computing to assist decision making in organisations, industry, and many sectors of society. My specific interest and expertise lies in multi-objective optimisation. This area deals with optimisation problems which model decision making problems in which several conflicting goals are pursued at the same time. With my research, I contribute to the theory, methodology and application of multi-objective optimisation. I have attracted about 1.2 million Euros of Research Funding including from the Marsden Fund in New Zealand, the European Union and EPSRC in the UK. According to Google Scholar, my publications have been cited almost 20.000 times, giving me an h-index of 48 and an i10 index of 116.

Books

1   S Greco, **M Ehrgott**, JR Figueira (ed.). Multiple Criteria Decision Analysis – State of the Art Surveys, International Series in Operations Research & Management Science Volume 233. New York, Springer, 1346 pages, 2016

2   **M Ehrgott**, CM Fonseca, X Gandiblux, JK Hao, M Sevaux (ed.). *Evolutionary Multi-Criterion Optimization.* Volume 5467 of Lecture Notes in Computer Science, Berlin, Springer, 586 pages, 2009

3   V Barichard, **M Ehrgott**, X Gandibleux, V T'Kindt (ed.). Multiobjective Programming and Goal Programming – Theoretical Results and Practical Applications. Volume 618 of Springer Lecture Notes in Economics and Mathematical Systems. Berlin, Springer, 298 pages, 2009

Peer Reviewed Articles

4   A Raith**,** **M Ehrgott**, F Fauzi, KM Lin, A Macann, P Rouse, J Simpson. Integrating Data Envelopment Analysis into radiotherapy treatment planning for head and neck cancer patients. European Journal of Operational Research 296 (1), 289-303, 2022

5   G Cabrera-Guerrero, **M Ehrgott**, AJ Mason, A Raith. Bi-objective optimisation over a set of convex sub-problems. Annals of Operations Research, 1-26, 2021

6   **M Ehrgott**, M Hassanasab, A Raith. A multi-objective optimisation approach to compute the efficient frontier in data envelopment analysis. Journal of Multiple Criteria Decision Making 26(3-4), 187-198, 2019

7   D Baatar, **M Ehrgott**, HW Hamacher, IM Raschendorfer. Minimizing the number of apertures in multileaf collimator sequencing with field splitting. Discrete Applied mathematics 250, 87-103, 2018

8   JYT Wang, KN Dirks, **M Ehrgott**, J Pearce, AKL Cheung. Supporting healthy route choice for commuter cyclists: The trade-off between travel time and pollutant dose. Operations Research forHealth Care 19, 156-164, 2018

9   **M Ehrgott**, A Holder, O Nohadani. *Uncertain data envelopment analysis*, European Journal of Operational Research 268(1), 231-242, 2018

10 KM Lin, **M Ehrgott**. *Multiobjective navigation of external radiotherapy plans based on clinical criteria*. Journal of Multi-Criteria Decision Analysis 25(1-2), 31-41, 2018

11 G Cabrera, **M Ehrgott**, A Mason, A Raith. *A matheuristic approach to solve the multiobjective beam angle optimization problem in intensity‑modulated radiation therapy.* International Transactions in Operational Research 25(1), 243-268, 2018

12 JYT Wang, **M Ehrgott**. *A three‑objective user equilibrium model: Time surplus maximisation under uncertainty*. Journal of Multi-Criteria Decision Analysis 25(1-2), 3-15, 2018

13 KM Lin, **M Ehrgott**, A Raith. *Integrating column generation in a method to compute a discrete representation of the non-dominated set of multi-objective linear programmes.* 4OR 15(4), 331-357, 2017