

EDUCATION

RUTGERS UNIVERSITY

- **DOCTOR OF PHILOSOPHY (PHD)** – Industrial & Systems Engineering | October 2016
 - Dissertation: Simulation-Based Optimization Models for Electricity Generation Expansion Planning Problems Considering Human Health Externalities
 - Advisor: David Coit
 - Committee: David Coit (Chair), Frank Felder (Co-Chair), Anmarie Carlton, Susan Albin, Honggang Wang
- **MASTER OF SCIENCE (MS)** – Industrial & Systems Engineering | May 2013
- **MASTER OF SCIENCE (MS)** – Applied & Mathematical Statistics | May 2013
- **BACHELOR OF SCIENCE (BS)** – Ceramic Engineering | May 2007

STEVENS INSTITUTE OF TECHNOLOGY

- **MASTER OF ENGINEERING (MENG)** – Pharmaceutical Manufacturing Practices | May 2009

ACADEMIC APPOINTMENTS

ASSISTANT PROFESSOR – DEPARTMENT OF SUPPLY CHAIN MANAGEMENT | RUTGERS BUSINESS SCHOOL

📅 September 2017 – Current 📍 Newark, NJ

- Primary research areas include, but are not limited to, the following:
 - Power systems planning & optimization problems related to generation expansion planning, unit commitment, expansion and incorporation of renewables, and smart grid applications.
 - Probabilistic modeling related to systems reliability design applications, disruptions, and risk.
 - Simulation and global optimization techniques applicable to various supply chain and operational problem domains

PUBLICATIONS & PRESENTATIONS

PUBLICATIONS

(*: CORRESPONDING AUTHOR)

- X. Xu, W. Guo, M. Rodgers*. A Real-time Decision Support Framework to Mitigate Quality Degradation in Perishable Supply Chains, *Computers & Industrial Engineering (In Press)*. [Impact Factor: 4.135]
- M. Rodgers*, D. Coit, F. Felder, A.G. Carlton, A Metamodeling Framework for Quantifying Health Damages of Power Grid Expansion Plans, *International Journal of Environmental Research and Public Health*, 16(10): 1-21, 2019, <https://doi.org/10.3390/ijerph16101857>. [Impact Factor: 2.849 | Special Issue on Air Quality and Health Predictions]
- M. Rodgers*, D. Singham, A Framework for Assessing Disruptions in a Clinical Supply Chain Using Bayesian Belief Networks, *Journal of Pharmaceutical Innovation*, 2019, <https://doi.org/10.1007/s12247-019-09396-2>. [Impact Factor: 1.692]
- M. Rodgers*, R. Oppenheim, Ishikawa Diagrams and Bayesian Belief Networks for Continuous Improvement Applications, *The TQM Journal*, 31(3): 294-318, 2019, <https://doi.org/10.1108/TQM-11-2018-0184>. [Impact Factor: 2.47]
- M. Rodgers*, D. Coit, F. Felder, A.G. Carlton. Assessing the Effects of Power Grid Expansion on Human Health Externalities, *Socio-Economic Planning Sciences*, 66: 92-104, 2019, <https://doi.org/10.1016/j.seps.2018.07.011>. [Impact Factor: 4.149 | Invited Paper | Scimago Ranking: #29 out of 192 – Management Science and Operations Research]
- M. Rodgers*, D. Coit, F. Felder, A.G. Carlton. Generation Expansion Planning Considering Health and Societal Damages – A Simulation-Based Optimization Approach, *Energy*, 164: 951-963, 2018, <https://doi.org/10.1016/j.energy.2018.09.004>. [Impact Factor: 6.082 | Scimago Ranking: #8 out of 125 – Energy (Miscellaneous)]
- C.M. Farkas, M.D. Moeller, F. Felder, K.R. Baker, M. Rodgers, A.G. Carlton, Temporalization of Peak Electric Generation PM Emissions during High Energy Demand Days, *Environmental Science & Technology*, 49(7): 4696-4704, 2015, <https://doi.org/10.1021/es5050248>. [Impact Factor: 7.864 | Scimago Ranking: #6 out of 125 – Environmental Chemistry]

PUBLICATIONS (UNDER REVIEW & IN PREPARATION)

(*: CORRESPONDING AUTHOR)

UNDER REVIEW

- M. Rodgers*, A. Kapoor, A. Baveja, S. Mukherjee. The Power of Answering the Right Question to Resolve Business Dilemmas (*California Management Review*).
- S. Tsianikas, N. Yousefi, J. Zhou, M. Rodgers*, D. Coit, A Sequential Resource Investment Planning Framework using Reinforcement Learning and Simulation-Based Optimization (*Applied Energy*).
- S. Selcuklu, M. Rodgers*, A. Movlyanov, Economically and Environmentally Sustainable Power System Expansion: A Case Study for Turkey (*Journal of Cleaner Production*).
- M. Rodgers*, Pathways to Eliminate Carbon Emissions via Renewable Energy Investments at Higher Education Institutions (*Socio-Economic Planning Sciences*).
- A. Park, M. Rodgers*, S. Cho, Y. Zhao, Toward Sustainable Freight Services: Ensuring Equitable Job Distribution for Independent Truckers (*Socio-Economic Planning Sciences*).
- D. Singham, M. Rodgers*, A Battery Depletion Risk Measure for Centralized Systems With Storage Capabilities (*IEEE Transactions on Power Systems*).
- X. Xu, M. Rodgers*, W. Guo. A Real-time Decision Support Framework to Mitigate Quality Degradation in Perishable Supply Chains (*Journal of Manufacturing Systems*).
- S. Tsianikas, N. Yousefi, J. Zhou, M. Rodgers, D. Coit, Deep Reinforcement Learning for Power and Storage Expansion Planning in Microgrids (*Production and Operations Management*).

IN PREPARATION

- M. Rodgers*, A. Kapoor, A. Baveja, S. Mukherjee. Big Data Excellence: A Framework for Sustained Performance (*Stage: Submission Preparation | Target Journal: Information Systems Research*).
- M. Rodgers, Optimal Resource Deployment with Stochastic Availability (*Stage: Model Development | Target Journal: Production & Operations Management*).
- K. Mun, M. Rodgers, W. Cai, X. Xu, Microgrid Integration for Improved Electricity Access in Kenya (*Stage: Model Development | Target Journal: Production & Operations Management*).
- M. Rodgers, D. Dreyfus, Designing an Ambulance Deployment System – A Case Study for the Ghana’s Hospital Networks (*Stage: Model Development | Target Journal: Production & Operations Management*).
- M. Ameri, M. Rodgers, T. Kurtzberg, D. Singham, Understanding the Discrimination in the Hiring Process Using Simulation Methods (*Stage: Model Development | Target Journal: Journal of Business Ethics*).

CONFERENCE PROCEEDINGS

- S. Selcuklu, D. Coit, F. Felder, M. Rodgers, N. Wattanapongsakorn, A new methodology for solving multi-objective stochastic optimization problems with independent objective functions, *2013 IEEE International Conference on Industrial Engineering and Engineering Management*, pp. 101-105, 2013.
- N. Chatwattanasiri, D. Coit, M. Rodgers, S. Song, System Reliability Optimization Considering Uncertain Future Operating Conditions and Usage Stresses, *18th ISSAT Reliability and Quality in Design Conference*, pp. 667-674, 2012.

PRESENTATIONS**INVITED PRESENTATIONS**

- The Power of Answering the Right Question to Resolve Business Dilemmas, *SESA Systems Webinar* – August 2020
- Big Data Excellence: A Framework for Sustained Performance, *IISE ELSS Annual Conference* – September 2019, Atlanta, GA

- Simulation-based Optimization Models for Electricity Generation Expansion Planning Problems Considering Human Health Externalities
 - *CRRRI Eastern Meeting* – May 2019, Shawnee on Delaware, PA
 - *POMS Annual Conference* – May 2019, Washington, DC
 - *INFORMS Annual Meeting* – Oct 2017, Houston, TX
 - *Rutgers University – Department of Industrial & Systems Engineering Seminar* – Nov 2017, Piscataway, NJ
 - *New Jersey Institute of Technology* – December 2017, Newark, NJ
 - *Rutgers Energy Institute* – March 2018, New Brunswick, NJ
- We Are Pioneers!, Johnson & Johnson's Supply Chain Global Symposium, Skillman, NJ –2018
- A Framework to Leverage Cause-and-Effect Diagrams and Bayesian Belief Networks in Continuous Improvement Applications, *IIE ELSS Annual Conference* – September 2018, Atlanta, GA

OTHER PRESENTATIONS

- Big Data Excellence: A Framework for Sustained Performance, *INFORMS Annual Meeting* – October 2019, Seattle, WA
- Real-Time Dispatching in Electricity Markets, *INFORMS Annual Meeting* – November 2018, Phoenix, AZ
- A Framework for Assessing Disruptions in a Clinical Supply Chain Using Bayesian Belief Networks, *POMS Annual Conference* – May 2018, Houston, TX
- Effects of Human Health Externalities on Expansion Plans, *INFORMS Annual Meeting* – Nov 2014, San Francisco, CA
- Meta-modeling Societal Health Costs of Electricity Generation Using Kriging, *ISERC* – May 2013, San Juan, Puerto Rico
- A Roadmap for Formulating the Generation Expansion Planning Problem to Include Societal Health Costs – *INFORMS Annual Meeting* – Oct 2012, Phoenix, AZ

TEACHING EXPERIENCE

RUTGERS UNIVERSITY

New Brunswick, NJ

- Fall 2019 – Demand Planning & Fulfillment (33:799:310:02) | Teaching Effectiveness: 4.96/5; Course Quality: 4.93/5
- Spring 2019 – Demand Planning & Fulfillment (33:799:310:01) | Teaching Effectiveness: 4.92/5; Course Quality: 4.92/5
- Fall 2018 – Demand Planning & Fulfillment (33:799:310:02) | Teaching Effectiveness: 4.94/5; Course Quality: 4.4/5
- Fall 2018 – Demand Planning & Fulfillment (33:799:310:03) | Teaching Effectiveness: 4.93/5; Course Quality: 4.9/5
- Spring 2018 – Demand Planning & Fulfillment (33:799:310:01) | Teaching Effectiveness: 4.83/5; Course Quality: 4.98/5
- Fall 2017 – Demand Planning & Fulfillment (33:799:310:01) | Teaching Effectiveness: 4.68/5; Course Quality: 4.62/5

Newark, NJ

- Spring 2020 – Demand Planning & Fulfillment (33:799:310:02) | Teaching Effectiveness: 4.63/5; Course Quality: 4.68/5
- Fall 2019 – Operations Analysis (22:799:580:21) | Teaching Effectiveness: [MS Section: 4.60/5 | MBA Section: 4.43/5]; Course Quality: [MS Section: 4.60/5 | MBA Section: 4.29/5]
- Spring 2019 – Demand Planning & Fulfillment (29:799:310:01) | Teaching Effectiveness: 4.85/5; Course Quality: 4.67/5
- Spring 2018 – Demand Planning & Fulfillment (29:799:310:01) | Teaching Effectiveness: 4.79/5; Course Quality: 4.68/5

NEW JERSEY INSTITUTE OF TECHNOLOGY (NJIT)

Newark, NJ

- Spring 2017 – Calculus for Business

UNION COUNTY COLLEGE

Cranford, NJ

- Fall 2016 – Elementary Statistics
- Spring 2016 – Elementary Statistics

- Spring 2013 – Introduction to Algebra 2, Pre-Algebra
- Spring 2012 – Introduction to Algebra 1

SERVICE, AWARDS & AFFILIATIONS

PROFESSIONAL SERVICE

EDITORIAL SERVICE

- Consulting Editor, *Journal of Education for Business* | Sept 2018 – Jan 2020

AD-HOC REVIEWER

Applied Energy, Energies, International Journal of Environmental Research and Public Health, Journal of Renewable and Sustainable Energy, Reliability Engineering and System Safety, Socio-Economic Planning Sciences, Sustainability

OTHER SERVICE ACTIVITIES

- Panel Member - New Jersey Offshore Wind: Supply Chain & Workforce Development Roundtable Discussion, Newark, NJ - 2019
- Keynote Speaker at Johnson & Johnson's Supply Chain Global Symposium, Skillman, NJ –2018
- Workshop Leader – Introduction to STEM-Related Career Paths, Edison Central 6 School, West Orange, NJ - 2013
- Workshop Leader – Introduction to Engineering Disciplines, Rutgers University, New Brunswick, NJ – 2011, 2012, & 2013
- Executive Board Member, Rutgers University Chapter of the National Society of Black Engineers (NSBE) | 2005 - 2007

UNIVERSITY SERVICE

- Undergraduate Students Advised:
 - Amy Wang, Rutgers University, Honors Thesis Research Advisor (2018 – Current)
 - Siddhesh Dabholkar, Undergraduate Senior Capstone Research Project (2018-2019)
 - Tiffany Fong, First-year Interest Group Seminar (FIGS) Faculty Mentor (2018-2019)
 - Xingye Feng, Aresty Student Research Co-Advisor (2018-2019)
 - Amy Wang & Dustin Wang, Rutgers Energy Institute (REI) Summer Internship Co-Advisor (Summer 2018)
- Dissertation Committees:
 - Shenghan Guo – Rutgers University, School of Engineering, Committee Member
 - Stamatis Tsianikas, Rutgers University – School of Engineering, Committee Member
 - Nooshin Yousefi – Rutgers University, School of Engineering, Committee Member
 - Jian Zhou, Rutgers University – Rutgers University, School of Engineering, Committee Member
- Faculty Advisor:
 - Phi Chi Theta – Rutgers University Chapter (2018 – Current)
 - Rutgers University Chapter of the American Society for Quality (RUASQ) (2018 – Current)
- New Brunswick Faculty Council Representative (Fall 2019 – Current)
- Member – Rutgers Energy Institute (REI) Director Search Committee (2018)

DEPARTMENTAL SERVICE

- RBS MS Supply Chain Analytics Independent Study Advisor
 - Spring 2020: Rounak Nischal, Rongxin Zhuo
 - Fall 2019: Remya Balakrishnan, Meng-Chu Chien, Hanisha Jamtani, Akshay Rawat, Ailun Xin, Yang Zeng
- Dissertation Committees
 - Maryam Mahdikhani, Rutgers Business School, Committee Member
 - Olena Rudna, Rutgers Business School, Committee Member
 - Ai-Chih Chang, Rutgers Business School, Committee Member (Placed at NJIT – Fall 2019)

- Arim Park, Rutgers Business School, Committee Member (Placed at North Carolina A&T – Fall 2019)
- Newark Undergraduate Program Academic Coordinator (2020 – Current)
- Co-Organizer – Supply Chain Management Seminar Series (2019 – Current)
- Co-Organizer – 2020 Rutgers TEN Plus Supply Chain Innovation Challenge, (2019 – Current)
- Volunteer – 2018 Rutgers TEN Plus Supply Chain Case Challenge, 2018
- Institute for Supply Management (ISM) Liaison (2020 – Current)

GRANTS

- NJ Small Business Development Center | 2020 | \$90,000
- PECE Mini Grant | 2019 | \$145
- PECE Mini Grant | 2018 | \$180

AWARDS

- RBS Junior Faculty Teaching Award, 2019
- NSF IGERT For Fuels Fellowship, 2011 – 2013
- Ralph Bunche Distinguished Graduate Fellowship, 2010 – 2011

CERTIFICATIONS


- Verizon VLSS – Six Sigma Black Belt | Jan 2017
- ASQ Six Sigma Green Belt (Lic # 3196) | June 2009


AFFILIATIONS

- Member, American Society for Quality (ASQ) | 2009 - Present
- Member, INFORMS | 2011 – Present
- Member, Production and Operations Management Society (POMS) | 2017 – Present

PROFESSIONAL EXPERIENCE


BUSINESS PROCESS MANAGER | VERIZON

 June 2016 – August 2017


 Basking Ridge, NJ


- Built a statistical model using principal component analysis (PCA) and K-means clustering to evaluate facility performance and potential consolidation and/or outsourcing decisions.
- Collaborate with leadership and maintenance operations to establish new KPIs to ensure vehicle availability for internal Verizon business partners.
- Conducted an ad-hoc analysis to study the survival probabilities and vehicle uptime by vehicle class and region.
- Led an enterprise-wide transition and implementation of a new aftermarket parts vendor.

TEAM LEAD – MANAGEMENT ENGINEERING | THE PORT AUTHORITY OF NY & NJ

 August 2015 – June 2016

 New York, NY

 September 2013 – July 2014


 Jersey City, NJ

- Led a team of junior level analysts in conducting a wide array of management analyses and high priority industrial engineering and strategic consulting projects with estimated annual savings ranging from approximately \$200K to \$10.5MM per project.
- Developed automated dashboards and reporting tools using Microsoft Excel and VBA for productivity and overtime analyses for Senior Leadership.
- Performed various data collection activities including field-based time studies, client and personnel interviews, sampling of staff workload, and benchmarking efforts to research best practices.

MARK RODGERS

Assistant Professor
Rutgers, The State University of New Jersey
Rutgers Business School – Newark and New Brunswick
Department of Supply Chain Management

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- Collaborated with Port Authority line departments and facilities on projects related to identification of process improvement opportunities, optimal resource allocation and utilization, operational planning, and organizational structure. Annual savings per project range from 2 to 11 FTE.


Assistant Professor
Rutgers, The State University of New Jersey
Rutgers Business School – Newark and New Brunswick
Department of Supply Chain Management

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Newark, NJ 07012-3122 USA

 973-353-1287

 mrodgers@business.rutgers.edu

MANAGEMENT CONSULTANT | ZS ASSOCIATES

 July 2014 – July 2015

 Princeton, NJ

Project 1: Sales Force Sizing & Structure | March 2015 – July 2015

- Collaborated with a team of offshore and onshore analysts in building, customizing, and implementing an integer-programming optimization model that determines the optimal sales force size and structure for a major pharmaceutical client.


Project 2: Data Stewardship Lead | October 2014 – July 2015


- Managed all data stewardship activities for a major pharmaceutical client including healthcare prescriber universe, product master database, and pharmacy benefit manager/plan network.
- Supervised a team of 12 offshore and 2 onshore resources to ensure key milestones and master data management activities are satisfied.
- Developed detailed process flow diagrams of business processes to identify process improvement opportunities.

Project 3: Diabetes Segmentation Lead Analyst | July 2014 – October 2014

- Conducted an Integrated Delivery Network (IDN) segmentation analysis based on diabetes market sales and prescriber control within IDNs to prioritize key IDNs for sales targeting for a major pharmaceutical company.
- Conducted a territory-level segmentation analysis based on diabetes market sales to identify key regions and territories for sales force alignment purposes.


ANALYST, STRATEGIC & OPERATIONS PLANNING | BRISTOL-MYERS SQUIBB COMPANY

 November 2009 – August 2010

 New Brunswick, NJ

- Executed a lean project that streamlined the volume & inventory projection processes
- Developed a scenario-based inventory model to support the team in the safety stock decision-making process.
- Compiled inventory metrics reports on a monthly basis to monitor performance against targets.


PROCESS OPTIMIZATION ANALYST | BRISTOL-MYERS SQUIBB COMPANY

 January 2008 – November 2009

 New Brunswick, NJ

- Executed a lean project that eliminated waste in the transfer of process knowledge from formulation scientists to clinical manufacturing.
- Managed production planning activities for oral solid dosage manufacturing for clinical supplies.
- Developed monthly metrics that detailed operational performance against performance targets.

ASSOCIATE TECHNICAL INVESTIGATOR | BRISTOL-MYERS SQUIBB COMPANY

 May 2005 – January 2008

 New Brunswick, NJ

- Employed Process Analytical Technologies (PAT) to assess characteristics of raw and in-process materials.
- Conducted Enslin studies on powder blends and granulations to measure powder moisture absorption.
- Analyzed the flow properties of in-process powders to ensure optimal material flow during production.