



Alejandra DUENAS

Ph.D. in Automatic Control and Systems Engineering

Full Professor, Operations Management

Head of Department

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EDUCATION

- 2013** HDR, Management Sciences, Management, University of Lille 1, France
- 2010** Diploma in Education in Teaching and Learning in Higher Education, University of Sheffield, United Kingdom
- 2004** Postgraduate certificate in Learning and Teaching in Higher Education, Coventry University, United Kingdom
- 2003** Ph.D. in Automatic Control and Systems Engineering, University of Sheffield, United Kingdom
- 1993** MSc, University of Texas, USA
- 1990** Engineer degree, Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Estado de Mexico, Mexico

RESEARCH INTERESTS

Operations Research and Health Economics

EMPLOYMENT EXPERIENCE

ACADEMIC:

- 2010 - 2013** Associate Professor, IESEG School of Management, France
- 2006 - 2010** Research Fellow in Health Economics and Decision Science., School of Health and Related Research (SchARR), University of Sheffield, Sheffield, United Kingdom
- 2003 - 2006** Senior Research Assistant in the School of Mathematical and Information Sciences, Coventry University, Coventry, United Kingdom
- 1998 - 1999** Lecturer in Computer Science, Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Estado de Mexico, Atizapan de Zaragoza, Mexico
- 1993 - 1998** Lecturer in Electronics and Communication Systems, Instituto Tecnológico y De Estudios Superiores De Monterrey, Mexico City, Mexico
- 1991 - 1993** Lecturer in Mathematics, Instituto Tecnológico y De Estudios Superiores De Monterrey, Mexico City, Mexico

PROFESSIONAL:

- 1990 - 1991** Account executive, NOVELL Computer Network Company, Mexico City, Mexico
- 1988 - 1989** Research and Development Assistant, Telemecanique Mexico, Naucalpan, Mexico

COURSES TAUGHT

- Bachelor business game, Grande ecole
- Industrial realities, Grande ecole
- Intermediate optimization methods, Grande ecole

INTELLECTUAL CONTRIBUTIONS

Papers in refereed journals

Published

Reddy B., Thokala P., Warhurst K., Chambers H., Iliff A., Bowker L., Walters S., Duenas A., Kelly M., (2016), Using MCDA to generate and interpret evidence to inform local government investment in public health, *EURO Journal on Decision Processes*, 4(3), pp. 161-181

Rawdin A., Duenas A., Chilcott J., (2014), The cost-effectiveness of weight management programmes in a postnatal population, *Public Health*, 128(9), pp. 804-810

Reddy B., Kelly M., Thokala P., Walters S., Duenas A., (2014), Prioritising Public Health Guidance Topics in the National Institute for Health and Care Excellence using the Analytic Hierarchy Process, *Public Health*, 128(10), pp. 896-903

Thokala P., Kruger J., Brennan A., Basarir H., Duenas A., Pandor A., Gillet M., Elliott J., Heller S., (2014), Assessing the cost-effectiveness of Type 1 diabetes interventions: the Sheffield Type 1 Diabetes Policy Model, *Diabetic Medicine*, 31(4), pp. 477-86

Sovic N., Pajak A., Jankowski P., Duenas A., Kawecka-Jaszcz K., Wolfshaut-Wolak R., Stepaniak P., Kawalec U., (2013), Cost-effectiveness of Cardiovascular Disease (CVD) primary prevention program in primary health care setting, *Polish Heart Journal*, 71(7), pp. 702-711

Thokala P., Duenas A., (2012), Multiple Criteria Decision Analysis for Health Technology Assessment, *Value in Health*, 15(8), pp. 1172-1181

Everson-Hock E., Jones R., Guillaume L., Clapton J., Duenas A., Goyder E., Chilcott J., Cooke J., Payne N., Sheppard L., Swann C., (2011), Supporting the transition of looked after young people to independent living: a systematic review of interventions and adult outcomes, *Child: Care, Health and Development*, 37(6), pp. 767-779

Duenas A., Tütüncü Y., Chilcott J., (2009), A genetic algorithm approach to the nurse scheduling problem with fuzzy preferences, *IMA Journal of Management Mathematics*, 20(4), pp. 369 - 383

Pandor A., Ara R., Tumor I., Wilkinson A., Paisley S., Duenas A., Durrington P., Chilcott J., (2009), Ezetimibe monotherapy for cholesterol lowering in 2,722 people: systematic review and meta-analysis of randomized controlled trials, *Journal of Internal Medicine*, 265(5), pp. 568-580

Simpson E.-L., Duenas A., Holmes M., Papaioannou D., Chilcott J., (2009), Spinal cord stimulation for chronic pain of neuropathic or ischaemic origin: systematic review and economic evaluation, *Health Technology Assessment*, 13(17), pp. 1-154

Ara R., Pandor A., Tumor I., Paisley S., Duenas A., Williams R., Rees A., Wilkinson A., Durrington P., Chilcott J., (2008), Cost effectiveness of ezetimibe in patients with cardiovascular disease and statin intolerance or contraindications: a Markov model, *American Journal of Cardiovascular Drugs*, 8(6), pp. 419-427(9)

Ara R., Pandor A., Tumor I., Paisley S., Duenas A., Williams R., Wilkinson A., Durrington P., Chilcott J., (2008), Estimating the health benefits and costs associated with ezetimibe coadministered with statin therapy compared to higher dose statin monotherapy in patients with established cardiovascular disease, *Clinical Therapeutics*, 30(8), pp. 1508-1523

Ara R., Tumor I., Pandor A., Duenas A., Williams R., Wilkinson A., Paisley S., Chilcott J., (2008), Ezetimibe for the treatment of hypercholesterolaemia A systematic review and economic evaluation, *Health Technology Assessment*, 12(21), pp. 1-232

Brennan A., Gillett M., Duenas A., (2008), Estimating the Cost Effectiveness in the UK of Vildagliptin compared to Pioglitazone as add-on therapy to Metformin using the Sheffield Type 2 Diabetes Model, *Value in Health*, 11(6), pp. 6

Dixon S., Faghieh Nasiri F., Ledger W., Lenton E., Duenas A., Sutcliffe P., Chilcott J., (2008), Cost-effectiveness analysis of different embryo transfer strategies in England, *An International Journal of Obstetrics and Gynaecology*, 115(6), pp. 758-766

Duenas A., Petrovic D., (2008), An approach to predictive-reactive scheduling of parallel machines subject to disruptions, *Annals of Operations Research*, 159(1), pp. 65-82

Duenas A., Petrovic D., (2008), Multi-objective genetic algorithm for single machine scheduling problem under fuzziness, *Fuzzy Optimization and Decision Making*, 7(1), pp. 87-104

Petrovic D., Duenas A., Petrovic S., (2007), Decision support tool for multi-objective job shop scheduling problems with linguistically quantified decision functions, *Decision Support Systems*, 43(4), pp. 1527-1538

Petrovic D., Duenas A., (2006), A fuzzy logic based production scheduling/rescheduling in the presence of uncertain disruptions, *Fuzzy Sets and Systems*, 157(16), pp. 2273-2285

Communications in refereed conferences

International

Glaize A., Duenas A., Di Martinelly C., Fagnot I., (2016), *MCDA applied to health care* OR58 Annual Conference, Portsmouth, United Kingdom

Duenas A., Di Martinelly C., (2013), *A compromised programming approach to solve a multi-objective planning and scheduling problem in a hospital* International Symposium on Econometrics Operation Research and Statistic, Sarajevo, Bosnia and Herzegovina

Tütüncü G., Duenas A., Adas C., Asçi M., Bozkurt U., (2013), *A Decision Support System for the Doctor Scheduling Problem* International Symposium on Econometrics Operations Research and Statistic, Sarajevo, Bosnia and Herzegovina

Di Martinelly C., Duenas A., (2012), *Scheduling the operating theatre: a hybrid multi-objective approach* Gestion et Ingénierie des Systèmes Hospitaliers - GISEH 2012 Conference, Quebec City, Canada

Thokala P., Duenas A., Devlin N. J., (2011), *Multiple Criteria Decision Analysis for Health Technology Assessment* ISPOR 14th Annual European Congress, Madrid, Spain

Vargas-Palacios A., Stevenson M., Duenas A., Wailloo A., (2011), *Comparing the use of dynamic and static infectious disease models in Latin America with North America* ISPOR 3rd Latin America Conference, Mexico, Mexico

Other conference and seminar presentations

National

Glaize A., Duenas A., Di Martinelly C., Fagnot I., (2015), *MCDA applied to health care decision-making: a systematic review* EUHEA Conference, Paris, France

Chapters in books

Published

Thokala P., Reddy B., Duenas A., (2017), *MCDA for Resource Allocation at a Local Level: An Application in the UK*, in: Kevin Marsh, Praveen Thokala, Rob Baltussen, Mireille Goetghebeur(Eds.), *Multiple-criteria decision analysis in healthcare decision making*, 978-3-319-47538-7, Springer International Publishing AG, chapter II, pp. 175-198

Duenas A., Di Martinelly C., Tütüncü Y., (2014), *A Multidimensional Multiple-Choice Knapsack Model for Resource Allocation in a Construction Equipment Manufacturer Setting Using an Evolutionary Algorithm*, in: Grabot, B., Vallespir, B., Gomes, S., Bouras, A., Kiritsis, D.(Eds.), *APMS, Part I, Innovative and Knowledge-Based Production Management in a Global-Local World*, IFIP AICT 438, 978-3-662-44738-3, Springer, Berlin, pp. 539-546

Duenas A., Di Martinelly C., Fagnot I., (2013), *An approach based on an Interactive Procedure for Multiple Objective Optimisation Problems*, in: F. Castro, A. Gelbukh and M. Gonzalez(Eds.), *MICAI 2013, Part II. Lecture Notes in Artificial Intelligence*, 0, Springer, Berlin, pp. 450-465

Duenas A., (2013), *Cost-Minimization Analysis*, in: Gellman, M., Turner, J. R.(Eds.), *Encyclopedia of Behavioral Medicine*, 978-1-4419-1004-2, Springer, New York

Duenas A., Petrovic D., Petrovic S., (2005), *Analysis of performance of fuzzy logic-based production scheduling by simulation*, in: Gelbukh, A., Terashima, H.(Eds.), *MICAI 2005: Advances in Artificial Intelligence*, 978-3-540-29896-0, Springer, London, pp. 234-243

Forthcoming

Duenas A., Di Martinelly C., Tütüncü Y., Aguado J., (2017), A multi-objective hospital operating room planning and scheduling problem using compromise programming, in: Grigori Sidorov, Oscar Herrera-Alcantara(Eds.), *Advances in Computational Intelligence. 15th Mexican International Conference on Artificial Intelligence, Micai 2016, Cancun, Quintana Roo, Mexico, October 23 to 29, 2016. Proceedings, Part I. Lecture Notes in Artificial Intelligence*, Springer, Berlin, pp. 377-388

Case studies

Duenas A., (2017), *Toblerone size change; Please don't tell me it was BREXIT!*, *The Case Centre*, case study 617-0013-1, teaching note 617-0013-8, IESEG School of Management

Duenas A., Fagnot I., (2014), *To Hack or Not to Hack: That is the Question*, *Case Centre*, case study 914-013-1, teaching note 914-013-8

Fagnot I., Duenas A., (2013), *Marks and Spencer: The beginning of a new business or reconquering France?*, *Case Centre*, case study 913-023-1, teaching note 913-023-8

Di Martinelly C., Meskens N., Duenas A., (2013), *Buena Vista Hospital: Operating Room Scheduling*, *European Case Clearing House*, case study 613-009-1, teaching note 613-009-8

Duenas A., Fagnot I., (2013), *England and Summary Care Records: Join the Debate*, *European Case Clearing House*, case study 913-003-1, teaching note 913-003-8

Duenas A., Di Martinelly C., (2013), *Do Not Break that Cup!: The Case of a Pottery Company*, *European Case Clearing House*, case study 613-036-1, teaching note 613-036-8

Duenas A., Fagnot I., Leclercq A., (2012), *The strange case of Mr. Wordsworth: A hospital information security breach*, *European Case Clearing House*, case study 912-018-1, teaching note 912-018-8

Duenas A., Tütüncü Y., Di Martinelly C., (2012), *Buena Vista Go Home Healthy Hospital: A Bed Capacity*, *European Case Clearing House*, case study 612-034-1, teaching note 612-034-8

Fagnot I., Duenas A., Di Martinelly C., (2012), *Adapting or not Adapting Digitization of Health Information: The Case of England and Summary Care Records*, *European Case Clearing House*, case study 912-040-1, teaching note 912-040-8

Research reports

Duenas A., Everson-Hock E., Jones R., Guillaume L., Goyder E., (2010), *The cost-effectiveness of support services for transition to adulthood/leaving care on the adult outcomes of looked after young people*, University of Sheffield, 40 pages

Duenas A., Rawdin A., Chilcott J., Messina J., Johnson M., (2010), *The cost-effectiveness of weight management interventions following childbirth*, University of Sheffield- commissioned by NICE, 37 pages

Duenas A., Gillett M., Brennan A., Akehurst R., (2009), *Modelling the cost effectiveness of Vildagliptin for the treatment of Type 2 Diabetes in Norway*, University of Sheffield -Confidential report - consultancy project

Duenas A., Gillett M., Brennan A., Akehurst R., (2008), *Modelling the cost effectiveness of Vildagliptin for the treatment of Type 2 Diabetes in Sweden*, University of Sheffield -Confidential report - consultancy project

Duenas A., Gillett M., Brennan A., Akehurst R., (2008), *Modelling the cost effectiveness of Vildagliptin for the treatment of Type 2 Diabetes in Finland*, University of Sheffield -Confidential report - consultancy project

Brennan A., Duenas A., Gillett M., (2007), *Using The Sheffield Type 2 Diabetes Policy Model To Support Budget Impact Modelling*, University of Sheffield -Confidential report - consultancy project

Gillett M., Duenas A., Brennan A., Akehurst R., (2007), *Modelling the cost effectiveness of Vildagliptin for the treatment of Type 2 Diabetes in Australia*, University of Sheffield -Confidential report - consultancy project

Gillett M., Brennan A., Duenas A., Akehurst R., (2007), *Modelling the cost effectiveness of Vildagliptin for the treatment of Type 2 Diabetes (Phase 2): Incorporating the cost of Heart Failure and Edema*, University of Sheffield -Confidential report - consultancy project

Gillett M., Brennan A., Duenas A., Akehurst R., (2007), *Modelling the cost effectiveness of Vildagliptin for the treatment of Type 2 Diabetes (Phase 1)*, University of Sheffield -Confidential report - consultancy project

Gillett M., Brennan A., Duenas A., Akehurst R., (2007), *Modelling the cost effectiveness of Vildagliptin for the treatment of Type 2 Diabetes in Switzerland*, University of Sheffield -Confidential report - consultancy project

Grants

- 2016 Planification et re-planification des infirmières dans un département d'oncologie en suivant une approche multi-objectif et interdisciplinaire, Conseil Régional Nord - Pas de Calais (France)
- 2014 Prise de décision en Santé Publique : une approche de décision multicritères, Lille Metropole et L'Universite Catholique de Lille (France)
- 2010 ESRC PhD studentship together with NICE Public Health on the project
- 2008 Modelling the cost effectiveness of Vildagliptin for the treatment of Type 2, Country adaptations (Norway, Sweden, Korea, Finland, Australia)

EDITORIAL ACTIVITY

Reviewer in an academic journal

Health Policy

Value in Health Regional Issues

Value in Health

EJOR

PROFESSIONAL SERVICE

Reviewer - Grant proposal related to expertise

- 2012 Grants for Applied Research of the Department of Health Programme in the United Kingdom, United Kingdom
- 2011 Grants for Applied Research of the Department of Health Programme in the United Kingdom, United Kingdom
- 2010 Grants for Applied Research of the Department of Health Programme in the United Kingdom, United Kingdom

Reviewer for an academic conference

- 2012 ISPOR 15th Annual European Congress
- 2012 ISPOR 17th Annual International Meeting
- 2011 Society for Medical Decision Making Annual Meeting

INSTITUTIONAL SERVICE

Supervision of Ph.D. Thesis:

- 2014 Director, Prise de décision en Santé Publique : une approche de décision multicritères
- 2013 Director, An Economic Evaluation of the A(H1N1) flu Vaccine in Mexico: An individual level model
- 2013 Director, Multi-criteria approaches to public health decision making