Nationality: Portuguese; Email: ines.marques.p@tecnico.ulisboa.pt

ORCID ID: 0000-0002-1663-3713; Scopus Author ID: 54783078800; ResearcherID: F-7533-2015.

AFFILIATION[1]

Assistant Professor, Department of Engineering and Management, Instituto Superior Técnico, Universidade de Lisboa, Portugal

Researcher, Centre for Management Studies, Instituto Superior Técnico, Universidade de Lisboa, Portugal

ACADEMIC DEGREES

2010, PhD in Statistics and Operations Research, Faculdade de Ciências, Universidade de Lisboa. Thesis: Planeamento de Cirurgias Electivas – Abordagens em Programação Inteira.

2006, MSc in Operations Research, Faculdade de Ciências, Universidade de Lisboa. Thesis: Problemas de Transporte Bicritério.

2003, Degree in Mathematics Applied to Economics and Management, Instituto Superior de Economia e Gestão, Universidade Técnica de Lisboa.

1996, European Baccalaureate, European School Brussels II, Belgium.

TEACHING ACTIVITIES

Operations Management, BSc in Industrial Engineering and Management; Logistics Management & Operations and Production and Operations Management, MSc in several engineering programs

Operations Research, MSc in Industrial Engineering and Management, PhD in Engineering and Management

Models and Applications in Operations Management and Logistics, PhD in Engineering and Management

Health Systems, Introduction of Biomedical Engineering, and Project in Biomedical Engineering, MSc in Biomedical Engineering

PUBLICATIONS IN INTERNATIONAL JOURNALS

Viana A, Marques I, Dias JM (2023). Preface to the Special Issue on Operations Research in Healthcare. International Transactions in Operational Research 30 (1): 5-7. DOI 10.1111/itor.13167

Meneses M, Marques I, Barbosa-Póvoa A (2023). Blood inventory management: Ordering policies for hospital blood banks under uncertainty. International Transactions in Operational Research 30 (1): 273-301. DOI 10.1111/itor.12981

Oliveira M, Visintin F, Santos D, Marques I (2022). Flexible master surgery scheduling: combining optimization and simulation in a rolling horizon approach. Flexible Services and Manufacturing Journal 34 (4): 824-858. DOI 10.1007/s10696-021-09422-x

[1] On a long-term leave since February 1, 2021, until January 31, 2024.

Santos D, Marques I (2022). Designing master surgery schedules with downstream unit integration via stochastic programming. European Journal of Operational Research 299 (3): 834-852. DOI 10.1016/j.ejor.2021.09.030

Doneda M, Yalcindag S, Marques I, Lanzarone E (2021). A discrete-event simulation model for analysing and improving operations in a blood donation centre. Vox Sanguinis 116 (10): 1060-1075. DOI 10.1111/vox.13111

Araújo AM, Santos D, Marques I, Barbosa-Póvoa A (2020). Blood supply chain: a two-stage approach for tactical and operational planning. OR Spectrum 42: 1023-1053. DOI 10.1007/s00291-020-00600-1.

Wolbeck L, Kliewer N, Marques I (2020). Fair shift change penalization scheme for nurse rescheduling problems. European Journal for Operational Research 284(3): 1121-1135. DOI 10.1016/j.ejor.2020.01.042.

Marques I, Demirtas D, Rachuba S, Vasilakis C (2020). EURO 2018 – Innovative methods and uses of operations research in health and care applications. Operations Research for Health Care 24: 100243. DOI 10.1016/j.orhc.2019.100243.

Lai D, Leung J, Dullaert W, Marques I (2020). A graph-based formulation for the shift rostering problem. European Journal for Operational Research 284(1): 285-300. DOI 10.1016/j.ejor.2019.12.019.

Carvalho AS, Captivo ME, Marques I (2020). Integrating the ambulance dispatching and relocation problems to maximize system's preparedness. European Journal of Operational Research 283(3): 1064-1080. DOI 10.1016/j.ejor.2019.11.056.

Oliveira M, Bélanger V, Marques I, Ruiz A (2020). Assessing the impact of patient prioritization on operating room schedules. Operations Research for Health Care 24: 100232. DOI 10.1016/j.orhc.2019.100232.

Marques I, Captivo ME, Barros N (2019). Optimizing the master surgery schedule in a private hospital. Operations Research for Health Care 20: 11-24. DOI 10.1016/j.orhc.2018.11.002.

Vermuyten H, Rosa JN, Marques I, Beliën J, Barbosa-Póvoa A (2018). Integrated staff scheduling at a medical emergency service: an optimization approach. Expert Systems with Applications 112: 62-76. DOI 10.1016/j.eswa.2018.06.017.

Marques I, Beliën J, Guido R (2018). EURO 2016 - New Advances in Health Care Applications. Operations Research for Health Care 18: 1-3. DOI 10.1016/j.orhc.2018.04.002.

Mateus C, Marques I, Captivo ME (2018). Local search heuristics for a surgical case assignment problem. Operations Research for Health Care 17: 71-81. DOI 10.1016/j.orhc.2017.04.001.

Marques I, Captivo ME (2017). Different stakeholders' perspectives for a surgical case assignment problem: deterministic and robust approaches. European Journal of Operational Research 261(1): 260-278. DOI: 10.1016/j.ejor.2017.01.036.

Vermuyten H, Lemmens S, Marques I, Beliën J (2016). Developing compact course timetables with optimized student flows. European Journal of Operational Research 251(2): 651-661. DOI: 10.1016/j.ejor.2015.11.028.

Captivo ME, Marques I, Moz M (2015). ORAHS 2014 for better practices in health care management. Operations Research for Health Care 7: 1-2. DOI 10.1016/j.orhc.2015.09.006.

Marques I, Captivo ME (2015). Bicriteria elective surgery scheduling using an evolutionary algorithm. Operations Research for Health Care 7: 14-26. DOI 10.1016/j.orhc.2015.07.004.

Castro P, Marques I (2015). Operating room scheduling with generalized disjunctive programming. Computers & Operations Research 64: 262-273. DOI 10.1016/j.cor.2015.06.002.

Marques I, Captivo ME, Pato MV (2015). A bicriteria heuristic for an elective surgery scheduling problem. Health Care Management Science 18(3): 251-266. DOI 10.1007/s10729-014-9305-z.

Marques I, Captivo ME, Pato MV (2014). Scheduling elective surgeries in a Portuguese hospital using a genetic heuristic. Operations Research for Health Care 3(2): 59-72. DOI 10.1016/j.orhc.2013.12.001.

Marques I, Captivo ME, Pato MV (2012). An integer programming approach to elective surgery scheduling. OR Spectrum 34(2): 407-427. DOI 10.1007/s00291-011-0279-7.

Marques I, Captivo ME, Pato MV (2012). Planning elective surgeries in a Portuguese hospital: Study of different mutation rules for a genetic heuristic. Lecture Notes in Management Science 4: 238-243.

PUBLICATIONS IN CONFERENCE PROCEEDINGS

Mertens L, Müller EC, Schwarm N, Vogt FJ, Wolbeck L, Santos D, Marques I (2020). A simulation framework to evaluate time savings in operating rooms. PACIS 2020 Proceedings: 24th Pacific Asia Conference on Information Systems, vol. 153.

Oliveira M, Lubomirska L, Marques I (2020). Reallocating operating room time: a Portuguese case. 4th International Conference on Health Care Systems Engineering, HCSE 2019. Springer Proceedings in Mathematics and Statistics, vol. 316, pp 133-145, Springer-Verlag. DOI: 10.1007/978-3-030-39694-7_11

Oliveira M, Marques I. Facing dynamic demand for surgeries in a Portuguese case study. 20th Congress of APDIO, Portuguese Association of Operational Research, IO 2019. Springer Proceedings in Mathematics and Statistics, vol 374, pp 79-94, Springer-Verlag. DOI: 10.1007/978-3-030-85476-8_7

Leung J, Lai D, Dullaert W, Marques I (2019). On a graph-based formulation for shift rostering. ISS 2019, International Symposium on Scheduling.

Vermuyten H, Rosa JN, Marques I, Beliën J, Barbosa-Póvoa A (2019). A Column Generation-based Diving Heuristic for Staff Scheduling at an Emergency Medical Service. 19th Congress of APDIO, Portuguese Association of Operational Research, IO 2018. Springer Proceedings in Mathematics and Statistics, vol. 28, pp 233-245, Springer-Verlag. DOI: 10.1007/978-3-030-10731-4_16

Marques I, Captivo ME, Pato MV (2013). A bicriteria approach for an elective surgery scheduling problem. Proceedings of the ISORAP 2013, International Symposium on Operational Research and Applications, Marrakech, Morocco, pp. 621-627.

Marques I, Captivo ME, Pato MV (2012). Exact and heuristic approaches for elective surgery scheduling. Proceedings of the CLAIO/SBPO, XVI Congreso Latino-Iberoamericano de Investigación Operativa / XLIV Simpósio Brasileiro de Pesquisa Operacional, Rio de Janeiro, Brasil, pp. 3729-3738.

Marques I, Captivo ME, Pato MV (2012). Planning elective surgeries in a Portuguese hospital using a genetic heuristic. Proceedings of the ORAHS 2012, 38th Annual Conference on Operational Research Applied to Health Services, Enschede, Netherlands.

Marques I, Captivo ME, Pato MV (2011). An integer programming approach to elective surgery scheduling in a Lisbon hospital. Proceedings of the VII ALIO/EURO – Workshop on Applied Combinatorial Optimization, Porto, pp. 181-183.

SUPERVISION OF PHD THESIS

Maria Odete de Oliveira Meneses, PhD in Engineering and Management (IST, Universidade de Lisboa). Supervisor: Inês Marques. Co-supervisor: Ana Barbosa-Póvoa. Started in 2020. Supervision until 2022.

Paulo Roberto de Sousa Abreu, PhD in Engineering and Management (IST, Universidade de Lisboa). Supervisor: Inês Marques. Co-supervisor: Ana Barbosa-Póvoa. 2020-2023. Supervision until 2022.

Mariana Bettencourt Medeiros Oliveira, PhD in Engineering and Management (IST, Universidade de Lisboa). Supervisor: Inês Marques. Co-supervisor: Daniel Santos. Started in 2020. Supervision until 2021.

Ana Sofia Bernardo Torrado, PhD in Engineering and Management (IST, Universidade de Lisboa). Supervisor: Ana Barbosa-Póvoa. Co-supervisor: Inês Marques. Started in 2019. Co-supervision until 2022.

Mariana Bayão Horta Mesquita da Cunha, Optimizing Emergency Medical Service Systems, PhD in Engineering and Management (IST, Universidade de Lisboa). Supervisor: Inês Marques. Co-supervisor: Ana Barbosa-Póvoa. Started in 2019. Supervision until 2022.

Ana Sofia Fonseca Carvalho, Ambulances location and dispatching decisions, PhD in Statistics and Operations Research (FC, Universidade de Lisboa). Supervisor: Maria Eugénia Captivo. Co-supervisor: Inês Marques. 2016-2021.

PROJECTS

2020-2021 - Service integration in healthcare: Balancing stakeholder interests and workflows in operating rooms, funded by FCT and Deutscher Akademischer Austauschdienst (DAAD). PIs: Inês Marques (PT) and Sebastian Rachuba (DE).

2020-2022 - LAIfeBlood: Artificial Intelligence for Blood Management (DSAIPA/AI/0033/2019), funded by FCT. Public Administration Partner: Instituto Português do Sangue e da Transplantação (IPST). PI: Pedro Monteiro. co-PI: Inês Marques.

2019-2021 - Data2Help: Data Science for Optimization of Emergency Medical Services (DSAIPA/AI/0044/2018), funded by FCT. Public Administration Partner: Instituto Nacional de Emergência Médica (INEM). PI: Vasco Manquinho.

2018-2021 - MEDI-VALUE: Instrumentos de apoio à avaliação de tecnologias de saúde para consensualizar o valor (VALUE) de dispositivos médicos (MEDI) através de abordagens multicritério (PTDC/EGE-OGE/29699/2017), funded by FCT. PI: Mónica Oliveira.

2018-2021 - ImproveOR: Building decision support tools for improved operating room management (PTDC/EGE-OGE/30442/2017), funded by FCT. Hospital Partners: Hospital do Espírito Santo de Évora and Centro Hospitalar Lisboa-Norte. PI: Inês Marques

OTHER ACTIVITIES

Co-Coordinator of the EURO Working Group (EWG) on Operational Research Applied to Health Services (ORAHS) and member of the board of the of the EWG on Practice of OR (POR).

Member of the editorial board of the Operations Research for Health Care (ORHC) and Numerical Algebra, Control and Optimization (NACO) journals. Guest editor of ORHC, International Transactions in Operational Research (ITOR) and Journal of Industrial and Management Optimization (JIMO) journals.

Member of the program committee: Winter School on Operational Research for Healthcare; ORAHS 2020, 46th annual meeting of the EWG on Operational Research Applied to Health Services; GISEH 2020, 10ème Conférence Francophone en gestion et ingénierie des systèmes hospitaliers; ODS 2019 International Conference on Optimization and Decision Science, XLIX annual meeting of AIRO – Italian Operations Research Society; ORAHS 2019, 45th annual meeting of the EWG on Operational Research Applied to Health Services; IO 2019 – XX Congresso da Associação Portuguesa de Investigação Operacional; ORAHS 2018, 44th annual meeting of the EWG on Operational Research Applied to Health Services; ICAOR 2017, 9th International Conference on Applied Operational Research (Chair of the Scheduling in Healthcare Systems – SCHEALS Workshop); ORAHS 2017, 43rd annual meeting of the EWG on Operational Research Applied to Health Services; EURO XXVIII 2016, 28th European Conference on Operational Research; HA 2016, Special Session on Health Applications; ICAOR 2012, 4th International Conference on Applied Operational Research.

Member of the organizing committee: SSC 2020, III Conference of the EWG on Sustainable Supply Chains; EURO PhD Summer School in Sustainable Supply Chains; EURO PhD Summer School 'Operational Research for Value-based Health Care'; ORAHS 2014, 40th annual meeting of the EWG on Operational Research Applied to Health Services; CMS 2014, 11th International Conference on Computational Management Science.

Evaluation of postdoctoral fellows and research projects at Research Foundation - Flanders (FWO).

Regular referee to: Applied Soft Computing; Artificial Intelligence in Medicine; Central European Journal of Operations Research; Computers & Industrial Engineering; Computers & Operations Research; European Journal of Operational Research; Expert Systems with Applications; Flexible Services and Manufacturing; Group Decision and Negotiation; Health Care Management Science; Health Policy; International Journal of Medical Informatics; International Journal of Production Research; International Transactions in Operational Research; Journal of Manufacturing Systems; Journal of Nursing Management; Journal of Scheduling; Journal of the Chinese Institute of Engineers; Journal of the Operational Research Society; Omega; Operational Research; Operations Research for Health Care; PeerJ; RAIRO - Operations Research; Scientia Iranica; Technology and Health Care; The International Journal of Health Planning and Management; Transportation Science.

Member of the Portuguese Association of Operational Research (APDIO) and of the Belgian Operational Research Society (ORBEL).