

**VINAY GONELA, Ph.D.**  
Assistant Professor of Management  
1001 Leadership Place, Killeen, TX – 76549

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## EDUCATION

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Ph.D., Industrial Engineering, 2013  
North Dakota State University, Fargo, ND  
Dissertation: Stochastic optimization of sustainable industrial symbiosis based hybrid generation bioethanol supply chains

Master of Science, Industrial and Systems Engineering, 2008  
Specialization: Engineering Management  
University of Florida, Gainesville, FL

Bachelor of Engineering, Mechanical Engineering, May 2006  
RKDF Institute of Science and Technology  
Bhopal, Madhya Pradesh, India

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## ACADEMIC EXPERIENCE

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- Assistant Professor of Management, Southwest Minnesota State University, 2014 – Present
- Research Assistant/Teaching Assistant, North Dakota State University, 2009 – 2013
- Veterans Upward Bound Instructor, 2012

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## COURSES TAUGHT

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### *Graduate courses*

- Management of Production and Operations (MBA 609 - In-class/Online) - 4 course
- Technology Management (MBA 680 – Online) – 1 course

### *Undergraduate courses*

- Production and operations Management (MGMT 422 - In-class/Online) - 8 courses
- Project Management (MGMT 323 – In-class) – 1 course
- Supply chain Management (MGMT 425 – Online) – 2 course
- Quality Management (MGMT 325 – Online) – 1 course
- Automation labs (IME 482)
- Work/Station Design and Measurement labs (IME 311)
- Systems engineering and management teaching assistant (IME 450)
- Simulation lab

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## RESEARCH EXPERIENCE

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### *Dissertation*

- A new industrial symbiosis based hybrid generation bioethanol supply chain (ISHGBSC) is designed to improve profit, GHG emissions, land usage, water usage and energy efficiency aspects of sustainability. In addition, uncertainties are included in the study.
  - Various sustainability regulations related to GHG emissions, land usage, water usage and energy intensity are applied to ISHGBSC to understand the impact of regulations of the supply chain design.
  - A synchronized decision making process is established for policy makers and investors to move from one lower state of sustainability to another higher state of sustainability
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- A decision framework combining linear programming and large scale mixed integer linear programming is developed to determine the optimal bioenergy based industrial symbiosis configuration.

#### ***Midwest Mountain Veteran's Engineering Resource Center (VERC) project***

- Developed performance metrics to understand patient needs and synchronize with management performance evaluation using dashboards and third next available (3NA) scheduling strategy.
- Designed implementation plans for implementing the proposed metrics at each of the national healthcare setting.

#### ***Veteran's Engineering Resource center (VERC) project***

- Developed decision tool to determine the best scheduling model for any given health care setting.
- Designed mathematical and simulation models to improve the performance of the healthcare setting.
- Designed prediction models to forecast the patient demand and provider supply for national healthcare settings.
- Developed implementation plans to implement proposed scheduling model for any given healthcare setting

#### ***Local Veteran's Affair Medical project***

- Designed mathematical and simulation models to improve efficiency of primary care clinics, laboratory, and minimize conflicts in Audio booth utilizations.
- Conducted define, measure, analyze, improve, control (DMAIC) to understand and improve the performance of the local hospital.
- Implemented lean and continuous improvement strategies to reduce wastes and design Standard Operating Procedures (SOP) for various clinic settings.
- Documented the analysis and gave presentations to the VA management on the performance of various clinics.

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## **PUBLICATIONS**

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### ***Journal***

- Gonela, V., Zhang, J., Osmani, A. (2015). "Stochastic optimization of Industrial Symbiosis based Hybrid Generation bioethanol supply chain under uncertainties" Industrial and computer science journal.
- Gonela, V., Zhang, J., Osmani, A., & Onyeaghala, R. (2015). Stochastic optimization of sustainable hybrid generation bioethanol supply chains. Transportation Research Part E: Logistics and Transportation Review, 77, 1-28.
- Gonela, V., & Zhang, J. (2014). Design of the optimal industrial symbiosis system to improve bioethanol production. Journal of Cleaner Production, 64, 513-534
- Zhang, J., Osmani, A., Awudu, I., & Gonela, V. (2013). An integrated optimization model for switchgrass-based bioethanol supply chain. Applied Energy, 102, 1205-1217.
- Osmani, A., Zhang, J., Gonela, V., & Awudu, I. (2013). Electricity generation from renewables in the United States: Resource potential, current usage, technical status, challenges, strategies, policies, and future directions. Renewable and Sustainable Energy Reviews, 24, 454-472.

### ***Conference proceedings***

- Gonela, V., Zhang, J., Osmani, A., Awudu, I., Farahmand, K., Shi, J., Designing effective and efficient scheduling policy to improve laboratory performance, Proceedings of the 2013 Industrial and Systems Engineering Research Conference.
  - Zhang, J., Osmani, A., Gonela, V., & Awudu, I., Adaptive Hospital Bed Allocation Approach under Multiple Uncertainties, Proceedings of the 2013 Industrial and Systems Engineering Research Conference.
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- Osmani, A., Zhang, J., Awudu, I., & Gonela, V., Optimal Scheduling Approach to Minimize Resource Conflict in Audiology Clinics, Proceedings of the 2013 Industrial and Systems Engineering Research Conference.

#### ***Papers under review***

- Awudu, I., Zhang, J., Osmani, A., Gonela, V., Asa, E., Modelling economic, social and environmental sustainability in a hybrid generation biofuel supply chain under uncertainties, International Journal of Production Economics.

#### ***Working paper***

- Fogarty, C., Gonela, V., Szmerekovsky, J., Non cooperative Vs. Cooperative placement of relay stations under wireless sensor networks – Planned to submit to International Journal of Business Analytics (IJBAN)

#### ***Project Reports***

- J. Zhang, A. Osmani, V. Gonela, 2012, “Access and Scheduling: Measuring scheduling effectiveness in VHA – Metric implementation plan”, Midwest Mountain VERC, P1- 13
- J. Zhang, A. Osmani, V. Gonela, 2012, “Access and Scheduling: Measuring scheduling effectiveness in VHA – Validation of measures”, Midwest Mountain VERC, P1- 17
- J. Zhang, A. Osmani, I. Awudu, V. Gonela, 2012, “Access and Scheduling: Measuring scheduling effectiveness in VHA – Metrics and Validation plan”, Midwest Mountain VERC, P1- 17
- J. Zhang, V. Gonela, N. Aslani, A. Osmani and I. Awudu, 2011, “Final Briefing: Computer Model to Allow Facilities to Decide Whether to Schedule in a Centralized or Decentralized Manner”, VERC, P1-68.
- J. Zhang, V. Gonela, N. Aslani, and A. Osmani, 2011, “Development of performance evaluation tool for Patient Appointment Scheduling System”, VERC, P1-38.
- J. Zhang, V. Gonela, N. Aslani, and A. Osmani, 2011, “Development of implementation plan for Patient Appointment Scheduling System”, VERC, P1-60.
- J. Zhang, V. Gonela, and N. Aslani, 2010, “Development of centralized, decentralized and hybrid scheduling model”, VERC, P1-33
- J. Zhang, V. Gonela, and N. Aslani, 2010, “Development of the decision tool”, VERC, P1-49.
- J. Zhang, V. Gonela, D. Song, N. Aslani and N. Dharmadhikari, 2010, “VA briefing on centralized vs. Decentralized scheduling”. VERC. P1-43.
- J. Zhang, V. Gonela, and N. Aslani, 2010, “Summary of Current State Clinic Flow Findings”. VERC. P1-99.
- J. Zhang, V. Gonela, and N. Aslani, 2010. Literature analysis on clinic flows and the analysis. VERC. P1-35
- J.Zhang, K. Farahmand, Shi. J, V. Gonela, and R. Srinivasan, 2010. Laboratory Report. VAMC. P1-77.
- J.Zhang, K. Farahmand, Shi. J, V. Gonela, and R. Srinivasan, 2010. Audiology clinic space improvement. VAMC. P1-53
- J. Zhang, V. Gonela, and N. Aslani, 2009. Literature review on clinic flows and the analysis. VERC. P1-70.

#### ***Presentations at professional meetings***

- Gonela, V., Zhang, J., Osmani, A., Szmerekovsky, J., Stochastic optimization of sustainable industrial symbiosis based hybrid generation bioethanol supply chains (2015), INFORMS 2015.
  - Fogarty, C., Gonela, V., Szmerekovsky, J., “Non cooperative Vs. Cooperative placement of relay stations under wireless sensor networks”, 2015 INFORMS conference
  - Vallabh, K., Gonela, V., Nygard, K., Optimal placement of relay stations in wireless sensor network, Newwork faculty forum (2015), Southwest Minnesota state University
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- Gonela, V., Zhang, J., Osmani, A., Awudu, I., Farahmand, K., Shi, J., Designing effective and efficient scheduling policy to improve laboratory performance, ISERC Conference, May 2013, San Juan, Puerto Rico.
  - Zhang, J., Osmani, A., Awudu, I., & Gonela, V., Optimal Scheduling Approach to Minimize Resource Conflict in Audiology Clinics, ISERC Conference, May 2013, San Juan, Puerto Rico.
  - Gonela, V., Zhang, J., Awudu, I., Osmani, A., Decision tool to decide best scheduling system for clinic setting, ISERC Conference, May 2013, San Juan, Puerto Rico.
  - Zhang, J., Osmani, A., Gonela, V., & Awudu, I., Adaptive Hospital Bed Allocation Approach under Multiple Uncertainties, ISERC Conference, May 2013, San Juan, Puerto Rico.
  - Gonela, V., Zhang, J., Design of sustainable industrial symbiosis to improve bioethanol production, INFORMS conference, Oct 2013
  - Chijioko, I., Gonela, V., Szmerekovsky, J., “Decision support system to schedule coffee shop staff”, 2013 INFORMS conference.

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#### **PROFESSIONAL/INSTITUTIONAL AND COMMUNITY SERVICE**

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- Reviewer for international journal of cleaner production, computer science and Industrial engineering journal
- Developed supply chain management concentration, minor and certificate program
- Developed transportation and logistics management, quality management, supply chain management, and inventory management courses.
- Involved in scholarship committee (2013-2014, 2014-2015), curriculum committee (2014-2015), Academic Technology committee (2014-2015), Accounting/Finance search committee (2014-2015), Honor task program (2015-2016), Administrative hearing committee (2015-2016), and strategic enrollment management committee.
- Member, Interfaculty organization (2014-2015)
- Received Faculty improvement grant \$640 (2013-2014) and \$800 (2014-2015)
- Member, Management department core committee (2014-2015)
- Involved in advising management students
- Participating member of Minnesota Collaborative Project pilot study (2014-2015)
- Board member and tutor of literacy volunteer of southwest Minnesota (2014-2015)
- Student support services tutor, Veterans upward bound instructor, North Dakota State University (2012-2013)
- Served as session chair for Green Supply chain management session at INFORMS, 2015

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#### **PROFESSIONAL WORK EXPERIENCE**

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##### ***Supply Chain Trainee, Jan 2009 – Aug 2009***

- Implemented oracle applications like Inventory, Purchasing and Order management.
- Identified the nuances of the supply chain for the business processes currently going on in the company and improving them in order to reduce costs.
- Worked on AIM (Application implementation methodology) methodology which includes Business requirement Gathering, Fit/Gap Analysis, System Configuration Setup, User Acceptance Test, User Trainings, and Go – Live.
- Set up automated workflows that substantially reduced the time, simultaneously giving opportunity for a layman to work with ease. This reduced the costs significantly.

##### ***Mechanical Engineer, 2006 –2007***

- Identifying various processes and drawing layouts/charts in order to improve defective processes.
  - Monitored machine utilization time/ idle time and provided detailed bi-monthly reports
  - Maintained and trouble shooted Caterpillar products such as Bull Dozers, Dumpers that include work on six cylinder engines, transmission systems.
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**HONOURS AND AWARDS**

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- Received achievement award of 11050 USD at University of Florida
- Received College Reading and Learning Association (CRLA) tutoring certificate
- Contributing member for UNICEF (2012)

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**PROFESSIONAL MEMBERSHIPS**

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- Member of CSCMP, 2014
- Invited Member of the honor society of Phi Kappa Phi, 2013
- Member of Institute of Industrial Engineers, 2013
- Member of INFORMS, 2013, 2014, 2015
- Body of knowledge member for sustainability development, 2013

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**SKILLS**

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GAMS, AMPL, Rockwell ARENA, Matlab, Minitab, Automode, VB, Vb.Net, Asp.Net, SQL, Html, C, AutoCAD, CNC programming, Visio PLC unit operations, RFID, Machine vision, Barcoding, Microsoft office package.

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