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EDUCATION

2004	CARNEGIE MELLON UNIVERSITY PhD in Chemical Engineering	PITTSBURGH, PA
1997	LONDON SCHOOL OF ECONOMICS M.Sc. in Operational Research	LONDON, UK
1996	NATIONAL TECHNICAL UNIVERSITY OF ATHENS Diploma in Chemical Engineering	ATHENS, GREECE

PROFESSIONAL EXPERIENCE

08/04 – date	UNIVERSITY OF WISCONSIN DEPARTMENT OF CHEMICAL AND BIOLOGICAL ENGINEERING Paul E. Elfers Professor Vilas Distinguished Achievement Professor Professor Associate Professor Assistant Professor	MADISON, WI 1/2017 – present 06/2015 – present 09/2014 – present 09/2010 – 08/2014 08/2004 – 08/2010
	GREAT LAKES BIOENERGY RESEARCH CENTER <i>Multi-scale Modeling</i> Team Leader Management Team Member	2017 – present 2017 – present
01/00 – 12/03	CARNEGIE MELLON UNIVERSITY Research Assistant	PITTSBURGH, PA
01/98 – 07/99	GREEK ARMY TELECOMMUNICATIONS DEVISION National defense telecommunication network (“HERMES”) supervisor Responsible for the smooth operations of HERMES military telecommunication system.	ATHENS, GREECE

AWARDS/HONORS/FELLOWSHIPS

Award for Excellence and Service to the CAST Division of AIChE	2019
Paul E. Elfers Professor	2017-date
<i>Production and Operations Management Society Applied Research Challenge Award</i>	2016
2016 <i>Covestro Lecture</i> , Department of Chemical Engineering, Carnegie Mellon University	2016
2012, 2014 Best Paper Award, <i>Computes and Chemical Engineering</i>	2012, 2014
Vilas Distinguished Achievement Professor	2015
2013 Outstanding Young Researcher Award – CAST Division of AIChE	2013
Vilas Associate, University of Wisconsin – Madison	2013-2015
2008 W. David Smith Jr. Graduate Student Paper Award – CAST Division of AIChE	2008
National Science Foundation CAREER Award	2006-2011
Inaugural Olaf A. Hougen Fellowship	2004-2007
Carnegie Mellon University Graduate Fellowship	1999-2004
Alexander S. Onassis Public Benefit Foundation Graduate Fellowship	1999-2001
Fulbright Graduate Fellowship (declined)	1999

TEACHING

University of Wisconsin – Madison

- Senior level *Process Design* (S05, S06, S08, F09, F10, F13, S14).
- Senior level *Process Dynamics and Control* (S07, S10, F12).
- Graduate: *Intermediate Problems in Chemical Engineering* (F05, F07, F08).
- New graduate course on *Optimization Methods for Process Systems Engineering* (F06, S09, S11, S13).

Short Courses

- *Optimization Methods for Chemical Process Operations*, KAIST, Daejeon, South Korea, May 14, **2019**.
- *Optimization Methods*, Johnson Controls, Inc., Milwaukee, WI, August 19, **2016**.
- *Mixed-integer programming methods for supply chain optimization*. Pan American Advanced Studies Institute 2011: Process modeling and optimization for energy and sustainability. Angra dos Reis, RJ, Brazil, July 19-29, **2011**.
- *Mixed-integer programming methods for scheduling and production planning*. Department of Chemical Engineering, Texas A&M University, College Station, TX, May 20-22, **2008**.
- *Mixed-integer programming: Basic theory, tools and applications*. Universidad National del Sur – PLAPIQUI, Bahia Blanca, Argentina; Mar. 28 – Apr. 4, **2007**.

SELECT PROFESSIONAL ACTIVITIES

1. PROFESSIONAL COMMITTEES:

- *Computing & Systems Technology* (CAST) division of the *American Institute of Chemical Engineers* (AIChE): Director, 2011 – 2014; 2nd Vice-chair, 2017; 1st Vice-chair, 2018; Chair, 2019.
- Optimization Theme, Wisconsin Institute for Discovery, Advisory Board Member, 2014 – date
- Sustainable Manufacturing Advances in Research and Technology (SMART) Coordination Network, Steering Committee, Member.

2. JOURNAL SERVICE:

- *Processes*, Editorial Board, 2018 – date.
- *Computers and Chemical Engineering*, Editorial Advisory Board, 2017 – date.
- *AIChE Journal*, Consulting Editors Board, 2017 – date.
- *Energy Technology*, International Advisory Board member, 2017 - .

3. CONFERENCE ORGANIZATION:

- *Foundations of Computer-aided Process Operations 2017*: Chair.
- *Pan American Advanced Studies: Process Modeling and Optimization for Energy and Sustainability*, 2011: Chair.

4. CONFERENCE COMMITTEES:

- *Foundations of Computer-Aided Process Design 2019*, International Programming Committee, Member.
- *European Symposium on Computer Aided Process Engineering*, 2011, 2012, 2016, 2017, 2018, 2019, 2020: International Scientific Committee, Member.
- Lund Center for Control of Complex Engineering Systems, Process Control Workshop, September 28-30, 2016.
- *Process Systems Engineering 2018*: International Program Committee, Member.
- *Process Systems Engineering 2015 / 25th European Symposium on Computer Aided Process Engineering*: International Programming Committee, Member.
- *NSF - Smart Manufacturing Workshop*, Feb 2015, Organizing Committee.

- *Foundations of Computer-Aided Process Design 2014*, International Programming Committee, Member.
- *Mixed Integer Programming Workshop 2013*, Organizing Committee, Member.
- *Process Systems Engineering 2012*: International Program Committee, Member.
- *Foundations of Computer-aided Process Operations 2012*: Technical Advisory Committee, Member.
- *Process Systems Engineering 2009*: Scientific Committee, Member.
- *Foundations of Computer-aided Process Design 2009*: Technical Advisory Committee, Member.
- *Foundations of Computer-aided Process Operations 2008*: Technical Advisory Committee, Member.
- *Foundations of Computer-aided Process Operations 2008*: Contributed papers co-chair.
- *Process Systems Engineering 2006*: Special reviewer of *Operations and Control* topic area.
- *Process Systems Engineering 2006*: co-chair, “Business Decision Support”.

5. MANUSCRIPT REVIEWER:

ACS Sustainable Chemistry & Engineering; AIChE Journal; American Control Conference; Annals of OR; Applied Mathematical Modeling; Applied Energy; Biochemical Engineering Journal; Biofuels, Bioproducts & Biorefining; Bioresource Technology; Biotechnology for Biofuels; Biotechnology Progress; Chemical and Biochemical Engineering Quarterly; Chemical Engineering Research and Design; Chemical Engineering and Processing; Chemical Engineering Science; Computational Management Science; Computers and Chemical Engineering; Computers and Industrial Engineering; Control Engineering Practice; Current Opinion in Chemical Engineering; Energy and Environmental Science; Environmental Modeling; European Journal of Industrial Engineering; European Journal of Operational Research; Green Chemistry; Frontiers in Energy Research; IEEE-TransASE; IEEE-Transactions Engineering Management; Industrial and Engineering Chemistry Research; International Journal of Production Research; ISA Transactions; Journal of Global Optimization; Journal of the Operational Research Society; Journal of Process Control; Mathematical Programming; Metabolic Engineering; Naval Research Logistics; Operations Research; Optimization and Engineering; OR Spectrum; Processes.

6. PROPOSAL REVIEWER:

US Department of Energy; US National Science Foundation; American Chemical Society – Petroleum Research Fund; National Sciences and Engineering Research Council of Canada; Hellenic Ministry of Education, Lifelong Learning and Religious Affairs; Dutch Technology Foundation STW; Swiss National Science Foundation; The Royal Society.

7. MEMBERSHIPS:

American Institute of Chemical Engineers (AIChE)	2001 –
Institute for Operations Research and the Management Sciences (INFORMS)	2002 –
Texas-Wisconsin-California Control Consortium (TWCCC)	2004 –
American Chemical Society (ACS)	2006 –

RESEARCH MENTORING

Postdoctoral Research Fellows Supervised

Name	Dates in Lab	Current Position
Pradeep Prasad	2/2006 – 9/2007	Cummings
Jiyong Kim	3/2009 – 8/2013	Incheon, Assistant Professor
Jeehoon Han	11/2012 – 8/2014	Chonbuk, Assistant Professor
Srinivas Rangarajan	9/2013 – 10/2016	Lehigh University, Assistant Professor
Jeff Herron	11/2013 – 8/2015	The Dow Chemical Company
Kirti Yenkie	1/2015 – 3/2017	Rowen University, Assistant Professor

Rex Ng	1/2015 – 12/2018	Exxon Mobil
Kefeng Huang	2/2015 – 11/2019	Air Products
Wangyun Won	2/2015 – 8/2017	Changwon National University, Korea; Assistant Professor
Bruno Calfa	6/2015 – 4/2017	United Technologies – Research Center
Gautham M. Ramapriya	8/2016 – 3/2018	ABB
Peyman Fasahati	9/2017 – 6/2019	UOP
Ishan Bajaj	3/2019 – present	
Juan M Restrepo Florez	5/2019 – present	
Shamik Misra	7/2019 – present	
Boeun Kim	9/2019 – present	

PhD Students Supervised

Name	Dates in Lab	Current Position
Charles Sung	10/2004 – 6/2009	US Navy, Naval Reactors
Matthew Colvin	10/2005 – 5/2010	Aspen Technologies
Arul Sundaramoorthy	2/2006 – 1/2011	MIT, postdoc
Carlos Henao	10/2006 – 5/2012	Air Products Inc
Kaushik Subramanian*	10/2007 – 12/2012	Amazon.com
Patricia Rubert-Nason**	10/2008 – 11/2013	
Andres Merchan	10/2009 – 10/2015	Cargill
Murat Sen	10/2009 – 10/2014	Phillips 66
Sara Velez	10/2010 – 7/2014	MIT Lincoln Lab
Yachao Dong	10/2011 – 5/2017	Tufts University (post-doc)
Michael Risbeck*	10/2013 – 8/2018	Johnson Controls
Wenzhao (Tony) Wu	10/2013 – 10/2018	Exxon Mobil
Dhruv Gupta	10/2013 – 6/2019	Exxon Mobil
Lingxun Kong	10/2014 – 8/2019	Dow
Ho Jae Lee	10/2014 – 11/2019	Dow
Xinyue Peng ⁺	10/2014 – 11/2019	Dow
Yifu Chen	10/2015 – present	
Ranjeet Kumar*	10/2015 – present	
Venkatachalam Avadiappan	10/2016 – present	
Yaqing Wu	10/2016 – present	
Joonjae Ryu	10/2017 – present	
Arthur Pastore	10/2018 – present	
Eric O'Neil	10/2018 – present	
Garry Taifan	10/2018 – present	
Brandon Paul	10/2019 – present	
Caleb Geissler	10/2019 – present	
Hui Geng [#]	11/2019 – present	

* Co-advised with James Rawlings

** Co-advised with Manos Mavrikakis

⁺ Co-advised with Thatcher Root

[#] Co-advised with Jennifer Reed

PATENTS

- [1] Maravelias CT, Zenner S, Sundaramoorthy A. Computerized Systems for Chemical Production Scheduling. US 9,146,550 B2, September 29, **2015**.

PUBLICATIONS

JOURNAL PAPERS

- [1] McAllister RD, Rawlings JB, Maravelias CT. Rescheduling Penalties for Economic Model Predictive Control and Closed-loop Scheduling. *Industrial & Engineering Chemistry Research*, **2020**.
(DOI: 10.1021/acs.iecr.9b05255).
- [2] Lindsay MJ, Huang K, Buchinger BA, Maravelias CT, Dumesic JA, Rankin SA, Huber GW. Catalytic Production of Glucose-Galactose Syrup from Greek Yogurt Acid Whey in a Continuous Flow Reactor. *Chem Sus Chem*, accepted, **2020**.
- [3] Kong L, Maravelias CT. On the Derivation of Piecewise Linear Approximating Functions. *INFORMS Journal on Computing*, accepted, **2020**.
(DOI:).
- [4] Gupta D, Maravelias CT. Framework for Studying Online Production Scheduling Under Endogenous Uncertainty. *Computers & Chemical Engineering*, accepted, **2020**.
(DOI: 10.1016/j.compchemeng.2019.106670).
- [5] Wu Y, Maravelias CT. A General Model for Periodic Chemical Production Scheduling. *Industrial & Engineering Chemistry Research*, accepted, **2020**.
(DOI: 10.1021/acs.iecr.9b04381).
- [6] Risbeck MJ, Maravelias CT, Rawlings JB, Turney RD. Mixed-integer Optimization Methods for Online Scheduling in Large-scale HVAC Systems. *Optimization Letters*, accepted, **2020**.
(DOI: 10.1007/s11590-018-01383-9).
- [7] Huang K, Maravelias CT. Synthesis and Analysis of Nonoxidative Methane Aromatization Strategies. *Energy Technology*, 1900650, **2020**.
(DOI: 10.1002/ente.201900650).
- [8] Kong L, Maravelias CT. Generalized Short-Cut Distillation Column Modeling for Superstructure-based Process Synthesis. *AIChE J.*, 66 (2), e16809, **2020**.
- [9] Huang K, Fasahati P, Maravelias CT. System-level Analysis of Lignin Valorization in Lignocellulosic Biorefineries. *iScience*, 23 (1), 100751, **2020**.
- [10] Ryu J, Kong L, Pastore de Lima, Maravelias CT. A Generalized Superstructure-based Framework for Process Synthesis. *Computers & Chemical Engineering*, 133, 106653, **2020**.
- [11] Kong L, Maravelias CT. Expanding the Scope of Distillation Network Synthesis Using Superstructure-based Methods. *Computers & Chemical Engineering*, 133, 106650, **2019**.
- [12] Wu W, Yenkie KM, Maravelias CT. Synthesis and Analysis of Separation Processes for Extracellular Chemicals Generated from Microbial Conversions. *BMC Chemical Engineering*, 1, 21, **2019**.
- [13] Kong L, Maravelias CT. From Graphical to Model-based Distillation Design: a McCabe-Thiele-inspired Mathematical Program. *AIChE J.*, 65, e16731, **2019**.
- [14] Risbeck MJ, Maravelias CT, Rawlings JB. Unification of Closed-loop Scheduling and Control: State-space Formulations, Terminal Constraints, and Theoretical Properties. *Computers & Chemical Engineering*, 129, 106496, **2019**.

- [15] Gupta D, Maravelias CT. On the Design of Online Production Scheduling Algorithms. *Computers & Chemical Engineering*, 129, 106517, **2019**.
- [16] Fasahati P, Wu W, Maravelias CT. Process Synthesis and Economic Analysis of Cyanobacterial Biorefineries: A Superstructure-based Approach, *Applied Energy*, 253, 113625, **2019**.
- [17] Lee H, Maravelias CT. Combining the Advantages of Discrete- and Continuous-time Scheduling Models. Part 2: Systematic Methods for Determining Model Parameters. *Computers and Chemical Engineering*, 128, 557-573, **2019**.
- [18] Motagamwala AH, Huang K, Maravelias CT, Dumesic JA. Solvent System for Effective Near-term Production of Hydroxymethylfurfural (HMF) with Potential for Long-term Process Improvement. *Energy & Environmental Science*, 2212-2222, 12, **2019**.
- [19] Rawlings BC, Avadiappan V, Lafortune S, Maravelias CT, Wassick JM. Incorporating Automation Logic in Online Chemical Production Scheduling. *Computers & Chemical Engineering*, 128, 201-215, **2019**.
- [20] Peng X, Root TW, Maravelias CT. Optimization-based Process Synthesis under Seasonal and Daily Variability: Application on Concentrating Solar Power Plants. *AIChE Journal*, 65 (7), **2019**.
- [21] Rawlings JB, Maravelias CT. Bringing New Technologies and Approaches to the Operation and Control of Chemical Process Systems. *AIChE J.*, 65 (6), e16615, **2019**.
- [22] Wu W, Maravelias CT. Identifying the Characteristics of Promising Renewable Replacement Chemicals. *iScience*, 15, 136-146, **2019**.
- [23] Tountas AA, Peng X, Tavasoli AV, Duchesne PN, Dingle TL, Dong Y, Hurtado L, Mohan A, Sun W, Ulmer U, Wang L, Wood TE, Maravelias CT, Sain MM, Ozin GA. Towards Solar Methanol: Past, Present and Future, *Advanced Science*, 6, 1801903, **2019**.
- [24] Ryu J, Maravelias CT. Simultaneous Process and Heat Exchanger Network Synthesis Using a Discrete Temperature Grid. *Industrial & Engineering Chemistry Research*, 58, 6002-6016, **2019**.
- [25] Ng RTL, Fasahati P, Huang K, Maravelias CT. Utilizing Stillage in the Biorefinery: Economic, Technological, and Energetic Analysis. *Applied Energy*, 241, 491-503, **2019**.
- [26] Maravelias CT. Chemical Production Scheduling. *Reference Module in Chemistry, Molecular Sciences, and Chemical Engineering*, **2018**.
- [27] Dong Y, Jerome N, Maravelias CT. Reoptimization Framework and Policy Analysis for Maritime Inventory Routing under Uncertainty. *Optimization and Engineering*, 937-976, 19, **2018**.
- [28] Wu W, Maravelias CT. Synthesis and Techno-economic Assessment of Microbial-based Processes for Terpenes Production. *Biotechnology for Biofuels*, 11:294, **2018**.
- [29] Lee H, Maravelias CT. Combining the Advantages of Discrete- and Continuous-Time Scheduling Models: Part 1: Framework and Mathematical Formulations. *Computers & Chemical Engineering*, 176-190, 116, **2018**.
- [30] Fasahati P, Maravelias CT. Advanced Biofuels of the Future: Atom-economical or energy-economical? *Joule*, 1915-1919, 2, **2018**.
- [31] Wu W, Long MR, Zhang X, Reed JL, Maravelias CT. A Framework for the Identification of Promising Bio-based Chemicals. *Biotechnology and Bioengineering*, 2328-2340, 115, **2018**.
- [32] Ramapriya GM, Won W, Maravelias CT. A Superstructure-based Approach to Process Synthesis for Complex Reactor Networks. *Chemical Engineering Research and Design*, 589-608, 137, **2018**.
- [33] Wang L, Xia M, Wang H, Huang K, Qian C, Maravelias CT, Ozin GA. Greening Ammonia: Toward the Solar Ammonia Refinery, *Joule*, 2, 1055-1074, **2018**.

- [34] Rawlings JB, Patel NR, Risbeck MJ, Maravelias CT, Wenzel MJ, Turney RD. Economic MPC and Real-time Decision Making with Application to Large-Scale HVAC Energy Systems. *Computers & Chemical Engineering*, 114, 89-98, **2018**.
- [35] Kong L, Maravelias CT. An Optimization-based Approach for Simultaneous Chemical Process and Heat Exchanges Network Synthesis. *Industrial & Engineering Chemistry Research*, 57, 6330-6343, **2018**.
- [36] Krishna SH, Huang K, Barnett KJ, He J, De Bruyn M, Weckhuysen BM, Maravelias CT, Dumesic JA, Huber GW. Oxygenated Commodity Chemicals from Chemo-catalytic Conversion of Biomass Derived Heterocycles. *AIChE J.*, 64(6), 1910-1922, **2018**.
- [37] Ng RTL, Patchin S, Wu W, Sheth N, Maravelias CT. An optimization-based Web Application for Synthesis and Analysis of Biomass-to-fuels Strategies. *Biofuels, Bioproducts & Biorefining*, 12 (2), 170-176, **2018**.
- [38] Martagan T, Krishnamurthy A, Leland P, Maravelias CT. Performance Guarantees and Optimal Purification Decisions for Engineered Proteins. *Operations Research*, 6 (1), 18-41, **2018**.
- [39] Huang K, Miller JB, Huber GW, Dumesic JA, Maravelias CT. A General Framework for the Evaluation of Direct Nonoxidative Methane Conversion Strategies. *Joule*, 2, 349-365, **2018**.
- [40] Ng RTL, Kurniawan D, Wang H, Mariska B, Wu W, Maravelias CT. Integrated Framework for Designing Spatially Explicit Biofuel Supply Chains. *Applied Energy*, 116-131, 216, **2018**.
- [41] Huang K, Won W, Barnett KJ, Brentzel ZJ, Alonso DM, Huber GW, Dumesic JA, Maravelias CT. Improving Economics of Lignocellulosic Biofuels: An Integrated Strategy for Coproducing 1,5-Pentanediol and Ethanol. *Applied Energy*, 213, 585-594, **2018**.
- [42] Motagamwala AH, Won W, Maravelias CT, Sener C, Martin Alonso D, Maravelias CT, Dumesic JA. Towards Biomass-Derived Renewable Plastics: Production of 2,5-Furandicarboxylic Acid from Fructose, *Science Advances*, 4 (1), eaap9722, **2018**.
- [43] Rangarajan S, Maravelias CT, Mavrikakis M. Sequential Optimization-Based Framework for Robust Modeling and Design of Heterogeneous Catalytic Systems. *Journal of Physical Chemistry C*, 121, 25847-25863, **2017**.
- [44] Kong L, Wu W, Maravelias CT. Simultaneous Utility and Heat Exchanger Area Targeting for Integrated Process Synthesis and Heat Integration. *Industrial & Engineering Chemistry Research*, 56, 11847-11859, **2017**.
- [45] Gupta D, Maravelias CT. A General State-Space Formulation for Online Scheduling. *Processes*, 5(4), 69, **2017**.
- [46] Lee H, Maravelias CT. Discrete-time Mixed-integer Programming Models for Short-term Scheduling in Multipurpose Environments. *Computers and Chemical Engineering*, 107, 171-183, **2017**.
- [47] Ng RTL, Maravelias CT. Economic and Energetic Analysis of Biofuel Supply Chains. *Applied Energy*, 205, 1571-1582, **2017**.
- [48] He J, Huang K, Barnett KJ, Krishna S, Martin Alonso D, Brentzel Z, Burt SP, Walker TW, Banholzer W, Maravelias CT, Hermans I, Dumesic JA, Huber GW. New Catalytic Strategies for alpha-omega Diol Production from Lignocellulosic Biomass. *Faraday Discussions*, 202, 247-267, **2017**.
- [49] Lee H, Maravelias CT. Mixed-integer Programming Models for Simultaneous Batching and Scheduling in Multi-purpose Batch Plants. *Computers and Chemical Engineering*, 106, 621-644, **2017**.
- [50] He J, Liu M, Huang K, Walker TW, Maravelias CT, Dumesic JA, Huber GW. Production of Levoglucosenone and 5-hydroxymethylfurfural from Cellulose in Polar Aprotic Solvent-water Mixtures. *Green Chemistry*, 19, 3642-3653, **2017**.

- [51] Won W, Maravelias CT. Thermal Fractionation and Catalytic Upgrading of Lignocellulosic Biomass to Biofuels: Process Synthesis and Analysis. *Renewable Energy*, 114, 357-366, **2017**.
- [52] Won W, Motagamwala AH, Dumesic JA, Maravelias CT. A co-solvent hydrolysis strategy for the production of biofuels: Process synthesis and techno-economic analysis, *Reaction Chemistry and Engineering*, 2, 397-405, **2017**.
- [53] Huang K, Brentzel ZJ, Barnett KJ, Dumesic JA, Huber GW, Maravelias CT. Conversion of Furfural to 1,5-Pentanediol: Process Synthesis and Analysis. *ACS Sustainable Chemistry & Engineering*, 5, 4699-4706, **2017**.
- [54] Peng X, Root TW, Maravelias CT. Storing Solar Energy with Chemistry: The Role of Thermochemical Storage in Concentrating Solar Power. *Green Chemistry*, 19, 2427-2438, **2017**.
- [55] Martin Alonso D, Hakim S, Zhou S, Won W, Hosseinaei O, Tao J, Garcia-Negron V, Motagamwala AH, Mellmer MA, Huang K, Houtman CJ, Labbé N, Harper DP, Maravelias CT, Runge T, Dumesic JA. Increasing the Revenue from Lignocellulosic Biomass: Maximizing Feedstock Utilization. *Science Advances*, 3 (5), e1603301, **2017**.
- [56] Yenkie KM, Wu W, Maravelias CT. Synthesis and analysis of separation networks for the recovery of intracellular chemicals generated from microbial-based conversions. *Biotechnology for Biofuels*, 10:119, **2017**.
- [57] Risbeck MJ, Maravelias CT, Rawlings JB, Turney RD. A Mixed-Integer Linear Programming Model for Real-Time Cost Optimization of Building Heating, Ventilation, and Air Conditioning Equipment, *Energy and Buildings*, 142, 220-235, **2017**.
- [58] Brentzel ZJ, Barnett KJ, Huang K, Maravelias CT, Dumesic JA, Huber GW. Commodity Chemicals from Biomass: Combining Ring-opening Tautomerization and Hydrogenation Reactions to Produce 1,5-Pentanediol from Furfural, *ChemSusChem*, 10, 1351-1355, **2017**.
- [59] Dong Y, Velez S, Maravelias CT. Changeover Formulations for Discrete-time Mixed-integer Programming Scheduling Models. *European Journal of Operational Research*, 260 (3), 949-963, **2017**.
- [60] Dong Y, Sundaramoorthy A, Pinto JM, Maravelias CT. Solution Methods for Vehicle-based Inventory Routing in the Chemicals Sector. *Computers and Chemical Engineering*, 101, 259-278, **2017**.
- [61] Kong L, Avadiappan V, Huang K, Maravelias CT. Simultaneous Chemical Process Synthesis and Heat Integration with Unclassified Hot/Cold Process Streams. *Computers and Chemical Engineering*, 101, 210-225, **2017**.
- [62] Herron JA, Vann T, Duong N, Resasco DE, Crossley S, Lobban LL, Maravelias CT. A Systems-level Roadmap for Biomass Thermal Fractionation and Catalytic Upgrading Strategies. *Energy Technology*, 5, 130-150, **2017**.
- [63] Wu W, Yenkie K, Maravelias CT. A Superstructure-based Framework for Bioseparation Network Synthesis. *Computers and Chemical Engineering*, 96, 1-17, **2017**.
- [64] Ng RTL, Maravelias CT. Design of Biofuel Supply Chains with Variable Regional Depot and Biorefinery Locations. *Renewable Energy*, 100, 90-102, **2017**.
- [65] Martagan T, Krishnamurthy A, Leland PA, Maravelias CT. Optimal Purification Decisions for Engineer-to-Order Proteins at Aldevron. *Production and Operations Management*, 25(12), 2003-2005, **2016**.
- [66] Gupta D, Maravelias CT, Wassick JM. From Rescheduling to Online Scheduling. *Chemical Engineering Research and Design*, 116, 83-97, **2016**.

- [67] Yenkie KM, Wu W, Clark RL, Pflieger BF, Root TW, Maravelias CT. A Roadmap for the Synthesis of Separation Networks for the Recovery of Bio-based Chemicals: Matching Biological and Process Feasibility, *Biotechnology Advances*, 34, 1362-1383, **2016**.
- [68] Motagamwala AH, Won W, Maravelias CT, Dumesic JA. An Engineered Solvent System for Sugar Production from Lignocellulosic Biomass Using Biomass Derived γ -valerolactone. *Green Chemistry*, 18, 5756-5763, **2016**.
- [69] Herron JA, Maravelias CT. Assessment of Solar-to-Fuels Strategies: Photocatalysis and Electro-catalytic Reduction. *Energy Technology*, 4, 1369-1391, **2016**.
- [70] Merchan AF, Lee H-J, Maravelias CT. Discrete-Time Mixed-integer Programming Models for Solution Methods for Production Scheduling in Multistage Facilities. *Computers & Chemical Engineering*, 94, 387-410, **2016**.
- [71] Gupta D, Maravelias CT. On Deterministic Rescheduling: Major Considerations, Paradoxes, and Remedies. *Computers and Chemical Engineering*, 94, 312-330, **2016**.
- [72] Wu W, Henao CA, Maravelias CT. A Superstructure Representation, Generation, and Modeling Framework for Chemical Process Synthesis. *AIChE J.*, 62 (9), 3199-3214, **2016**.
- [73] Kong L, Sen SM, Henao CA, Dumesic JA, Maravelias CT. A Superstructure-based Framework for Simultaneous Process Synthesis, Heat Integration, and Utility Plant Design. *Computers and Chemical Engineering*, 91, 68-84, **2016**.
- [74] Martagan T, Krishnamurthy A, Maravelias CT. Optimal Condition-Based Harvesting Policies for Biomufacturing Operations with Failure Risks. *IIE Transactions*, 48(5), 440-461, **2016**.
- [75] Ng RTL, Maravelias CT. Design of Cellulosic Ethanol Supply Chains with Regional Depots. *Industrial and Engineering Chemistry Research*, 55, 3420-3432, **2016**.
- [76] Merchan AF, Maravelias CT. Preprocessing and Tightening Methods for Time-Indexed Mixed-integer Programming Models for Chemical Production Scheduling. *Computers & Chemical Engineering*, 84, 516-535, **2016**.
- [77] Velez S, Merchan AF, Maravelias CT. On the Solution of Large-Scale Mixed-integer Programming Scheduling Models. *Chemical Engineering Science*, 136, 139-157, **2015**.
- [78] Han J-H, Sen SM, Luterbacher JS, Martin Alonso D, Dumesic JA, Maravelias CT. Process Systems Engineering Studies for the Synthesis of Catalytic Biomass-to-Fuels Strategies. *Computers and Chemical Engineering*, 81, 57-69, **2015**.
- [79] Han J-H, Luterbacher JS, Martin Alonso D, Dumesic JA, Maravelias CT. A Lignocellulosic Ethanol Strategy via Nonenzymatic Sugar Production: Process Synthesis and Analysis. *Bioresource Technology*, 182, 258-266, **2015**.
- [80] Herron JA, Kim J, Upadhye AA, Huber GW, Maravelias CT. A Generalized Framework for the Assessment of Solar Fuels Technologies. *Energy and Environmental Science*, 8, 126-157, **2015**.
- [81] Velez S, Maravelias CT. Theoretical Framework for the Formulation of MIP Scheduling Models with Multiple and Nonuniform Discrete-time Grids. *Computers and Chemical Engineering*, 72, 233-254, **2015**.
- [82] Dong Y, Sundaramoorthy A, Pinto JM, Maravelias CT. A MIP Model for Inventory Routing in Industrial Gases Supply Chain. *Industrial & Engineering Chemistry Research*, 53(44), 17214-17225, **2014**.
- [83] Velez S, Maravelias CT. Advances in Mixed-integer Programming Methods for Chemical Production Scheduling. *Annual Review of Chemical and Biomolecular Engineering*, 5, 97-121, **2014**.

- [84] Merchan AF, Maravelias CT. Reformulations of Mixed-integer Programming Continuous-time Models for Chemical Production Scheduling. *Industrial & Engineering Chemistry Research*, 53(24), 10155-10165, **2014**.
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- [2] Gupta D, Maravelias CT. Online Scheduling: Understanding the Impact of Uncertainty. *Dynamics and Control of Process Systems*, Florianopolis, Brazil, April 23-26, **2019**.
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WORKSHOP PRESENTATIONS

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- [2] Maravelias CT. Multi-scale modeling Activities in the Great Lakes Bioenergy Research Center. *Modeling Approaches to Develop Sustainable Biofuels: A Joint Bioenergy Research Center Workshop*, Chicago, IL, May 2-3, **2019**.
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PLENARY, KEYNOTE AND INVITED CONFERENCE PRESENTATIONS

- [1] Maravelias CT. **(Invited)**. A Decade of Advances in Chemical Production Scheduling. In Honor of Ignacio Grossmann's 70th Birthday. *AIChE Annual Meeting*, Orlando, FL, November 10-15, **2019**.
- [2] Chen Y, Maravelias CT. **(Invited)** Variable Bound Tightening for Multiperiod Blending Problem. *INFORMS Annual Meeting*, Seattle, WA, October 20-23, **2019**.
- [3] Maravelias CT. **(Keynote)** Process Synthesis in the Era of Renewable Energy: Novel Approaches for New Types of Problems. *Foundations of Computer-Aided Process Design*, Copper Mountain Resort, CO, July 14-18, **2019**.
- [4] Maravelias CT. **(Keynote)** New Process Synthesis Approaches for Biomass-to-Fuels/Chemicals Strategies. 5th International Conference on Sustainable Chemical Product and Process Engineering, Tianjin, China, June 30 – July 3, **2019**.
- [5] Gupta D, Maravelias CT. **(Keynote)** Online Scheduling: Understanding the Impact of Demand Uncertainty. *Dynamics and Control of Process Systems*, Florianopolis, Brazil, April 23-26, **2019**.
- [6] Gupta D, Maravelias CT. **(CAST Plenary Session - Invited)** Online Scheduling Design Principles. *AIChE Annual Meeting*, Pittsburgh, PA, October 28 – November 2, **2018**.
- [7] Rawlings BC, Avadiappan V, Lafortune S, Maravelias CT, Wassick JM. **(Invited)** Accounting for the Automation System When Scheduling Chemical Plant Operations. *INFORMS Annual Meeting*, Phoenix, AZ, November 4-7, **2018**.
- [8] Lee HJ, Maravelias CT. **(Invited)** Combining the Advantages of Discrete- and Continuous-time MIP Scheduling Models. *INFORMS Annual Meeting*, Phoenix, AZ, November 4-7, **2018**.
- [9] Chen Y, Maravelias CT. **(Invited)**. Preprocessing Algorithms and Tightening Constraints for Multiperiod Blend Scheduling Problems. *INFORMS Annual Meeting*, Phoenix, AZ, November 4-7, **2018**.
- [10] Huang K, Maravelias CT. **(Invited)** A General Framework for the Evaluation of Direct Nonoxidative Methane Conversion Strategies. *2nd Natural Gas Utilization Workshop*, College Station, TX, August 13-14, **2018**.
- [11] Maravelias CT, Rawlings JB. **(Keynote)** Optimization Methods for Real-time Decision Making in Large-scale Energy Systems. *Process Systems Engineering 2018*, San Diego, CA, July 1-5, **2018**.
- [12] Maravelias CT. **(Invited)**. Discussions on Scheduling, (Re)optimization, Feedback, and Closed-loop Performance. *AIChE Annual Meeting*, In Honor of Jim Rawlings' 60th Birthday, Minneapolis, MN, October 29 – November 3, **2017**.
- [13] Maravelias CT, Herron JA. **(Invited)**. A Systems-Level View of Solar Fuels. *9th Sino-US Joint Conference on Chemical Engineering*, Beijing, China, October 15-19, **2017**.
- [14] Maravelias CT. **(Invited)**. A Systems-Level View of Solar Fuels. *Connaught Global Challenge Symposium: CO2 Chemistry Solutions to Climate Change*, University of Toronto, Toronto, ON, Canada, May 9 – 10, **2017**.
- [15] Maravelias CT. **(Plenary)**. Process Systems Engineering for Biofuels and Biochemicals. *Great Lakes Bioenergy Research Center 2016 Annual Scientific Meeting*, Lake Geneva, WI, May 17-19, **2016**.
- [16] Risbeck MJ, Maravelias CT, Rawlings JB, Turney RD. **(CAST Plenary Session)**. Mixed-Integer Model Predictive Control for Online Scheduling of HVAC Equipment in Commercial Buildings. *AIChE Annual Meeting*, Salt Lake City, UT, November 8-13, **2015**.
- [17] Herron JA, Maravelias CT. **(Invited)**. A Generalized Framework for the Assessment of Solar Fuels Technologies. In Honor of the 2014 Wilhelm Award Winner. *AIChE Annual Meeting*, Salt Lake City, UT, November 8-13, **2015**.

- [18] Maravelias CT. **(Keynote)**. Process Systems Engineering for Biomass-to-Fuels/Chemicals Strategies. *3rd International Tailor-Made Fuels from Biomass Conference*, Aachen, Germany, June 23-25, **2015**.
- [19] Maravelias CT. **(Keynote)**. Chemical Production Scheduling: From Models to Online Solution Methods. *12th Process Systems Engineering and 25th European Symposium in Computer-Aided Process Engineering* Joint Event. Copenhagen, Denmark, May 31 – June 4, **2015**.
- [20] Maravelias CT. **(Invited)**. Recent Advances in Chemical Production Scheduling. In Honor of Ignacio Grossmann's 65th Birthday. *AIChE Annual Meeting*, Atlanta, GA, November 16-21, **2014**.
- [21] Maravelias CT. **(Invited)**. On the Solution of Large Scale Chemical Production Scheduling Problems. Larry Evans's 80th birthday: How computing has changed chemical engineering. *AIChE Annual Meeting*, Atlanta, GA, November 16-21, **2014**.
- [22] Maravelias CT. **(Keynote)**. Process Systems Engineering for Renewable Energy: Lessons Learned, Challenges, and Opportunities. *8th International Conference on Foundations of Computer-Aided Process Design*, Suncadia Resort, Cle Elum, WA, July 13-17, **2014**.
- [23] Velez S, Maravelias CT. **(Invited)**. Solution Methods for MIP Production Planning and Scheduling Models. *11th International Conference on Computational Management Science*, Lisbon, Portugal, 29-31 May, **2014**.
- [24] Colvin M, Maravelias CT. **(Invited)**. Stochastic Programming Models and Algorithms for Pharmaceutical R&D Planning. *13th International Conference on Stochastic Programming*, Bergamo, Italy, 8-12 July, **2013**.
- [25] Maravelias CT, Rawlings JB, Subramanian K. **(Invited)**. A State-space Model for Chemical Production Scheduling. *26th European Conference on Operations Research*, Rome, Italy, 1-4 July, **2013**.
- [26] Velez S, Maravelias CT. **(Invited)**. Valid Inequalities Based on Demand Propagation for Chemical Production Scheduling MIP Models. *26th European Conference on Operations Research*, Rome, Italy, 1-4 July, **2013**.
- [27] Colvin M, Maravelias CT. **(Invited)**. Pharmaceutical R&D Planning. *MathBio4: SCALE Symposium*, Wisconsin Institutes for Discovery, Madison, WI, October 18-19, **2012**.
- [28] Subramanian K, Rawlings JB, Maravelias CT, Flores-Cerrillo J, Megan L. **(Keynote)** Integration of Control Theory and Scheduling Methods for Supply Chain Management. *Foundations of Computer-aided Process Operations & Chemical Process Control*, Savannah, GA, January 8 – 11, **2012**.
- [29] Zenner S, Maravelias CT. **(CAST Plenary Session)**. Classification of chemical production scheduling problems and approaches, and a general solution framework. *AIChE Annual Meeting*, Minneapolis, MN, October 16-21, **2011**.
- [30] Maravelias CT. **(Keynote)**. Integration of Production Planning and Scheduling. In Proceedings: *10th International Symposium on Process Systems Engineering*, Salvador, Brazil, August 16-20, **2009**.
- [31] Maravelias CT, Sung C. **(Keynote)**. Integration of production planning and scheduling: Review, Challenges and Opportunities. In Proceedings: *Foundations of Computer-aided Process Operations* (Eds: Ierapetritou M, Bassett M, Pistikopoulos S), 13-22, Boston, MA, June 29 – July 2, **2008**.
- [32] Colvin M, Maravelias CT. **(Invited)**. New Product Development Planning Using Stochastic Programming. *2009 INFORMS Annual Meeting*, San Diego, CA, October 11-14, **2009**.
- [33] Prasad P, Maravelias CT. **(Invited)** Task Selection, Assignment and sequencing in Multistage Batch Processes. *2006 INFORMS Annual Meeting*, Pittsburgh, PA, November 5-8.

- [34] Maravelias CT. **(Invited)**. Resource Planning for R&D Portfolio Optimization. *2006 Institute of Industrial Engineers Annual Conference and Exposition*, Orlando, FL, May 20-24.

NAMED LECTURSHIPS

- [1] *Process Systems Engineering: Challenges and Opportunities*, The Lindsay Lecture Series, Department of Chemical Engineering, Texas A&M University, College Station, September 19, **2018**.
- [2] *Process Systems Engineering for Renewable Energy*, The Bayer Lecture on Process Systems Engineering, Department of Chemical Engineering, Carnegie Mellon University, September 8, **2016**.

INVITED SEMINARS & PRESENTATIONS

- [3] *New Process Synthesis Approaches for Renewable Energy Systems*, Department of Chemical Engineering, Auburn University, Auburn, AL, November 20, **2019**.
- [4] *Process Systems Engineering for Renewable Energy*, Department of Chemical Engineering, Zhejiang University, Hangzhou, China, June 29, **2019**.
- [5] *Process Systems Engineering for Renewable Energy*, School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou, China, June 27, **2019**.
- [6] *Process Systems Engineering for Renewable Energy*, Department of Chemical Engineering, Tsinghua University, Beijing, China, June 25, **2019**.
- [7] *Process Systems Engineering for Renewable Energy*, School of Chemical Engineering, National Technical University, Athens, Greece, June 21, **2019**.
- [8] *Process Systems Engineering for Renewable Energy*, Department of Energy and Chemical Engineering, Incheon National University, Korea, May 22, **2019**.
- [9] *Process Systems Engineering for Renewable Energy*, Department of Chemical and Biomolecular Engineering, Yonsei University, Korea, May 21, **2019**.
- [10] *Process Systems Engineering for Renewable Energy*, School of Chemical and Biological Engineering, Seoul National University, Korea, May 20, **2019**.
- [11] *Process Systems Engineering for Renewable Energy*, School of Civil Environmental and Chemical Engineering, Changwon National University, May 17, **2019**.
- [12] *Process Systems Engineering for Renewable Energy*, Department of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST), Korea, May 17, **2019**.
- [13] *Process Systems Engineering for Renewable Energy*, Department of Chemical Engineering, Chonbuk National University, Korea, May 16, **2019**.
- [14] *Process Systems Engineering for Renewable Energy*, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea, May 15, **2019**.
- [15] *Chemical Production Scheduling: From Models to Real-time Methods*, Department of Chemical Engineering, Federal University of Sao Paulo, Sao Paulo, Brazil, April 23, **2019**.
- [16] *Process Systems Engineering for Renewable Energy*, Department of Chemical Engineering, Federal University of Sao Paulo, Sao Paulo, Brazil, April 23, **2019**.
- [17] *Process Systems Engineering for Renewable Energy*, Department of Chemical and Biochemical Engineering, Missouri University of Science and Technology, Rolla, MO, March 18, **2019**.
- [18] *Process Systems Engineering for Renewable Energy*, Andlinger Center, Princeton University, NJ, March 11, **2019**.

- [19] *Production Scheduling and Supply Chain Operations: Models, Solution Methods, Paradoxes, and Open Questions*, Amazon, Seattle, WA, February 27, **2018**.
- [20] *Chemical Production Scheduling and Supply Chain Optimization*, ASPEN Technology Inc, Houston, TX, October 24, **2017**.
- [21] *Process Systems Engineering for Renewable Energy*, School of Engineering, University of Edinburgh, Edinburgh, UK, September 29, **2017**.
- [22] *From Scheduling to Online Scheduling: Models, Solution Methods, Paradoxes, and Open Questions*, Center for Management Sciences, Technical University of Lisbon, Lisbon, Portugal, September 27, **2017**.
- [23] *Process Systems Engineering for Renewable Energy*, Department of Chemical and Biochemical Engineering, Technical University of Denmark, Lyngby, Denmark, September 25, **2017**.
- [24] *Optimization Methods for Catalyst Design, Chemical Process Synthesis and Operations*. ExxonMobil Research & Engineering Company, Annandale, NJ, August 4, **2017**.
- [25] *Process Systems Engineering for Solar Fuels*, Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN, February 8, **2017**.
- [26] *Process Systems Engineering for Renewable Energy*, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, December 2, **2016**.
- [27] *Process Systems Engineering for Solar Fuels*, Argonne-Northwestern Solar Energy Research Center, Northwestern University, Evanston, IL, November 3, **2016**.
- [28] *Process Systems Engineering for Renewable Energy*, Chemical and Biochemical Engineering, Rutgers University, Piscataway, NJ, October 20, **2016**.
- [29] *From Scheduling to Online Scheduling: Models, Solution Methods, Paradoxes, and Open Questions*, Process Systems Engineering Seminar Series, Department of Chemical Engineering, Carnegie Mellon University, September 7, **2016**.
- [30] *Process Systems Engineering for Renewable Energy*, Department of Chemical and Biological Engineering, Tufts University, January 25, **2016**.
- [31] *Process Systems Engineering for Renewable Energy*, Department of Chemical and Biological Engineering, Princeton University, December 2, **2015**.
- [32] *Process Systems Engineering for Solar Fuels*, Institute of Energy Technology, Eidgenössische Technische Hochschule (ETH) Zurich, Switzerland, June 22, **2015**.
- [33] *Process Systems Engineering for Renewable Energy*, Institute for Chemical and Bio Engineering, Eidgenössische Technische Hochschule (ETH) Zurich, Switzerland, June 10, **2015**.
- [34] *Process Systems Engineering for Renewable Energy*, Mechanical Engineering, École Polytechnique Fédérale de Lausanne, Switzerland, June 9, **2015**.
- [35] *Advances in Chemical Production Scheduling*. AIChE CAST Division Webinar, January 27, **2015**.
- [36] *Process Systems Engineering for Renewable Energy*. The Bren School of Environmental Science & Management, University of California – Santa Barbara, January 20, **2015**.
- [37] *Chemical Production Scheduling: From Models to Online Solution Methods*. Center for Control, Dynamical-Systems, and Computation, University of California – Santa Barbara, May 23, **2014**.
- [38] *Process Systems Engineering for Renewable Energy*. Department of Chemical Engineering and Materials Science. University of Minnesota, Minneapolis, MN, March 27, **2014**.
- [39] *Chemical Production Scheduling: Notation, Problem Classes, Modeling Approaches, and Solution Methods*. Carnegie Mellon University, Enterprise-wide Optimization Seminar Series (webinar), February 27, **2014**.

- [40] *Process Systems Engineering for Renewable Energy*. Department of Chemical and Petroleum Engineering, University of Pittsburgh, Pittsburgh, PA, February 7, **2014**.
- [41] *Process Systems Engineering for Renewable Energy*. School of Chemical, Biological & Materials Engineering, University of Oklahoma, Norman, OK, December 5, **2013**.
- [42] *Advances in Mixed-integer Programming Methods for Chemical Production Scheduling*. Department of Automatic Control, Lund University, Lund, Sweden, October 11, **2013**.
- [43] *Chemical Production Scheduling: Overview and Future Directions*. 25th Anniversary McMaster Advanced Control Consortium Meeting and Workshop, McMaster University, Hamilton, Ontario, Canada, May 15, **2013**.
- [44] *Integration of Chemical Production Planning and Scheduling: An assessment of bottlenecks Related to Production Plan Execution*. Petrobras International Seminar on Production Planning and Scheduling, Rio de Janeiro, Brazil, October 11, **2012**.
- [45] *Integration of Chemical Production Planning and Scheduling*. TU Dortmund, Dortmund, Germany, June 28, **2012**.
- [46] *Chemical Production Scheduling: Notation, Problem Classes, Modeling Approaches, Theory, and Solution Methods*. Center for Process Systems Engineering, Imperial College, London, UK, June 25, **2012**.
- [47] *Modeling and Solution Methods for Stochastic Programming Problems under Endogenous Observation of Uncertainty*. Department of Computing, Imperial College, London, UK, June 21, **2012**.
- [48] *Integration of Simulation and Optimization Methods for Chemical Process Synthesis*. Wisconsin Institute for Discovery - Doing Optimization at Wisconsin Seminar Series, University of Wisconsin, Madison, WI, October 3, **2011**.
- [49] *Production Planning and Scheduling in the Chemical Industries*. Department of Mathematical Physical and Computational Sciences, Faculty of Engineering, Aristotle University, Thessaloniki, Greece, May 27, **2011**.
- [50] *Integration of Production Planning and Scheduling* Department of Chemical Engineering, Texas A&M University, College Station, TX, March 8, **2011**.
- [51] *Sunshine to Petrol - Reimagining Transportation Fuels: Systems-level Studies*. Sandia National Laboratories, Albuquerque, NM, February 23, **2011**.
- [52] *Integration of Production Planning and Scheduling*. Department of Chemical and Biological Engineering, Princeton University, 16 February, **2011**.
- [53] *Optimization Methods for Chemical Process Design and Operations*. ExxonMobil Research & Engineering Company, Annandale, NJ, January 31, **2011**.
- [54] *Mixed-integer Programming Methods in Process Systems Engineering*, ABB, Corporate Research Center, Ladenburg, Germany, June 16, **2010**.
- [55] *Integration of Production Planning and Scheduling*. Department of Chemical and Biological Engineering, Illinois Institute of Technology, Chicago, IL, January 13, **2010**.
- [56] *Integration of Production Planning and Scheduling in the Chemical Industry*. Department of Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA, September 24, **2009**.
- [57] *Integration of Production Planning and Scheduling in the Chemical Industry*. Department of Chemical Engineering, University of Delaware, Newark, DE, September 18, **2009**.
- [58] *Modeling and Solution Methods for Production Planning and Scheduling*, Cervecería Cuauhtemoc Moctezuma, Monterrey, Mexico, August 31, **2009**.

- [59] *Integration of Production Planning and Scheduling in the Chemical Industry*. The Operations Research Society – Mathematical Programming Group, London, UK, May 27, **2009**.
- [60] *Modeling and Solution Methods for a Class of Stochastic Programming Problems under Endogenous Observation of Uncertainty*. Automatic Control Laboratory, Eidgenössische Technische Hochschule (ETH), Zurich, Switzerland, May 20, **2009**.
- [61] *Modeling and Solution Methods for Stochastic Programming Problems under Endogenous Uncertainty*. Center for Computational Engineering Science, RWTH Aachen University, Aachen, Germany, May 18, **2009**.
- [62] *Integration of Production Planning and Scheduling*. School of Chemical and Biomolecular Engineering, Georgia Tech, Atlanta, GA, April 15, **2009**.
- [63] *Integration of Production Planning and Scheduling in the Chemical Industry*. Department of Chemical Engineering, McMaster University, Hamilton, Ontario, Canada, March 26, **2009**.
- [64] *Integration of Production Planning and Scheduling*. Department of Chemical and Biomolecular Engineering, University of California – Los Angeles, January 23, **2009**.
- [65] *Supply Chain Management*, Praxair, Buffalo, NY, October 23, **2008**.
- [66] *Integration of Production Planning and Scheduling*. Department of Chemical Engineering and Chemical Technology, Imperial College, London, UK, May 30, **2008**.
- [67] *Management of the Pharmaceutical Research and Development Pipeline Using Stochastic Programming*. Department of Chemical Engineering, University College London, London, UK, May 29, **2008**.
- [68] *Integration of Production Planning and Scheduling*. Department of Chemical Engineering, Universitat Polytechnica de Catalunya, Barcelona, Spain, May 27, **2008**.
- [69] *Production Planning in the Chemical Industry*. Department of Chemical Engineering, University of Iowa, Iowa City, IA, November 29, **2007**.
- [70] *A Stochastic Programming Approach to Pharmaceutical Research and Development Planning*. Department of Industrial and Systems Engineering, University of Wisconsin – Madison, Madison, WI, October 12, **2007**.
- [71] *Production Planning in the Chemical Industry*. Department of Chemical Engineering, Universidad Nacional del Sur, Bahia Blanca, Argentina, March 30, **2007**.
- [72] *Modeling and Optimization of the Pharmaceutical Supply Chain*. Centocor, St. Louis, MO, January 7, **2007**.
- [73] *Supply Chain Optimization in the Chemical Industry*. Department of Chemical Engineering, University of Rhode Island, Kingston, RI, March 9, **2006**.
- [74] *Scheduling in the Chemical Industry*. Committee on Optimization and its Applications – Fall 2004 Seminar Series, University of Wisconsin – Madison, WI, November 2, **2004**.
- [75] *Optimization Methods for the Scheduling of Batch Processes*. Department of Chemical and Biological Engineering, University of Wisconsin – Madison, WI, March 9, **2004**.
- [76] *Optimization Methods for the Scheduling of Batch Processes*. Department of Chemical Engineering, Texas A&M University, College Station, TX, Spring **2004**.