

RUTH MISENER

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Department of Computing
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RESEARCH DOMAIN: OPTIMISATION METHODS & COMPUTATION

FOUNDATIONS

Mixed-integer nonlinear optimisation (MINLP), Computational & numerical optimisation, Software implementations for global optimisation, Process systems engineering

APPLICATIONS

Bioprocess optimisation under uncertainty, Cell cycle modelling, Optimising energy efficiency of chemical & petrochemical plants, Process network design & operations, Scheduling

PROFESSIONAL APPOINTMENTS

Imperial College		London, UK
<i>Senior Lecturer</i>	Department of Computing	2017-
<i>Lecturer</i>	Department of Computing	2014-17
<i>Royal Academy of Eng. Research Fellow</i>	Centre for Process Systems Engineering	2012-14

EDUCATION

Princeton University		Princeton, NJ
<i>PhD</i> in Chemical Engineering. Advised by Professor C. A. Floudas.		2012
<i>Thesis Title:</i> Novel Global Optimization Methods: Theoretical & Computational Studies on Pooling Problems with Environmental Constraints		
Massachusetts Institute of Technology		Cambridge, MA
<i>Bachelor of Science</i> in Chemical Engineering; Minor in Political Science		2007

AWARDS

FELLOWSHIPS / SCHOLARSHIPS

Engineering & Physical Sciences Research Council Early Career Fellowship	2017-22
Royal Academy of Engineering Research Fellowship	2012-17
Imperial College Junior Research Fellowship (<i>declined in favour of the RAEng Fellowship</i>)	2012-15
USA National Science Foundation Graduate Research Fellowship	2007-12
Princeton University Gordon Y. S. Wu Fellowship	2007-12
Robert C. Byrd Honors Scholarship	2003-07

AWARDS

Suzanne C. and Duncan A. Mellichamp Distinguished Lecture, Georgia Tech	2018
Finalist for <i>Best Teaching for Postgraduates</i> , Imperial Student Academic Choice Award	2018
Sir George Macfarlane Medal	2017
RAEng Engineers Trust Young Engineer of the Year	2017
American Institute of Chemical Engineers 35 Under 35, <i>Innovation</i> Category	2017
Finalist for <i>Best Innovation in Teaching</i> , Imperial Student Academic Choice Award	2016
W. David Smith, Jr. Graduate Student Paper Award	2014
Best Paper of 2013, <i>Journal of Global Optimization</i>	awarded in 2014
Top Reviewer, <i>Computers & Chemical Engineering</i>	2013
Best Poster, 2 nd Belgian Symposium on Tissue Engineering	2013

Excellence in Teaching, Princeton School of Engineering & Applied Sciences 2010
 Member, *MIT Tau Beta Pi - Engineering Honor Society* 2007
 The top 20% of MIT Engineering Undergraduates are eligible for TBP

AWARDS TO MY STUDENTS & ASSOCIATES

I am privileged to work with talented, motivated researchers. The following list is limited to my team members' achievements where I made some (often small!) contribution, e.g. as thesis supervisor.

1 st Poster Prize, UK/Ireland Annual Meeting of the Society for Industrial & Applied Mathematics	<i>Kouyialis</i>	2018	
2 nd Poster Prize, Centre for Process Systems Engineering Annual Industrial Consortium Meeting	<i>Kouyialis</i>	2017	
Winton Capital Applied Computing MSc Project Prize	<i>Wesselhoeft</i>	2017	
1 st Poster Prize, PSE@ResearchDayUK	<i>Kouyialis</i>	2017	
2 nd Prize, Top Presentation at the Dept. of Computing Research Associate Symposium	<i>Letsios</i>	2017	
IBM PhD Fellowship	<i>Baltean-Lugojan</i>	2017	
FOCAPO/CPC Travel Grant	<i>Kouyialis</i>	2017	
Donald Davies Memorial Prize for MEng Thesis	<i>Mistry</i>	2015	
Prizes in Dept. of Computing Google Poster Competition	{	<i>Olofsson</i>	2018
		<i>Baltean-Lugojan</i>	2016
		<i>Kouyialis</i>	2015
2 nd Prize, Nobuyuki Idei Young Entrepreneur Award	<i>Fuentes-Garí</i>	2013	

NUMERICAL SOFTWARE & MATHEMATICAL MODELS

The following implementations are primarily written by me. Implementations of my group's optimisation algorithms, i.e. code primarily written by my team, are on our [GitHub](#) account.

SOFTWARE

S03 Misener R., Floudas C. A. [ANTIGONE](#): Algorithms for coNTinuous / Integer Global Optimization of Nonlinear Equations; 2013.

ANTIGONE is commercial through Princeton and the [GAMS Development Corp.](#)

S02 Misener R., Floudas C. A. [GloMIQO](#): Global Mixed-Integer Quadratic Optimizer; 2012.

GloMIQO is commercial through Princeton and the [GAMS Development Corp.](#)

[ANTIGONE/GloMIQO](#) is used for research and industry worldwide. Both are joint with Prof Floudas and commercial through Princeton/[GAMS](#).

S01 Misener R., Thompson J. P., Floudas C. A. Algorithms for Pooling-problem global Optimization in GEneralized and Extended classes ([APOGEE](#)); 2010.

APOGEE is a freely available tool for solving industrially-relevant pooling problems

MODELS

M02 Misener R., Floudas C. A. [Generalized Pooling Problem](#). Available from [CyberInfrastructure for MINLP](#); 2011.

M01 Misener R., Gounaris C. E., Floudas C. A. [Extended Pooling Problem with the Summer Time \(EPA\) Complex Emissions Constraints](#). Available from [CyberInfrastructure for MINLP](#); 2010.

PEER-REVIEWED JOURNAL PAPERS ([GOOGLE SCHOLAR](#))

J34 Olofsson S., Mehrian M., Calandra R., Geris L., Deisenroth M. P., **Misener R.** Bayesian Multi-Objective Optimisation with Mixed Analytical and Black-Box Functions: Application to Tissue Engi-

neering, *IEEE Transactions on Biomedical Engineering*, DOI 10.1109/TBME.2018.2855404, 2018.

- J33** Misener R., Allenby M. C., Fuentes-Garí M., Gupta K., Wiggins T., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Stem Cell Biomanufacturing under Uncertainty: A Case Study in Optimizing Red Blood Cell Production, *AIChE Journal*, **64**:3011 - 3022, 2018.

The editors invited future chemical engineering leaders to contribute research for Futures Series. Of the 25 researchers appearing in the founding issue, I am 1 of 6 invited to present at a special session in the upcoming AIChE meeting ([weblink](#)).

- J32** Baltean-Lugojan R., Misener R., Piecewise Parametric Structure in the Pooling Problem – from Sparse Strongly-Polynomial Solutions to NP-Hardness, *Journal of Global Optimization*, **71**:655 - 690, 2018. **Invited article for a special issue in memory of Professor C. A. Floudas**

- J31** Mistry M., Callia D'Iddio A., Huth M., Misener R. Satisfiability Modulo Theories for Process Systems Engineering, *Computers & Chemical Engineering*, **113**:98 - 114, 2018.

Invited article for a special issue dedicated to FOCAP0/CPC 2017

- J30** Letsios D., Kouyialis G., Misener R. Heuristics with Performance Guarantees for the Minimum Number of Matches Problem in Heat Recovery Network Design, *Computers & Chemical Engineering*, **113**:57 - 85, 2018. **Invited article for a special issue in memory of Professor C. A. Floudas**

- J29** Mehrian M., Guyot Y., Papantoniou I., Olofsson S., Sonnaert M., Misener R., Geris L. Maximizing Neotissue Growth Kinetics in a Perfusion Bioreactor: An *In Silico* Strategy Using Model Reduction and Bayesian Optimization, *Biotechnology & Bioengineering*, **115**:617 - 629, 2018.

- J28** Allenby M. C., Misener R., Panoskaltis N., Mantalaris A. A quantitative three-dimensional (3D) image analysis tool for maximal acquisition of spatial heterogeneity data. *Tissue Engineering Part C: Methods*; **23**:108 - 117, 2017.

- J27** Savvopoulos S. V., Misener R., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. A Personalized Framework for Dynamic Modeling of Disease Trajectories in Chronic Lymphocytic Leukemia. *IEEE Transactions on Biomedical Engineering*; **63**:2396 - 2404, 2016.

- J26** Ceccon F., Kouyialis G., Misener R. Using Functional Programming to recognize Named Structure in an Optimization Problem: Application to Pooling. *AIChE Journal*; **62**:3085 - 3095, 2016.

Invited article for Tribute to Founders: Roger Sargent. Process Systems Engineering

- J25** Mistry M., Misener R. Optimising Heat Exchanger Network Synthesis using Convexity Properties of the Logarithmic Mean Temperature Difference. *Computers & Chemical Engineering*; **94**:1 - 17, 2016.

- J24** Boukouvala F., Misener R., Floudas C. A. Global Optimization Advances in Mixed-Integer Nonlinear Programming, MINLP, and Constrained Derivative-Free Optimization, CDFO. *European Journal of Operational Research*; **252**:701 - 727, 2016.

- J23** Fuentes-Garí M., Misener R., Georgiadis M. C., Kostoglou M., Pistikopoulos E. N., Panoskaltis N., Mantalaris A. Selecting a differential equation cell cycle model for simulating leukemia treatment; *Industrial & Engineering Chemistry Research*; **54**:8847 - 8859, 2015.

- J22** Velliou E., Brito dos Santos S., Papathanasiou M. M., Fuentes-Garí M., Misener R., Panoskaltis N., Mantalaris A., Pistikopoulos E. N. Towards unravelling the kinetics of an Acute Myeloid Leukaemia model system under oxidative and starvation stress: A comparison between two and three dimensional cultures; *Bioprocess & Biosystems Engineering*; **38**:1589 - 1600, 2015.

- J21** Fuentes-Garí M., Velliou E., Misener R., Pefani E., Rende M., Panoskaltis N., Mantalaris A., Pistikopoulos E. N. A systematic framework for the design, simulation and optimization of personalized healthcare: Making and healing blood; *Computers & Chemical Engineering*; **81**:80 - 93, 2015.

- J20** Fuentes-Garí M., Misener R., García-Münzer D., Velliou E., Georgiadis M. C., Kostoglou M., Pistikopoulos E. N., Panoskaltis N., Mantalaris A. A mathematical model of sub-population kinetics for the deconvolution of leukaemia heterogeneity. *Journal of The Royal Society Interface*; **12**(108), 2015.

- J19 Misener R.**, Smadbeck J. B., Floudas C. A. Dynamically-generated cutting planes for mixed-integer quadratically-constrained quadratic programs and their incorporation into GloMIQO 2; *Optimization Methods & Software*; **30**:215 - 249, 2015.
- J18 Velliou E.**, Brito dos Santos S., Fuentes-Garí M., **Misener R.**, Pefani E., Panoskaltis N., Mantalaris A., Pistikopoulos E. N. Key environmental stress biomarker candidates for the optimisation of chemotherapy treatment of leukaemia; *Malta Journal of Health Sciences*; **1**:29 - 34, 2014.
- J17 Misener R.**, Fuentes-Garí M., Rende M., Velliou E., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Global Superstructure Optimisation of Red Blood Cell Production in a Parallelised Hollow Fibre Bioreactor, *Computers & Chemical Engineering*; **71**:532 - 553, 2014.
- J16 Misener R.**, Floudas C. A. ANTIGONE: Algorithms for coNTinuous / Integer Global Optimization of Nonlinear Equations, *Journal of Global Optimization*; **59**:503 - 526, 2014.
- J15 Misener R.**, Floudas C. A. A framework for globally optimizing mixed-integer signomial programs. *Journal of Optimization Theory & Applications*; **161**:905 - 932, 2014.
- J14 Misener R.**, Floudas C. A. GloMIQO: Global Mixed-Integer Quadratic Optimizer. *Journal of Global Optimization*; **57**:3 - 50, 2013. **Journal of Global Optimization Best Paper of 2013**
W. David Smith, Jr. Graduate Student Paper Award, 2014
- J13 Misener R.**, Floudas C. A. Global Optimization of Mixed-Integer Models with Quadratic and Signomial Functions: A Review. *Applied Computational Math.*; **11**:317 - 336, 2012.
- J12 Skjäl A.**, Westerlund T., **Misener R.**, Floudas C. A. A Generalization of the Classical α BB Convex Underestimation via Diagonal and Non-Diagonal Quadratic Terms. *Journal of Optimization Theory & Applications*; **154**:462 - 490, 2012.
- J11 Misener R.**, Floudas C. A. Global Optimization of Mixed-Integer Quadratically Constrained Quadratic Programs (MIQCQP) through Piecewise-Linear and Edge-Concave Relaxations. *Mathematical Programming, Series B*; **136**:155 - 182, 2012.
W. David Smith, Jr. Graduate Student Paper Award, 2014
- J10 Li J.**, **Misener R.**, Floudas C. A. Scheduling of Crude Oil Operations under Demand Uncertainty: A Robust Optimization Framework with Global Optimization. *AIChE Journal*; **58**:2373 - 2396, 2012.
- J09 Baliban R. C.**, Elia J. A., **Misener R.**, Floudas C. A. Global optimization of a MINLP process synthesis model for thermochemical based conversion of hybrid coal, biomass, and natural gas to liquid fuels. *Computers & Chemical Engineering*; **42**: 64 - 86; 2012.
- J08 Li J.**, **Misener R.**, Floudas C. A. Continuous-Time Modeling and Global Optimization Approach for Scheduling of Crude Oil Operations. *AIChE Journal* **58**: 205 - 226; 2012.
- J07 Misener R.**, Thompson J. P., Floudas C. A. APOGEE: Global Optimization of Standard, Generalized, and Extended Pooling Problems via Linear and Logarithmic Partitioning Schemes. *Computers & Chemical Engineering* **35**: 876 - 892; 2011.
- J06 Misener R.**, Gounaris C. E., Floudas C. A. Mathematical Modeling and Global Optimization of Large-Scale Extended Pooling Problems with the (EPA) Complex Emissions Constraints. *Computers & Chemical Engineering* **34**: 1432 - 1456; 2010.
- J05 Misener R.**, Floudas C. A. Global Optimization of Large-Scale Generalized Pooling Problems: Quadratically Constrained MINLP Models. *Industrial & Engineering Chemistry Research* **49**: 5424 - 5438; 2010.
- J04 Misener R.**, Floudas C. A. Piecewise-Linear Approximations of Multidimensional Functions. *Journal of Optimization Theory & Applications* **145**: 120 - 147; 2010.
- J03 Misener R.**, Floudas C. A. Advances for the Pooling Problem: Modeling, Global Optimization, & Computational Studies. *Applied & Computational Math.* **8**: 3 - 22; 2009.

- J02 Misener R.**, Gounaris C. E., Floudas C. A. Global Optimization of Gas Lifting Operations: A Comparative Study of Piecewise Linear Formulations. *Industrial & Engineering Chemistry Research* **48**: 6098 - 6104; 2009.
- J01** Gounaris C. E., **Misener R.**, Floudas C. A. Computational Comparison of Piecewise-Linear Relaxations for Pooling Problems. *Industrial & Engineering Chemistry Research* **48**: 5742 - 5766; 2009.

PEER-REVIEWED CONFERENCE PROCEEDINGS

- C24** Olofsson S., Deisenroth M. P., **Misener R.** Design of Experiments for Model Discrimination Hybridising Analytical and Data-Driven Approaches. *Proceedings of the 35th International Conference on Machine Learning*, PMLR **80**:3905 - 3914, 2018.
Acceptance Rate = 25%. We were given a long, 20 min presentation
- C23** Olofsson S., Deisenroth M. P., **Misener R.** Optimal Design of Experiments for Model Discrimination using Gaussian Process Surrogate Models. In Eden et al. (Eds), Proceedings of the 13th International Symposium on Process Systems Engineering. Vol. 44 of *Computer-Aided Chemical Engineering*. San Diego, CA; 2018, pp 847 - 852.
- C22** Wesselhoeft C., Ham D., **Misener R.** Algorithms for Mixed-Integer Optimization Constrained by Partial Differential Equations. In Eden et al. (Eds), Proceedings of the 13th International Symposium on Process Systems Engineering. Vol. 44 of *Computer-Aided Chemical Engineering*. San Diego, CA; 2018, pp 799 - 804.
- C21** Olofsson S., Mehrian M., Geris L., Calandra R., Deisenroth M. P., **Misener R.** Bayesian Multi-Objective Optimisation of Neotissue Growth in a Perfusion Bioreactor Set-Up. In España et al. (Eds), Proceedings of the European Symposium on Computer Aided Process Engineering. Vol. 39 of *Computer-Aided Chemical Engineering*. Barcelona, ES; 2017, pp 2155 - 2160.
- C20** Mistry M., **Misener R.** Integrating Mixed-Integer Optimisation & Satisfiability Modulo Theories: Application to Scheduling. In Maravelias et al. (Eds), Foundations of Computer Aided Process Operations/Chemical Process Control, FOCAPO/CPC. Tucson, AZ; 2017.
Invited article for the Young Investigator Session
- C19** Kouyialis G., **Misener R.** Detecting Symmetry in Designing Heat Exchanger Networks. In Maravelias et al. (Eds), Foundations of Computer Aided Process Operations/Chemical Process Control, FOCAPO/CPC. Tucson, AZ; 2017.
- C18** Allenby M. C., Tahlawi A., **Misener R.**, Brito dos Santos S., Mantalaris A., Panoskaltis N. Spatiotemporal Mapping of Erythroid, Stromal, and Osteogenic Niche Formation to Support Physiologic Red Cell Production in a 3-Dimensional Hollow Fibre Perfusion Bioreactor. *Blood*, **128**; 2016; p 3885.
- C17** Ulmasov D., Baroukh C., Chachuat B., Deisenroth M. P., **Misener R.** Bayesian Optimisation with Dimension Scheduling Algorithm: Application to Biological Systems. In Kravanja, Bogataj (Eds), 26th European Symposium on Computer Aided Process Engineering. Vol. 38 of *Computer-Aided Chemical Engineering*. Portorož, SI; 2016; pp 1051 - 1056.
- C16** Fuentes-Garí M., Zemenides S., **Misener R.**, Georgiadis M. C., Pistikopoulos E. N., Mantalaris A., Panoskaltis N. Use of Mathematical Modelling Indicates That Patients Treated for Acute Myeloid Leukaemia (AML) Are Undertreated When Ideal Body Weight Is Used to Dose Chemotherapy. *Blood*, **126**; 2015; p 4522.
- C15** Allenby M. C., Tahlawi A., Brito Dos Santos S., Hwang Y. S., **Misener R.**, Panoskaltis N., Mantalaris A. Development of an ex vivo bone marrow mimicry microenvironment in a novel 3D hollow fibre bioreactor. *Experimental Hematology*; **43**; 2015; p S51.
- C14** Fuentes-Garí M., **Misener R.**, Georgiadis M. C., Kostoglou M., Pistikopoulos E. N., Panoskaltis N., Mantalaris A. Chemotherapy Optimization in Leukemia: Selecting the Right Mathematical Models for the Right Biological Processes. 9th IFAC Symposium on Biological & Medical Systems. Vol. 48 of *IFAC-PapersOnLine*. Berlin, DE; 2015; pp 534 - 539.

- C13** Allenby M. C., Tahlawi A., Brito Dos Santos S., **Misener R.**, Hwang Y., Panoskaltis N., Mantalaris A. Development of a hematopoietic microenvironment for the production of red blood cells (RBCs) in a novel 3D hollow fibre bioreactor. *Tissue Engineering Part A*. 21, 2015; pp S15 - S16.
- C12** Savvopoulos S. V., **Misener R.**, Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Global Sensitivity Analysis for a Dynamic Model of Chronic Lymphocytic Leukemia Disease Trajectories. In Gernaey et al. (Eds), 12th International Symposium on Process Systems Engineering. Vol. 37 of *Computer-Aided Chemical Engineering*. Copenhagen, DK; 2015; pp 185 - 190.
- C11** Fuentes-Garí M., **Misener R.**, Pefani E., García-Münzer D., Kostoglou M., Georgiadis M. C., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Cell cycle model selection for leukemia and its impact in chemotherapy outcomes. In Gernaey et al. (Eds), 12th International Symposium on Process Systems Engineering. Vol. 37 of *Computer-Aided Chemical Engineering*. Copenhagen, DK; 2015; pp 2159 - 2164
- C10** **Misener R.**, Allenby M. C., Fuentes-Garí M., Rende M., Velliou E., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Optimisation under uncertainty for a bioreactor that produces red blood cells. *J. Tissue Eng. Regen. Med.*; 8; 2014; p 481.
- C09** Fuentes-Garí M., **Misener R.**, García-Münzer D., Velliou E., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Development and experimental validation of cyclin-based population balance model of the cell cycle in leukaemia cell lines. *J. Tissue Eng. Regen. Med.*; 8; 2014; p 489.
- C08** Velliou E., Brito Dos Santos S., Fuentes-Garí M., **Misener R.**, Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Evolution of an AML model system under oxidative and starvation stress: A comparison between two and three dimensional cultures. *J. Tissue Eng. Regen. Med.*; 8; 2014; p 483.
- C07** Velliou E., Fuentes-Garí M., **Misener R.**, Pefani E., Rende M., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. A framework for the design, modeling and optimization of biomedical systems. In Eden, Siirola, Towler (Ed.), 8th International Conference on Foundations of Computer-Aided Process Design. Vol. 34 of *Computer-Aided Chemical Engineering*. Cle Elum, WA; 2014; pp 225 - 236.
- C06** **Misener R.**, Chin J., Lai M., Fuentes-Garí M., Velliou E., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Robust Superstructure Optimisation of a Bioreactor that Produces Red Blood Cells. In Klemeš, Varbanov, Liew (Ed.), 24th European Symposium on Computer Aided Process Engineering. Vol. 33 of *Computer-Aided Chemical Engineering*. Budapest, Hungary; 2014; pp 91 - 96.
- C05** Skjäl A., Westerlund T., **Misener R.**, Floudas C. A. A Generalization of Classical α BB Underestimation to Include Bilinear Terms. In Bogle, Fairweather (Ed.), 22nd European Symposium on Computer Aided Process Engineering. Vol. 30 of *Computer-Aided Chemical Engineering*. London, UK; 2012; pp 1202 - 1206.
- C04** **Misener R.**, Floudas C. A. Global Optimization of Large-Scale Extended and Generalized Pooling Problems: Mixed-Integer Nonlinearly Constrained Models. *Proceedings of the Toulouse Global Optimization Workshop*, Toulouse, FR; 2010; pp 89 - 92.
- C03** **Misener R.**, Gounaris C. E., Floudas C. A. Global Optimization and Parametric Analysis of Large-Scale Extended Pooling Problems. In Pierucci, Ferraris (Ed.), 20th European Symposium on Computer Aided Process Engineering. Vol. 28 of *Computer-Aided Chemical Engineering*. Naples, IT; 2010; pp 847 - 852.
- C02** **Misener R.**, Gounaris C. E., Floudas C. A. Advances In Global Optimization for Standard, Generalized, and Extended Pooling Problems with the (EPA) Complex Emissions Model Constraints. 7th International Conference on Foundations of Computer-Aided Process Design. Breckenridge, CO; 2009; pp 1053 - 1073.
- C01** **Misener R.**, Gounaris C. E., Floudas C. A. Multidimensional Piecewise-Affine Approximations for Gas Lifting and Pooling Applications. 7th International Conference on Foundations of Computer-Aided Process Design. Breckenridge, CO; 2009; pp 887 - 896.

PUBLICATIONS WRITTEN FOR A GENERAL AUDIENCE

GO2 Misener R. Christodoulos Achilleus Floudas. SIAG/OPT Views and News. **24**(1): 12 - 16, 2016.

GO1 Misener R. Deterministic Global Optimisation at CPSE: Models, Algorithms, and Software. Centre for Process Systems Engineering Newsletter, Issue 10, 2014.

KEYNOTE / PLENARY PRESENTATIONS

UPCOMING

K11 Misener R. Gaussian Processes for Hybridizing Analytical & Data-Driven Decision-Making, *AICHE Annual Meeting*. Presentation as a part of [AICHE's 110 Year Celebration](#). Pittsburgh, USA; 10/2018.
Joint work with S Olofsson, J Wiebe, MP Deisenroth

K10 Misener R. Title TBA, *Conference on the Mathematics of Gas Transport*. Plenary. Berlin, DE; 10/2018.

PAST

K09 Misener R., Mitsos A. Process Systems Engineering Optimization: Mixed-Integer Nonlinear Programming & Beyond, *Process Systems Engineering (PSE-2018)*. Joint keynote. San Diego, CA, 07/2018.

K08 Misener R. Optimisation for energy efficiency, *Department of Computing Research Associate Symposium*. Keynote. Imperial, 06/2018.

K07 Misener R. Approximation Algorithms for Process Systems Engineering, *28th European Symposium on Computer Aided Process Engineering (ESCAPE 2018)*. Keynote. Graz, AT, 06/2018.
Joint work with D Letsios, G Kouyialis

K06 Misener R. Online generation via offline selection of strong linear cuts from QP SDP relaxation, *15th International Conference on Computational Management Science (CMS 2018)*. Semi-plenary. Trondheim, NO, 05/2018.
Joint work with R Baltean-Lugojan, P Bonami, A Tramontani

K05 Misener R. Online generation via offline selection of strong linear cuts from QP SDP relaxation, *SCIP Workshop*. Plenary. Aachen, DE, 03/2018.
Joint work with R Baltean-Lugojan, P Bonami, A Tramontani

K04 Misener R. Optimisation under Uncertainty: Engineering & Life, *Royal Academy of Engineering Fellows' Day*. Keynote. London, UK, 02/2018.

K03 Misener R. Optimisation for Gradient Boosted Trees with Risk Control, *Annual Meeting of the Society for Industrial & Applied Mathematics (SIAM), UK & Republic of Ireland Section (UKIE)*. Plenary. Southampton, UK, 01/2018.
Joint work with M Mistry, D Letsios, RM Lee, G Krennich
Sponsored by the Institute of Mathematics & its Applications (IMA)

K02 Misener R. Designing Energy-Efficient Heat Recovery Networks using Mixed-Integer Nonlinear Optimisation, *16th International Symposium on Experimental Algorithms*. Plenary. London, UK, 06/2017.
Joint work with R Baltean-Lugojan, F Cecccon, M Mistry

K01 Misener R. Making and Healing Blood: An Engineer's Approach, *Royal Academy of Engineering Research Forum*. Keynote. London, UK, 09/2013.

INVITED SEMINARS

UPCOMING

S19 Misener R. Title TBA. Department of Chemical Engineering, University of Wisconsin, Madison; Invited by Prof V Zavala; 12/2018.

S18 Misener R. Title TBA. School of Chemical & Biomolecular Engineering, Georgia Institute of Technology, Atlanta; 09/2018. **Suzanne C. & Duncan A. Mellichamp Distinguished Lecture**

S17 Misener R. Title TBA. Institute of Information Engineering, Automation & Mathematics, Slovak University of Technology, Bratislava; Invited by Prof R Paulen; 09/2018.

PAST

- S16 Misener R.** Lexicographic Optimisation for Rescheduling. LIX, Laboratoire d'Informatique de l'École Polytechnique; Invited by Dr C D'Ambrosio; 07/2018. *Joint work with D Letsios*
- S15 Misener R.** Optimisation for Gradient Boosted Trees with Risk Control. Department of Chemical Engineering, RWTH Aachen, DE; Invited by Prof A Mitsos; 03/2018. *Joint work with M Mistry, D Letsios, RM Lee, G Krennich*
- S14 Misener R.** Optimisation for Gradient Boosted Trees with Risk Control. Mathematical Institute, University of Oxford, UK; Invited by Prof C Cartis; 02/2018. *Joint work with M Mistry, D Letsios, RM Lee, G Krennich*
- S13 Misener R.** Heuristics with Performance Guarantees for the Minimum Number of Matches in Heat Recovery Networks. School of Chemical Engineering & Analytical Science, University of Manchester, UK; Invited by Dr J Li; 02/2018. *Joint work with D Letsios, G Kouyialis*
- S12 Misener R.** Lexicographic Optimization for Rescheduling. Department of Econometrics & Operations Research, Tilburg University, NL; Invited by Prof E de Klerk; 12/2017. *Joint work with D Letsios*
- S11 Misener R.** Lexicographic Optimization for Rescheduling. Royal Mail Data Science Group, UK; Invited by Dr J Bradley; 12/2017. *Joint work with D Letsios*
- S10 Misener R.** Mixed-Integer Nonlinear Optimisation: Energy Efficiency Applications. School of Mathematics, University of Birmingham, UK; Invited by Prof M Kočvara; 11/2016. *Joint work with R Baltean-Lugojan, F Ceccon, M Mistry*
- S09 Misener R.** Mixed-Integer Nonlinear Optimisation: Energy Efficiency Applications. Department of Chemical Engineering, University of Surrey, UK; Invited by Dr E Velliou; 10/2016. *Joint work with R Baltean-Lugojan, F Ceccon, M Mistry*
- S08 Misener R.** Implementing algorithmic advances in mixed-integer nonlinear optimisation. Department of Mathematics, London School of Economics, UK; Invited by Prof G Zambelli; 01/2016.
- S07 Misener R.** Mixed-Integer Nonlinear Optimisation: Energy Efficiency Applications. School of Mathematics, University of Edinburgh, UK; Invited by Dr A Grothey & Prof K McKinnon; 10/2015. *Joint work with F Ceccon, M Mistry*
- S06 Misener R.** Stem Cell Bioprocessing under Uncertainty: A Case Study in Optimising Red Blood Cell Production. Centre for Computational Engineering Science, RWTH Aachen, DE; Invited by Prof A Mitsos; 02/2015. *Joint work with the Biological Systems Engineering Laboratory*
- S05 Misener R.** Global Optimisation for Process Optimisation. Process Systems Enterprise; London, UK; Invited by Dr P Kleniati; 01/2015.
- S04 Misener R.** Relating MINLP Model Formulations to Algorithmic Solution Strategies. Department of Electronics, Computer Sciences & Systems, University of Bologna, IT; Invited by Prof A Lodi; 06/2014.
- S03 Misener R.** Mixed-Integer Nonlinear Optimization: Foundations and Applications. Department of Computing, Imperial, UK; *Job Talk*; 03/2014.
- S02 Misener R.** Making and Healing Blood: An Engineer's Approach. Department of Chemical Engineering, University of Surrey, UK; Invited by Prof K Kirkby; 01/2014. *Joint work with the Biological Systems Engineering Laboratory*
- S01 Misener R.** Novel Global Optimization Methods: Theoretical & Computational Studies on Pooling Problems with Environmental Constraints. Centre for Process Systems Engineering, Imperial, UK; Invited by Prof E Pistikopoulos; 07/2011. *Joint work with CA Floudas*

INTERNATIONAL SCHOOLS

- Sc6 Misener R.** Global Optimisation [3 hr lecture]. *Centre for Process Systems Engineering Advanced Optimisation Course*, Imperial, UK; Invited by Prof C Adjiman; 05/2017.

- Sc5 Misener R.** Mixed-Integer Nonlinear Optimisation [2 hr lecture \times 10 days]. *Visiting Professor, Vienna Graduate School On Computational Optimization*, Vienna, AT; Invited by Prof G Pflug; 05/2017.
- Sc4 Misener R.** Introduction to Global Optimisation [2 hr lecture]. *Centre for Process Systems Engineering Introduction to Optimisation Course*, Imperial, UK; Invited by Prof C Adjiman; 04/2017.
- Sc3 Misener R.** Introduction to Global Optimisation [2 hr lecture]. *Centre for Process Systems Engineering Introduction to Optimisation Course*, Imperial, UK; Invited by Prof C Adjiman; 05/2016.
- Sc2 Misener R.** Mixed-Integer Nonlinear Optimisation with Nonconvex Nonlinearities [3 hr lecture]. *MINO/ COST Spring School on Mixed Integer Nonlinear Programming and Applications*, Paris, FR; Invited by Dr C D'Ambrosio; 04/2016.
- Sc1 Misener R.** Global Optimisation [2 hr lecture]. *Centre for Process Systems Engineering Advanced Optimisation Course*, Imperial, UK; Invited by Prof C Adjiman; 04/2015.

INVITED CONFERENCE & WORKSHOP PRESENTATIONS [***PRESENTER**]

UPCOMING

- I23 Misener R.** Stem Cell Biomanufacturing under Uncertainty: A Case Study in Optimizing Red Blood Cell Production, *AIChE Annual Meeting*. Presentation as a part of [AIChE's Futures Series](#). Pittsburgh, USA; 10/2018. *Joint work with the Biological Systems Engineering Laboratory*
- I22 Baltean-Lugojan R., Misener R.***, Bonami P., Tramontani A. Online generation via offline selection of strong linear cuts from QP SDP relaxation. *Operations Research*, Brussels, BE; Invited by Dr T Berthold; 09/2018.

PAST

- I21 Cecon F., Misener R.** SUSPECT: MINLP Special Structure Detector for Python. *Optimization software, EURO*, Valencia, ES; Invited by Dr T Berthold; 07/2018.
- I20 Baltean-Lugojan R.*, Misener R.**, Bonami P., Tramontani A. Online generation via offline selection: Low dimensional linear cuts from QP SDP relaxation. *International Symposium on Mathematical Programming*, Bordeaux, FR; Invited by Prof C Cartis; 07/2018.
- I19 Mistry M.*, Letsios D., Misener R.**, Krennrich G., Lee R. M. Optimization with Gradient-Boosted Trees and Risk Control. *International Symposium on Mathematical Programming*, Bordeaux, FR; Invited by Prof H Mittelmann; 07/2018.
- I18 Letsios D.*, Misener R.** On Exact Lexicographic Optimization Methods and Approximate Recovery Strategies in Two-Stage Robust Makespan Scheduling. *Computational Integer Programming, International Symposium on Mathematical Programming*, Bordeaux, FR; Invited by Prof D Salvagnin; 07/2018.
- I17 Letsios D.*, Kouyialis G., Misener R.** Heuristics with Performance Guarantees for the Minimum Number of Matches in Heat Recovery Networks. *6th IMA Conference on Numerical Linear Algebra and Optimization*, Birmingham, UK; Invited by Prof C Cartis; 06/2018.
- I16 Kouyialis G., Letsios D., Misener R.*** Heuristics with Performance Guarantees for the Minimum Number of Matches in Heat Recovery Networks. *Multiscale Systems Engineering I: In Honor of Prof C A Floudas, AIChE Annual Meeting*, Minneapolis, USA; Invited by Prof E N Pistikopoulos; 10/2017.
- I15 Baltean-Lugojan R., Misener R.*** Piecewise Parametric Structure in the Pooling Problem – from Sparse Strongly-Polynomial Solutions to NP-Hardness. *Foundations of Computational Mathematics*, Barcelona, ES; Invited by Prof C Cartis & Prof E de Klerk; 07/2017.
- I14 Baltean-Lugojan R., Misener R.*** Piecewise Parametric Structure in the Pooling Problem – from Sparse Strongly-Polynomial Solutions to NP-Hardness. *15th EUROPT Workshop on Advances in Continuous Optimization*, Montréal, CA; Invited by Prof M Anjos; 07/2017.
- I13 Baltean-Lugojan R., Misener R.*** Globally Optimising Pooling Problems. *Chris Floudas Memorial Symposium*, Princeton, NJ; Invited by Prof F Boukouvala & Prof C Gounaris; 05/2017.

- I12** Mistry M., **Misener R.*** Integrating Mixed-Integer Optimization and Satisfiability Modulo Theories: Application to Planning and Scheduling. *Foundations of Computer Aided Process Operations*, Tucson, Arizona; Invited by Prof C Maravelias & Dr J Wassick; 01/2017.
- I11** Baltean-Lugojan R.*, **Misener R.** A Parametric Approach to the Pooling Problem. *5th International Conference on Continuous Optimization*, Tokyo, JP; 08/2016.
- I10** Ceccon F., **Misener R.*** Using Functional Programming to recognize Named Structure in an Optimization Problem: Application to Pooling. *5th International Conference on Continuous Optimization*, Tokyo, JP; Invited by Prof V Zavala; 08/2016.
- I09** Ceccon F., **Misener R.*** Using Functional Programming to recognize Named Structure in an Optimization Problem: Application to Pooling. *28th European Conference on Operational Research*, Poznan, PL; Invited by Dr T Berthold; 07/2016.
- I08** Baltean-Lugojan R., **Misener R.*** A Parametric Approach to the Pooling Problem. *Mixed Integer Programming Workshop*, Miami, USA; 05/2016.
- I07** Ceccon F., **Misener R.***. Detecting Pooling Network Structure. *Short Research Announcement at the Oberwolfach MINLP Workshop*, Oberwolfach, DE; 10/2015.
- I06** **Misener R.***, Mistry M. Solving MINLP with Heat Exchangers: Special Structure Detection and Large-Scale Global Optimisation. *22nd International Symposium on Mathematical Programming*, Pittsburgh, PA; Invited by Prof C Floudas; 07/2015.
- I05** **Misener R.*** Deterministic Global Optimisation for Process Optimisation. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; Invited by Prof N Shah; 12/2014.
- I04** **Misener R.***, Floudas C. A. Special Mathematical Structure Detection and Exploitation with ANTI-GONE. *Global Optimisation Workshop*, London, UK; Invited by Dr P Parpas; 12/2013.
- I03** **Misener R.*** Architecting ANTIGONE: Design Choices and Tradeoffs. *MODAL Workshop on MINLP Solver Technology*, Zuse-Institut Berlin, DE; Invited by Mr A Gleixner; 11/2013.
- I02** **Misener R.***, Floudas C. A. Globally Optimising Process Networks with ANTIGONE: Automatic Recognition and Adaptation Strategies. *COST Workshop on Mixed Integer Nonlinear Programming*, Paris, FR; Invited by Prof L Liberti; 10/2013.
- I01** **Misener R.***, Floudas C. A. ANTIGONE: A general mixed-integer nonlinear global optimisation framework. *4th International Conference on Continuous Optimization*, Lisbon, Portugal; Invited by Prof A Mitsos; 07/2013.

CONTRIBUTED CONFERENCE & WORKSHOP PRESENTATIONS [*PRESENTER]

UPCOMING

- P44** Wiebe J.*, **Misener R.** Robust Planning and Scheduling for Processes with Equipment Degradation. *AIChE Annual Meeting*, Pittsburgh, USA; 10/2018.
- P43** Baltean-Lugojan R., Bonami P., Tramontani A., **Misener R.*** Online Generation Via Offline Selection of Strong Linear Cuts from a Semidefinite Programming Relaxation. *AIChE Annual Meeting*, Pittsburgh, USA; 10/2018.

PAST

- P42** Olofsson S.*, Deisenroth M. P., **Misener R.** Design of Experiments for Model Discrimination Hybridising Analytical and Data-Driven Approaches. *International Conference on Machine Learning (ICML)*, Stockholm, SE; 07/2018. *Long 20 minute presentation*
- P41** Olofsson S.*, Deisenroth M. P., **Misener R.** Optimal Design of Experiments for Model Discrimination using Gaussian Process Surrogate Models. *13th International Symposium on Process Systems Engineering*, San Diego, USA; 07/2018.

- P40** Wesselhoeft C., Ham D., **Misener R.*** Algorithms for Mixed-Integer Optimization Constrained by Partial Differential Equations. *13th International Symposium on Process Systems Engineering*, San Diego, USA; 07/2018.
- P39** Mistry M., **Misener R.*** Integrating Mixed-Integer Optimisation and Satisfiability Modulo Theories. *AIChE Annual Meeting*, Minneapolis, USA; 10/2017.
- P38** Kouyialis G., Letsios D.*, **Misener R.** Heuristics with Performance Guarantees for the Minimum Number of Matches in Heat Recovery Networks. *Department of Computing Research Associate Symposium*, London, UK; 06/2017.
DL awarded 2nd Prize, Top Symposium Presenter (out of 10 entries)
- P37** Baltean-Lugojan R.*, **Misener R.** Piecewise Parametric Structure in the Pooling Problem – from Sparse Strongly-Polynomial Solutions to NP-Hardness. *Computational Management Science*, Bergamo, IT; 05/2017.
- P36** Olofsson S.*, Mehrian M., Geris L., Calandra R., Deisenroth M. P., **Misener R.** Bayesian Multi-Objective Optimisation of Neotissue Growth in a Perfusion Bioreactor Set-Up. *5th Belgian Symposium on Tissue Engineering*, Leuven, BE; 05/2017.
- P35** Baltean-Lugojan R.*, **Misener R.** Piecewise Parametric Structure in the Pooling Problem – from Sparse Strongly-Polynomial Solutions to NP-Hardness. *Mathematical Optimization in the Decision Support Systems for Efficient and Robust Energy Networks Final Conference*, Modena, IT; 03/2017.
- P34** Baltean-Lugojan R., **Misener R.** Deterministic Global Optimization of Large-Scale Pooling Problems Via Topological Branch-and-Bound. *AIChE Annual Meeting*, San Francisco, CA; 11/2016.
- P33** Ceccon F., **Misener R.*** Using Functional Programming to Recognize Named Structure in an Optimization Problem: Application to Pooling. *AIChE Annual Meeting*, San Francisco, CA; 11/2016.
- P32** Kouyialis G.*, **Misener R.** Detecting symmetry in designing heat exchanger networks. *1st PSE@ResearchDayUK*, Imperial, UK, 07/2016.
- P31** Ulmasov D.*, Baroukh C., Chachuat B., Deisenroth M. P., **Misener R.** Bayesian Optimisation with Dimension Scheduling Algorithm: Application to Biological Systems. *26th European Symposium on Computer Aided Process Engineering*, Portorož, SI, 06/2016.
- P30** Mistry M.*, **Misener R.** Solving MINLP with Heat Exchangers: Special Structure Detection and Large-Scale Global Optimisation. *AIChE Annual Meeting*. Salt Lake City, UT, 11/2015.
- P29** Allenby M. C.*, Tahlawi A., Brito Dos Santos S., **Misener R.**, Hwang Y., Panoskaltsis N., Mantalaris A. Development of a hematopoietic microenvironment for the production of red blood cells (RBCs) in a novel 3D hollow fibre bioreactor. *TERMIS*. Boston, MA, 09/2015.
- P28** Fuentes-Garí M.*, **Misener R.**, Georgiadis M. C., Kostoglou M., Pistikopoulos E. N., Panoskaltsis N., Mantalaris A. Chemotherapy Optimization in Leukemia: Selecting the Right Mathematical Models for the Right Biological Processes. *9th IFAC Symposium on Biological & Medical Systems*. Berlin, DE; 09/2015
- P27** **Misener R.**, Mistry M.* Solving MINLP with Heat Exchangers: Special Structure Detection and Large-Scale Global Optimisation. *13th EUROPT Workshop on Advances in Continuous Optimisation*, Edinburgh, UK; 07/2015.
- P26** **Misener R.***, Fuentes-Garí M., Allenby M. C., Panoskaltsis N., Pistikopoulos E. N., Mantalaris A. Stem Cell Bioprocessing under Uncertainty: A Case Study in Optimising Red Blood Cell Production. *17th British-French-German Conference on Optimization*. London, UK; 06/2015.
- P25** Savvopoulos S. V.*, **Misener R.**, Panoskaltsis N., Pistikopoulos E. N., Mantalaris A. Global Sensitivity Analysis for a Dynamic Model of Chronic Lymphocytic Leukemia Disease Trajectories. *12th International Symposium on Process Systems Engineering*. Copenhagen, DK; 06/2015.

- P24 Misener R.***, Fuentes-Garí M., Velliou E., Panoskaltzis N., Pistikopoulos E. N., Mantalaris A. Robust Design and Operation of Red Blood Cell Production in a Parallelised Hollow Fibre Bioreactor. *AIChE Annual Meeting*. Atlanta, GA; 11/2014.
- P23** Velliou E., Brito Dos Santos S., Fuentes-Garí M.*, **Misener R.**, Panoskaltzis N., Pistikopoulos E. N., Mantalaris A. Towards *in vitro* Optimization of Chemotherapy for Leukaemia Under Environmental Stress: Moving from 2- to 3-Dimensional Cultures. *AIChE Annual Meeting*. Atlanta, GA; 11/2014.
- P22** Fuentes-Garí M.*, **Misener R.**, García-Münzer D., Velliou E., Georgiadis M. C., Kostoglou M., Panoskaltzis N., Pistikopoulos E. N., Mantalaris A. Towards Personalized Treatments for Leukemia Based on Cell Cycle Heterogeneity: An Experimental/Modeling Approach. *AIChE Annual Meeting*. Atlanta, GA; 11/2014.
- P21 Misener R.***, Fuentes-Garí M., Velliou E., Panoskaltzis N., Pistikopoulos E. N., Mantalaris A. Robust Design and Operation of Red Blood Cell Production in a Parallelised Hollow Fibre Bioreactor. *INFORMS Annual Meeting*. San Francisco, CA; 11/2014.
- P20** Velliou E., Fuentes-Garí M., **Misener R.***, Pefani E., Rende M., Panoskaltzis N., Pistikopoulos E. N., Mantalaris A. A framework for the design, modeling and optimization of biomedical systems. *8th International Conference on Foundations of Computer-Aided Process Design*. Cle Elum, WA; 07/2014.
- P19 Misener R.***, Chin J., Lai M., Fuentes-Garí M., Velliou E., Panoskaltzis N., Pistikopoulos E. N., Mantalaris A. Robust Superstructure Optimisation of a Bioreactor that Produces Red Blood Cells. *24th European Symposium on Computer Aided Process Engineering*. Budapest, Hungary; 06/2014.
- P18 Misener R.***, Floudas C. A. ANTIGONE: Algorithms for coNTinuous / Integer Global Optimization of Nonlinear Equations. *AIChE Annual Meeting*, San Francisco, CA; 11/2013.
- P17** Fuentes-Garí M.*, Velliou E., **Misener R.**, Britos dos Santos S., Panoskaltzis N., Mantalaris A., Pistikopoulos E. N. Towards a Personalised Treatment of Acute Myeloid Leukaemia: The Impact of Considering the Cell Cycle. *AIChE Annual Meeting*, San Francisco, CA; 11/2013.
- P16** Li J.*, Xiao X., **Misener R.**, Floudas C. A. Effective Global Optimization Methods for Total Refinery Planning Operations. *AIChE Annual Meeting*, San Francisco, CA; 11/2013.
- P15** Floudas C. A., **Misener R.*** Globally Optimizing Mixed-Integer Quadratically-Constrained Quadratic Programs: Advances in GloMIQO. *AIChE Annual Meeting*, Pittsburgh, PA; 10/2012.
- P14** Floudas C. A.*, **Misener R.** Globally Optimizing Mixed-Integer Signomial Programs. *AIChE Annual Meeting*, Pittsburgh, PA; 10/2012.
- P13** Floudas C. A.*, **Misener R.** A Global Optimization Framework for Mixed-Integer Signomial Programs. *INFORMS Annual Meeting*, Phoenix, AZ; 10/2012.
- P12** Floudas C. A.*, **Misener R.** Globally Optimizing Mixed-Integer Quadratically-Constrained Quadratic Programs (MIQCQP). *21st International Symposium on Mathematical Programming*, Berlin, DE; 08/2012.
- P11** Floudas C. A.*, **Misener R.** GloMIQO: Global Mixed-Integer Quadratic Optimizer. *European Conference on Operational Research*, Vilnius, Lithuania; 07/2012.
- P10** Floudas C. A.*, **Misener R.** A Framework for Solving Mixed-Integer Quadratically-Constrained Quadratic Programs (MIQCQP). *INFORMS International*, Beijing, China; 06/2012.
- P09 Misener R.***, Floudas C. A. Global Optimization of Mixed-Integer Quadratically-Constrained Quadratic Programs (QCQP) Through Piecewise-Linear and Edge-Concave Relaxations. *AIChE Annual Meeting*, Minneapolis, MN; 10/2011.
- P08** Baliban R.*, Elia J. A., **Misener R.**, Floudas C. A. Global Optimization of Thermochemical-Based Coal, Biomass, and Natural Gas to Liquids Processes Via Logarithmic Partitioning Schemes. *AIChE Annual Meeting*, Minneapolis, MN; 10/2011.

- P07** Li J.*, **Misener R.**, Floudas C. A. Scheduling of Crude Oil Operations Under Uncertainty: A Robust Optimization Framework Coupled with Global Optimization. *AIChE Annual Meeting*, Minneapolis, MN; 10/2011.
- P06** **Misener R.***, Thompson J. P., Floudas C. A. Large-Scale Global Optimization of Generalized and Extended Pooling Problems: Methods and Computational Tools. *AIChE Annual Meeting*, Salt Lake City, UT; 2010.
- P05** **Misener R.***, Floudas C. A. Globally Optimal Nesting of Irregular Shapes into a Limited Resource. *AIChE Annual Meeting*, Salt Lake City, UT; 11/2010.
- P04** Li J.*, **Misener R.**, Floudas C. A. A New Modeling and Global Optimization Approach for Scheduling of Crude Oil Operations. *AIChE Annual Meeting*, Salt Lake City, UT; 11/2010.
- P03** **Misener R.***, Thompson J. P., Floudas C. A. Algorithms and Computational Tools for Globally Optimizing Large-Scale Pooling Problems. *Graduate Student Symposium*, Princeton, NJ; 10/2010.
- P02** **Misener R.***, Floudas C. A. Global Optimization of Large-Scale Extended Pooling Problems with the EPA Complex Emissions Model. *AIChE Annual Meeting*, Nashville, TN; 11/2009.
- P01** **Misener R.***, Gounaris C. E., Floudas C. A. Computational Comparison of Piecewise Linearization Schemes in Gas Lifting and Pooling Operations. *AIChE Annual Meeting*, Philadelphia, PA; 11/2008.

POSTER PRESENTATIONS [***PRESENTER**]

- O32** Mistry M.*, Letsios D., **Misener R.**, Krennich G., Lee R. M. Optimisation with Gradient Boosted Trees and Risk Control. *Department of Computing PhD Google Poster Competition.*, Imperial, UK; 05/2018.
- O31** Olofsson S.*, Deisenroth M. P., **Misener R.** Design of Experiments for Model Discrimination using Gaussian Process Surrogate Models. *Department of Computing PhD Google Poster Competition.*, Imperial, UK; 05/2018. **SO awarded Best Quality Poster for 2nd year PhD students**
- O30** Letsios D., Kouyialis G.*, **Misener R.** Heuristics with Performance Guarantees for the Minimum Number of Matches. *UK/Ireland Annual Meeting of the Society for Industrial & Applied Mathematics*, Southampton, UK; 01/2018. **GK awarded 1st Poster Prize (there were two 1st prizes out of 34 entries)**
- O29** Aguirre A. M., Charitopoulos V. M., Diangelakis N. A., Letsios D.*, Oberdieck R., Silvente J., Dua V., **Misener R.**, Papageorgiou L. G., Pappas P., Pistikopoulos E. N., Wiesemann W. Uncertainty-Aware Planning & Scheduling in the Process Industries. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; 12/2017.
- O28** Letsios D., Kouyialis G.*, **Misener R.** Heuristics with Performance Guarantees for the Minimum Number of Matches Problem in Heat Recovery Network Design. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; 12/2017. **GK awarded 2nd Poster Prize (out of 25 entries)**
- O27** Mistry M.*, Letsios D., **Misener R.**, Krennich G., Lee R. M. Optimisation with Gradient Boosted Trees and Risk Control. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; 12/2017.
- O26** Olofsson S.*, Deisenroth M. P., **Misener R.** Design of Experiments for Model Discrimination using Gaussian Process Surrogate Models. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; 12/2017.
- O25** Letsios D., Kouyialis G.*, **Misener R.** Heuristics with Performance Guarantees for the Minimum Number of Matches in Heat Recovery Networks. *Amazon Supply Chain Optimization Summit*. Seattle, WA; 10/2017.

- O24** Letsios D., Kouyialis G.*, **Misener R.** Heuristics with Performance Guarantees for the Minimum Number of Matches in Heat Recovery Networks. *2nd PSE@ResearchDayUK*, Imperial, UK, 06/2017.
GK awarded 1st Poster Prize (out of 19 entries)
- O23** Kouyialis G., **Misener R.** Detecting Symmetry in Designing Heat Exchanger Networks. *Foundations of Computer Aided Process Operations/Chemical Process Control*. Tucson, AZ; 2017.
GK awarded a FOCAPO/CPC 2017 Travel Grant to present this poster
- O22** Allenby M. C., Tahlawi A., **Misener R.**, Brito dos Santos S., Mantalaris A., Panoskaltzis N. Spatiotemporal Mapping of Erythroid, Stromal, and Osteogenic Niche Formation to Support Physiologic Red Cell Production in a 3-Dimensional Hollow Fibre Perfusion Bioreactor. *American Society of Hematology Annual Meeting*. San Diego, CA; 12/2016.
- O21** Aguirre A. M., Charitopoulos V. M., Diangelakis N. A., Letsios D., Oberdieck R., Silvente J., Dua V., **Misener R.**, Papageorgiou L. G., Parpas P., Pistikopoulos E. N., Wiesemann W. Uncertainty-Aware Planning & Scheduling in the Process Industries. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; 12/2016.
- O20** Mistry M., **Misener R.** Planning and Scheduling: Mixed Integer Programming Combined with Logical Methods. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; 12/2016.
- O19** Kouyialis G., **Misener R.** Detecting Symmetry in Designing Heat Exchanger Networks. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; 12/2016.
- O18** Baltean-Lugojan R., **Misener R.** Exploiting Sparse Topological Structure in Non-Convex Standard Pooling Problems. *Imperial Department of Computing PhD Google Poster Competition*. London, UK; 03/2016.
RBL awarded 2nd prize for 1st year PhD students
- O17** Kouyialis G., **Misener R.** Data Structures for Representing Symmetry in Quadratic Programs. *Centre for Process Systems Engineering Industrial Consortium Meeting*, Imperial, UK; 12/2015.
- O16** Fuentes-Garí M., Zemenides S., **Misener R.**, Georgiadis M. C., Pistikopoulos E. N., Mantalaris A., Panoskaltzis N. Use of Mathematical Modelling Indicates That Patients Treated for Acute Myeloid Leukaemia (AML) Are Undertreated When Ideal Body Weight Is Used to Dose Chemotherapy. *American Society of Hematology Annual Meeting*. Orlando, FL; 12/2015.
- O15** Allenby M. C., Tahlawi A., Brito Dos Santos S., Hwang Y. S., **Misener R.**, Panoskaltzis N., Mantalaris A. Development of an ex vivo bone marrow mimicry microenvironment in a novel 3D hollow fibre bioreactor. *International Symposium on Experimental Hematology*. Tokyo, JP; 09/2015.
- O14** **Misener R.**, Fuentes-Garí M., Allenby M. C., Pistikopoulos E. N., Panoskaltzis N., Mantalaris A. Stem Cell Bio-Manufacturing Under Uncertainty: A Case Study in Optimising Red Blood Cell Production. *MEIbioeng*. Leeds, UK; 09/2015.
- O13** Ulmasov D., **Misener R.**, Deisenroth M. P. Fast Bayesian Optimisation with Dimension Scheduling. *Network on Computational Statistics & Machine Learning Workshop*. Warwick, UK; 09/2015.
- O12** Fuentes-Garí M., **Misener R.**, Pefani E., García-Münzer D., Kostoglou M., Georgiadis M. C., Panoskaltzis N., Pistikopoulos E. N., Mantalaris A. Cell cycle model selection for leukemia and its impact in chemotherapy outcomes. *12th International Symposium on Process Systems Engineering*. Copenhagen, DK; 06/2015.
- O11** Kouyialis G., **Misener R.** Exploiting Symmetry in Mixed Integer Non-Linear Optimisation. *Imperial Department of Computing PhD Google Poster Competition*. London, UK; 03/2015.
GK awarded 3rd prize for 1st year PhD students
- O10** Fuentes-Garí M., **Misener R.**, Kostoglou M., Georgiadis M. C., Pistikopoulos E. N., Panoskaltzis N., Mantalaris A. Intelligent Optimisation of Personalised Chemotherapy for Leukaemia. *SET for Britain*. London, UK; 03/2015.

- O09** Savvopoulos S.*, **Misener R.**, Panoskaltis N., Pistikopoulos E. N., Mantalaris A. A Personalized Framework for Dynamic Modelling of Chronic Lymphocytic Leukemia Disease Trajectories. *AICHE Annual Meeting*. Atlanta, GA; 11/2014.
- O08** **Misener R.**, Allenby M. C., Fuentes-Garí M., Rende M., Velliou E., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Optimisation under uncertainty for a bioreactor that produces red blood cells. *TERMIS-EU*. Genova, IT; 06/2014.
- O07** Fuentes-Garí M., **Misener R.**, D. García-Münzer, Velliou E., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Development and experimental validation of cyclin-based population balance model of the cell cycle in leukaemia cell lines. *TERMIS-EU*. Genova, IT; 06/2014.
- O06** Velliou E., Brito Dos Santos S., Fuentes-Garí M., **Misener R.**, Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Evolution of an AML model system under oxidative and starvation stress: A comparison between two and three dimensional cultures. *TERMIS-EU*. Genova, IT; 06/2014.
- O05** **Misener R.**, Chin J., Lai M., Fuentes-Garí M., Rende M., Velliou E., Panoskaltis N., Pistikopoulos E. N., Mantalaris A. Optimising a Bioreactor that Produces Red Blood Cells under Uncertainty. *2nd Belgian Symposium on Tissue Engineering*, Leuven, BE; 10/2013. **Best Poster Award**
- O04** Velliou E., Fuentes-Garí M., Britos dos Santos S., **Misener R.**, Panoskaltis N., Mantalaris A., Pistikopoulos E. N. The effect of oxygen and glucose stress on the evolution of a leukaemia model system in an *in vitro* bone marrow biomimicry. *AICHE Annual Meeting*, San Francisco, CA; 11/2013.
- O03** **Misener R.** Towards Rational Chemotherapy Strategies: A Hybrid Computational / Experimental Approach. *Royal Academy of Engineering Annual Research Forum*, London, UK; 09/2013.
- O02** **Misener R.**, Gounaris C. E., Floudas C. A. Modeling and Globally Optimizing Large-Scale Pooling Problems with Environmental Constraints. *Graduate Student Symposium*, Princeton, NJ; 10/2009.
- O01** **Misener R.**, Gounaris C. E., Floudas C. A. Multidimensional Piecewise-Affine Approximations for Gas Lifting and Pooling Applications. *7th International Conference on Foundations of Computer-Aided Process Design*.

TEACHING

- Operations Research** Imperial
Course Leader Joint with Dr G Casale. Nominated for **2017 Best Teaching for Undergraduates** and finalist for **2018 Best Teaching for Postgraduates**. *Autumn 2016, 2017*
- Computing for Optimal Decisions** Imperial
Course Leader Joint with Dr P Parpas. Finalist for **2016 Best Innovation in Teaching**, Imperial Student Academic Choice Award. The teaching innovation recognition is due to how frequently I discuss research in the classroom. *Spring 2016, Autumn 2014, 2016, 2017*
- Advanced Optimisation Short Course** Imperial
Lecturer Lead the *Global Optimisation* module of the Centre for Process Systems Engineering Short Course for Industry Professionals. *2015, 2016*
- Beginning Algebra** Albert C. Wagner Youth Correctional Facility
Volunteer Instructor Team teach Mercer County Community College MAT 033 (Summer 2011; Spring 2012) & MAT 037 (Fall 2010; Spring 2011; Fall 2011) for the Princeton Prison Teaching Initiative. Activities: lecturing, developing worksheets, supervising tutorials, grading. *2010-12*
- Design, Synthesis, & Optimization of Chemical Processes** Princeton
Assistant in Instruction Assisted students in modelling the conversion biomass & coal to gasoline for the capstone undergraduate Chemical Engineering process design course. Led tutorials covering Aspen & GAMS software. Received **Excellence in Teaching Award** from the School of Engineering & Applied Sciences. *Fall 2009*
- Chemical & Biological Engineering Laboratory** MIT
Teaching Assistant Advised a team of students in modelling a biological reactor using computational fluid dynamics with the software package FLUENT. *Spring 2007*

RESEARCH MENTORING FOR RESEARCH ASSOCIATES

CURRENT

Dr Dimitrios Letsios 2016-
Contributing to the U Ψ^2 EPSRC project. Awarded: 2nd Presentation Prize, 2017 Department of Computing Research Associate Symposium

Dr Kristijonas Cyras 2017-
Contributing to the ROAD2H EPSRC project. Primary supervisor is Prof F Toni. I contribute to the optimisation side of Dr Cyras' work.

Dr Juan Campos Salazar 2018-
Contributing to the GALINI EPSRC project.

COMPLETED

Dr Richard Oberdieck 2015-16
Contributed to the U Ψ^2 EPSRC project. Primary supervisor was Prof E Pistikopoulos. *Now* a Numerical Specialist at DONG Energy.

RESEARCH MENTORING FOR PHD CANDIDATES

IMPERIAL DEPARTMENT OF COMPUTING

Georgia Kouyialis 2014-
Exploiting Symmetry in Mixed-Integer Nonlinear Optimisation

Funded by EPSRC Doctoral Training Account Studentship. Awarded: 3rd prize for 1st year PhD students in the 2015 Departmental Google Poster Competition, FOCAPO/CPC 2017 Travel Award, 1st Poster Prize at the 2017 PSE@ResearchDayUK, 2nd Poster Prize at the 2017 CPSE Annual Meeting, 1st Poster Prize at the UK/Ireland Annual SIAM Meeting.

Radu Baltean-Lugojan 2015-
Multi-scale methods in large-scale pooling problems

Funded by EPSRC Doctoral Training Account Studentship. Awarded: 2nd prize for 1st year PhD students in the 2016 Departmental Google Poster Competition, 2017-18 IBM PhD Fellowship.

Miten Mistry 2015-
Funded by HiPEDs EPSRC Centre for Doctoral Training; Awarded 2015 Donald Davies Memorial Prize for MEng thesis excellence.

Simon Olofsson 2016-
Gaussian processes for hybridising analytical and data-driven optimisation: Application to bioreactors
Funded by ModLife (EU H2020 675251). Awarded: *Best Quality Poster* for 2nd year PhD students in the 2018 Departmental Google Poster Competition.

Francesco Ceccon Funded by the EPSRC. 2016-

Johannes Wiebe Funded by Schlumberger & HiPEDs EPSRC Centre for Doctoral Training. 2017-

IMPERIAL DEPARTMENT OF CHEMICAL ENGINEERING

Symeon Savvopoulos 2013-18
Mathematical Modelling of Chronic Lymphocytic Leukaemia; Supervisors are Prof A Mantalaris and Prof E Pistikopoulos, our collaboration is on Modelling Disease Trajectories for CLL. *Now* a postdoctoral associate.

Dr María Fuentes-Garí 2012-15
Population Balance Model of the Leukaemia Cell Cycle for Optimising Chemotherapy Treatments; Su-

supervisors: Prof A Mantalaris and Prof E Pistikopoulos, we collaborated on cell cycle modelling. *Now* a Senior Consultant at Process Systems Enterprise.

RESEARCH MENTORING FOR MASTERS & UG PROJECT STUDENTS

CURRENT

Bettina Alexieva	MSc, 2018
Julius Hense	Undergraduate project, 2017-18
Tasha Page	MSc, 2018
Michael Radigan	MEng, 2017-18
Sarah Wang	MSc, 2018
Shudian Zhao	MSc, 2018

COMPLETED

Habib Adebisi Abubakar	MSc, 2013-14
<i>Managing Disparate Numerical Scales in Global Optimisation</i> ; joint with Prof C Adjiman.	
Nikolaos Stefanopoulos	MSc, 2013-14
<i>Linking Experimental & Computational Models of Chronic Lymphocytic Leukaemia</i> ; joint with Prof A Mantalaris and Prof E Pistikopoulos.	
Miten Mistry	MEng, 2014-15
<i>Increasing Energy Efficiency in Industrial Plants: Optimising Heat Exchanger Networks</i> . Thesis published in <i>Computers & Chemical Engineering</i> (J25).	
MM awarded 2015 Donald Davies Memorial Prize for MEng thesis excellence	
Balarabe Ogbeha	BEng, 2014-15
<i>Detecting Symmetry in Mixed-Integer Nonlinear Optimisation</i>	
Francesco Cecon	MSc, 2015
<i>Optimising Energy Systems: Deducing Network Topology</i> . Thesis published in <i>AIChE Journal</i> (J26).	
Jiaying Li	MSc, 2015
<i>Detecting Symmetry in Mixed-Integer Nonlinear Optimisation</i>	
Doniyor Ulmasov	MSc, 2015
<i>Bayesian Framework for Microalgae Optimisation</i> ; joint with Dr M P Deisenroth. Collaboration with Dr B Chachuat and Dr C Baroukh. Thesis published at <i>ESCAPE</i> (C17).	
Chia (Joel) Choo	MRes Project, 2015
<i>Solving the QAP using Quantum Computing</i> ; joint with Dr L Nardi and Prof P Kelly.	
Melinda Chan	MSc, 2016
<i>Vehicle Routing Problem with Time Windows</i>	
Karlson Lee	MSc, 2016
<i>Mixed integer optimisation for interplanetary space travel</i> ; joint with Dr A Faisal.	
Pierre Thary	MSc, 2016
<i>Solving analytical optimisation problems with black-box functions embedded</i>	
Chase Hellemans	MEng, 2016-17
<i>Learning Optimal Bayesian Networks from Data</i>	
Jakub Grzegorek	MEng, 2016-17
<i>Solving Vehicle Routing Problem with Genetic Algorithms</i>	
Pingchuan Ma	MSc Independent Study Option, 2017
<i>Mixed Integer Nonlinear Optimisation</i>	
Christian Wesselhoeft	MSc Independent Study Option & MSc thesis, 2017
<i>Mixed-integer PDE-constrained optimisation</i> ; joint with Dr D Ham. Thesis published at <i>PSE</i> (C22).	
CW awarded 2017 Winton Capital Applied Computing MSc Project Prize	
Anna Collins	Undergraduate Research Opportunities Programme, 2017
<i>Optimisation & Argumentation for Personalised Health Care</i> ; joint with Prof F Toni.	

PRIOR ASSISTANCE IN MENTORING

Final-Year Undergraduate Research Project Supervision

Imperial: Karan Gupta, Clara Hedegaard, Eleanor Shead, Thomas Wiggins; joint with Prof A Mantalaris. Thesis of KG & TW published in *AIChE Journal* (J32), 2013. *Princeton*: Philip Miller; joint

with Prof C A Floudas, 2011-2012

THESIS COMMITTEES

HABILITATION À DIRIGER DES RECHERCHES (1 EXTERNAL) _____		
Claudia D'Ambrosio <i>Solving well-structured MINLP problems</i>	Université Paris 13	07/2018
PHD (3 EXTERNAL, 6 INTERNAL) _____		
Robert Walecki <i>Structured Machine Learning Methods for Automated Analysis of Facial Expressions</i>	Imperial	06/2018
Styliani Avraamidou <i>Mixed-Integer Multi-level Optimization through Multi-Parametric Programming</i>	Imperial	02/2018
Ahmadreza Marandi <i>Aspects of Quadratic Optimization: Nonconvexity, Uncertainty, and Applications</i>	University of Tilburg	12/2017
Juan Campos Salazar <i>A multigrid approach to SDP relaxations of sparse polynomial optimization problems</i>	Imperial	11/2017
Fabian Rigterink <i>Pooling Problems: Advances in Theory and Applications</i>	University of Newcastle	05/2017
Nikos Diangelakis <i>Model-based multi-parametric programming strategies towards the integration of design, control and operational optimization</i>	Imperial	03/2017
Carlos Perez Galvan <i>Global Optimisation for Dynamic Systems using Novel Overestimation Reduction Techniques</i>	University College London	02/2017
Tiberiu Chis <i>Performance modelling with adaptive hidden Markov models and discriminatory process sharing queues</i>	Imperial	04/2016
Ioana Nascu <i>Advanced multiparametric optimization and control studies for anaesthesia</i>	Imperial	04/2016

FINANCIAL SUPPORT SECURED

FELLOWSHIPS

Engineering & Physical Sciences Research Council Early Career Fellowship	2017 - 2022
Title: <i>GALINI: Global Algorithms for mixed-Integer Nonlinear optimisation of Industrial systems</i>	
Priority area: Software development for novel engineering research; Includes 6 years postdoc funding	
Royal Academy of Engineering Research Fellowship	2012 - 2017
Support for engineers to develop an academic research career	
Imperial College Junior Research Fellowship	2012 - 2015
Sustain early career researchers (declined)	
USA National Science Foundation Graduate Research Fellowship	2007 - 2012
Support for graduate students in STEM	
Princeton University Gordon Y. S. Wu Fellowship	2007 - 2009

FELLOWSHIPS TO MY TEAM MEMBERS

Prognosis for Fault Diagnosis	2017 - 2021
EPSRC Industrial CASE Studentship from Schlumberger (PI). To RM: 3.5 years PhD funding for PhD student Johannes Wiebe.	
Cutting Planes for Global Optimisation	2017 - 2018
1 year IBM Fellowship to my PhD student Radu Baltean-Lugojan (I am Academic Mentor).	

GRANTS

Digital Media Data Analytics	2018 - 2019
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Innovate UK. Investigators: Dr A Field (PI), Dr M P Deisenroth, Dr R Misener (coI). To DoC: 1 year postdoctoral funding.

BASF Research Project 2017

Research of interest to BASF (PI). To RM: 4.2 months PhD funding.

ROAD2H: Resource Optimisation, Argumentation, Decision Support and Knowledge Transfer to Create Value via Learning Health Systems 2017 - 2020

EPSRC EP/P029558/1. Investigators: Prof A Darzi (PI), Dr K Chalkidou, Dr V Curcin, Prof B Delaney, Dr R Li, Dr J Marti, Dr B Marovic, Dr R Misener (coI), Mr J Symons, Prof F Toni (Computing PI). To FT & RM: 3 years postdoctoral funding.

Parallelising Mixed-Integer Optimisation: Energy Efficiency Applications 2017 - 2018
EPSRC First Grant Scheme (PI). To RM: 1 year Research Associate Funding, 3 hours per week.

ModLife 2015 - 2019

EU H2020 675251. Investigators: Prof A Mantalaris (PI), Dr R Misener (coI), European Commission (H2020-MSCA-ITN-2015); To RM: 3 years PhD funding & 5 hours per week

SyMBioSys: Systematic Models for Biological Systems Engineering 2015 - 2019

EU H2020 675585. Investigators: Prof A Mantalaris (PI), Dr R Misener (coI), Dr N Panoskaltis, European Commission (H2020-MSCA-ITN-2015); To RM: 5 hours per week

U Ψ ²: Uncertainty-Aware Planning and Scheduling in the Process Industries 2015 - 2019

EPSRC EP/M028240/1. Investigators: Dr V Dua, Dr R Misener (coI), Prof L Papageorgiou (PI), Dr P Pappas (Imperial PI), Dr E Pistikopoulos, Dr W Wiesemann, EPSRC; To RM: 3.5 years RA funding & 3.8 hours per week

INTERNAL FUNDING

Data Science Institute Seed Funding in Probabilistic Modelling (PI, 4 month project) 2018

TRAVEL GRANTS

European Science Foundation Travel Grant	€ 500;	2013
<i>2nd Belgian Symposium on Tissue Engineering</i>		
Princeton University Deans Fund for Scholarly Travel	\$ 600;	2012
Princeton University Wu Travel Fund Award	\$1000;	2009
CACHE Corporation National Science Foundation Travel Grant	\$1000;	2009; 2014
Princeton University Walter R. Schowalter Travel Fund Award	\$2000;	2008 - 2012

PROFESSIONAL SERVICE

LEADERSHIP IN MY RESEARCH COMMUNITY

Director of the AIChE Computing and Systems Technology Division 2016 - 2018

This is an elected post which several people hold simultaneously. During my tenure, I (i) overhauled the Student Travel Award, (ii) created an online Poster Kiosk to increase poster session prestige, (iii) initiated the Software Tools & Implementations session at the annual meeting, and (iv) reworked the Student Presentation Award process.

Management Committee Member, EU COST Action TD1207 2016 - 2017

Mathematical Optimization for Efficient & Robust Energy Networks

PROGRAM COMMITTEE MEMBERSHIPS

Integer Programming and Combinatorial Optimization (CORE A) IPCO 2019

Foundations of Computer-Aided Process Design FOCAPD 2019

Chair of the FOCAPD 2019 *International Subcommittee*

Mixed-Integer Programming Workshop MIP 2018

Process Systems Engineering PSE 2018

Co-chair of the PSE 2018 *Optimization Methods & Computational Tools* theme

EUROPT Workshop on Advances in Continuous Optimization EUROPT 2017, 18

Computational Management Science CMS 2017

European Symposium on Computer Aided Process Engineering ESCAPE 2016, 17, 18

6 th INFORMS Optimization Society Conference	IOS 2016
CONFERENCE & SEMINAR ORGANISATION	
Dagstuhl Seminar on <i>Algorithms for Mixed-Integer Nonlinear Optimization</i> (18081)	2018
Joint with Dr P Bonami, Dr A Gleixner, Prof J Linderoth	
Organise the Imperial Centre for Process Systems Engineering Seminar Series	2015; 2016
Organising Committee: 17 th British-French-German Conference on Optimisation	2015
SESSIONS CHAIRED AT MAJOR INTERNATIONAL CONFERENCES	
Session Co-Chair, CAST Director's Student Presentation Award Finalists	AIChE 2018
Session Co-Chair, Advances in Optimization Under Uncertainty	AIChE 2018
Session Chair, Optimization Methods & Computational Tools 1	PSE 2018
Session Co-Chair	ESCAPE 2018
Session Co-Chair, Advances in Optimization I	AIChE 2017
Session Chair, In memory of Christodoulos A. Floudas I, II, & III	EUROPT 2017
Session Co-Chair, Enabling Technologies I & II	FOCAPO 2017
Session Chair, Software Tools and Implementations for Process Systems Engineering	AIChE 2016
Session Co-Chair, Process Design II	AIChE 2016
Session Chair, Advances in Deterministic Global Optimization	ICCOPT 2016
Session Chair, Modelling, Numerical analysis, Simulation and Optimization	ESCAPE-26 2016
Session Chair, Software Tools and Implementations for Process Systems Engineering	AIChE 2015
Session Chair, Advances in Global Optimisation	ISMP 2015
Session Co-Chair, Modelling & Simulation	PSE-2015/ESCAPE-25 2015
Session Co-Chair: Supply Chain Optimization; Planning & Scheduling II	AIChE 2014
Invited Session Chair	INFORMS 2014
Poster Session Co-Chair	FOCAPD 2014
PARTICIPATION IN INVITED WORKSHOPS	
Amazon Supply Chain Optimization Summit	09/10/2017
EPSRC Operational Research Theme Day	15/09/2015
DEPARTMENTAL & COLLEGE SERVICE	
<i>Member</i> , Departmental Management Committee	2016 -
<i>Member</i> , Energy Futures Laboratory Technical Working Group	2017 -
<i>Member</i> , Department of Computing Equality, Diversity & Education Committee	2017 -
EDITORIAL WORK & PEER REVIEW	
<i>Associate Editor</i> , Optimization and Engineering	2017 -
<i>Editorial Board</i> , Mathematical Programming B	2018 -
<i>Editorial Board</i> , Computers & Chemical Engineering	2018 -
<i>Member</i> , EPSRC Peer Review College (Associate Member, 2017-2018; Full Member 2018-)	
<i>Reviewer</i> , ADCHEM, AIChE Journal, Chemical Engineering Research & Design, Computational Optimization & Applications, Computers & Chemical Engineering (Top Reviewer, 2013, Top 10% in reviews completed, 2014 - 2015 & 2016 - 2017), Computers & Operations Research, European Journal of Operational Research, Fuel, Industrial & Engineering Chemistry Research, Journal of Global Optimization, Journal of Optimization Theory & Applications, Management Science, Mathematical Programming, Operations Research, Operations Research Letters, Optimization Letters, SIAM Journal on Optimization	
COMMUNITY OUTREACH & SERVICE	
Speed mentoring event for AnitaB.org at the Twitter London office	2018
Voice of the Future, pose questions to Ministers and scientific advisers in London Parliament	2016
Interviewed for a short film highlighting RAEng research activities	2015, 17
Panel Discussion Chair at the 1 st ACM-W UK Inspire Celebration of Women in Computing	2015

Lecture at the Engineering Summer School for Girls	2015
Organise a booth at Imperial Festival highlighting the BSEL Blood Factory	2013, 15
Give public laboratory tours for the Biological Systems Engineering Laboratory	2012 - 2014
Teach Beginning Algebra at ACW Youth Correctional Facility	2010 - 2012
MIT Educational Counsellor; interview prospective MIT students	2007 - 2012
Co-facilitator and program participant at MIT LeaderShape	2006 - 2007

AFFILIATIONS

<i>Senior Member</i> , American Institute of Chemical Engineers	AIChE 2008 -
<i>Member</i> , British Computer Society	BCS 2017 -
<i>Member</i> , Centre for Process Systems Engineering	CPSE 2014 -
I am CPSE “Friend” to ExxonMobil, i.e. I enable CPSE/XOM connections	
<i>Academic Fellow</i> , Data Science Institute	DSI 2018 -
<i>Member</i> , Institute for Operations Research & Management Sciences	INFORMS 2014 -
<i>Member</i> , Mathematical Optimization Society	MOS 2014 -
<i>Member</i> , Tau Beta Pi – Engineering Honor Society	TBP 2007 -
The top 20% of MIT Engineering Undergraduates are eligible for TBP	