

CURRICULUM VITAE

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**Michelle McGaha Alvarado, PhD**

*Assistant Professor*

University of Florida, Herbert Wertheim College of Engineering  
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**PERSONAL INFORMATION**

**Place of Birth:** Huntsville, Alabama

**Marital Status:** Married, three sons born 2014, 2016, 2017

**CITIZENSHIP:** USA

**EDUCATION**

**Ph.D. Industrial Engineering (IE), 2014**

Texas A&M University (TAMU), College Station, TX

Dissertation Title: "Integrated Simulation and Optimization for Decision-Making Under Uncertainty with Application to Healthcare", Advisor: Dr. Lewis Ntaimo

Certificates: Certificate in Business from Mays Business School

**M.E. Industrial Engineering, 2010**

Texas A&M University, College Station, TX

Advisor: Dr. Georgia-Ann Klutke

**B.S. Industrial Engineering (Summa Cum Laude), 2008**

University of Alabama (UA), Tuscaloosa, AL

Minors: Computer-Based Honors Program, University Honors Program, Mathematics

**PROFESSIONAL POSITIONS**

**Assistant Professor**

Aug. 2017-present

Department of Industrial and Systems Engineering

Co-Founder of the HEALTH-Engine Laboratory

University of Florida, Gainesville, FL

**Visiting Assistant Professor**

Sept. 2015-Aug. 2017

Texas A&M University, College Station, TX

Department of Industrial and Systems Engineering

**Postdoctoral Research Associate**, Supervisor: Dr. Mark Lawley

Dec. 2014-Sept. 2015

Texas A&M University, College Station, TX

Department of Industrial and Systems Engineering

Center for Remote Health Technologies and Systems

## CONTRACTS AND GRANTS

1. Co-PI. "The benefits and harms of lung cancer screening in Florida", Jan 2020-Dec 2023, **National Institutes of Health: National Cancer Institute**, R01 Award, PI: Jiang Bian, \$1,467,264, (Alvarado \$135,957).
2. PI. "Human trafficking demand reduction strategies through network analytics and simulation modeling", Jan 2020 – Oct 2020, **UF Foundation**, Seed Grant, \$10,000 (Alvarado: \$5,000).
3. Co-PI. "Transforming the delivery of educational content for generation Z engineering students", Mar 2020 – Dec 2020, **UF Foundation**, Seed Grant, PI: Katie Basinger, \$10,000 (Alvarado: \$5,000).
4. Co-PI. "Implementation strategies to address social determinants of health and social needs (phase one)", Dec 2019 – June 2020, **UF CTSI**, Seed Grant, PI: Betsy Shenkman, \$72,690.65 (Alvarado: \$16,369).
5. Personnel - Postdoc. "Benchmarking Study of Point of Use (POU) Systems for VA", **Veteran's Affairs Center for Applied Systems Engineering (VA-CASE)**, PI: Mark Lawley (TAMU), July 2017 – Dec 2016, \$60,000.
6. Personnel - Postdoc. "Benchmarking Study of Enterprise Systems for the VA's Enterprise Supply Chain", **Veteran's Affairs Center for Applied Systems Engineering (VA-CASE)**, PI: Mark Lawley (TAMU), Jan 2016 – June 2016, \$60,000.
7. Personnel – Postdoc. "Diabetes Education and Wellness through Faith-Based Organizations in Texas", **PCORI**, Tier I, PI: M. Lawley (TAMU), Co-PI: H. Kum (TAMU Health Science), May 2015- Jan 2016, \$15,000 (Alvarado: \$10,000).
8. Personnel – Postdoc. "Stakeholder-Driven System Definition of a Smart Diabetes Management System", **Area 41 Challenge Grant via TAMU**, PI: M. Lawley (TAMU), 2015-2016, \$50,000.

## RESEARCH INTERESTS

1. **Decision-making under uncertainty by developing methods, and algorithms for healthcare systems engineering**
2. **Methodologies**
  - a. Mean-Risk Stochastic Integer Programming
  - b. Multi-method Simulation (agent-based, discrete-event, systems dynamics)
  - c. Machine Learning
3. **Applications**
  - a. Health Policy Models
    - i. Hospital Readmissions, Lung Cancer Screening, Healthcare Cost Transparency, Health Insurance Decision-Making
  - b. Outpatient and Inpatient Scheduling and Flow
    - i. Appointment scheduling for chemotherapy, skin cancer, counseling
    - ii. Inpatient discharge planning
  - c. Agricultural Labor Trafficking
  - d. Flipped Classroom Methods for Generation Z Engineering Students

## PUBLICATIONS

### Appeared and In Press Refereed Journals

1. Burns, P., **Alvarado, M.** (2020) "Discrete-Event Simulation for Mohs Micrographic Surgery." *Journal of Simulation*, 1-15. DOI: [10.1080/17477778.2020.1750315](https://doi.org/10.1080/17477778.2020.1750315).
2. Magee, E., Karaca, M., Lawrence, A., Escoto, E., and **Alvarado, M.** (2019) "Machine Learning Applied to Walk-In Demand Prediction for University Counseling Center." *University of Florida Journal of Undergraduate Research*, 21(1): 1-11. [PDF](#).
3. Ejaz, I., **Alvarado, M.**, Gautam, N., Gebraeel, N., and Lawley, M. (2019) "Analysis of a queueing system with a single-degrading server." *IEEE Transactions on Automation Science and Engineering*, 16(4), 1750-1762. DOI: [10.1109/TASE.2019.2893870](https://doi.org/10.1109/TASE.2019.2893870).
4. **Alvarado, M.**, Cotton, T. G., Ntaimo, L., Pérez, E., & Carpentier, W. R. (2018). "Modeling and simulation of oncology clinic operations in discrete event system specification." *Simulation*, 94(2), 105-121. DOI: [10.1177/0037549717708246](https://doi.org/10.1177/0037549717708246).
5. **Alvarado, M.M.**, & Ntaimo, L. (2018). "Chemotherapy appointment scheduling under uncertainty using mean-risk stochastic integer programming." *Health care management science*, 21(1), 87-104. DOI: [10.1007/s10729-016-9380-4](https://doi.org/10.1007/s10729-016-9380-4).
6. **Alvarado, M.**, Kum, H. C., Coronado, K. G., Foster, M. J., Ortega, P., & Lawley, M. A. (2017). "Barriers to remote health interventions for type 2 diabetes: a systematic review and proposed classification scheme." *Journal of medical Internet research (Impact Factor: 4.532)*, 19(2). DOI: [10.2196/jmir.6382](https://doi.org/10.2196/jmir.6382). PMID: 28193598.
7. **Alvarado, M.**, Ntaimo, L., Banerjee, B., and Kianfar, K. (2012) "Reducing pediatric medication errors: A survey and taxonomy." *IIE Transactions on Healthcare Systems Engineering*, 2(2): 142-155. DOI: [10.1080/19488300.2012.680799](https://doi.org/10.1080/19488300.2012.680799).

### Submitted To Refereed Journals

1. Khatami, M., **Alvarado, M.**, Kong, N., Parikh, P., and Lawley, M. "Inpatient discharge planning under uncertainty." (2020) Submitted to *IIE Transactions*, under 1<sup>st</sup> review.
2. **Alvarado, M.**, Lahijanian, B., Zhang, Y., and Lawley, M. "Rational Penalty and Incentive Mechanisms for Hospital Readmissions." (2020) Submitted to *IIE Transactions on Healthcare Systems Engineering*, under 1<sup>st</sup> review.
3. Feng, H., **Alvarado, M.**, and Lawley, M. "Sequential Clinical Scheduling with Stochastic Patient Re-entrant: Case of Mohs Micrographic Surgery". (2020) Submitted to *Production and Operations Management*, under 1<sup>st</sup> review.
4. Marcal-Lopes, J., Colon-Morales, C., **Alvarado, M.**, Melo, V.A.C., Batista Paiva, L., Dias, E.M., and Pardalos, P.M. "Optimization Methods for Large-scale Vaccine Supply Chains: A Rapid Review." (2020) Submitted to *Annals of Operations Research*, under 1<sup>st</sup> review.
5. Lahijanian, B., and **Alvarado, M.** "Care Strategies for Reducing Hospital Readmissions using Stochastic Programming." (2020) Submitted to *BMC Health Services*, under 1<sup>st</sup> review.
6. Ejaz, I., **Alvarado, M.**, Gautam, N., Gebraeel, N., and Lawley, M. "Condition-Based Maintenance of Queues with Stochastic Service Times and Degrading Servers." (2020) Submitted to *IEEE Transactions on Automation Science and Engineering*, in 1<sup>st</sup> review.

### Manuscripts In Preparation

1. Ntaimo, L., **Alvarado, M.**, and Lulli, G. "Fenchel disjunctive decomposition for mean-risk stochastic mixed-integer programs." (2020).
2. **Alvarado, M.** and Ntaimo, L. "Integrated simulation and optimization for oncology clinic

operations.” (2020).

3. Souza, D., Korzenowski, A. and **Alvarado, M.** “A Systematic Review of Emergency Departments Lean Applications.” Submitted to *International Journal of Lean Six Sigma*. (2020).
4. Karaca, M., **Alvarado, M.**, Reisi, M., Pardalos, P., Bihorac, A. “Frequent Pattern Mining from Multivariate Time Series Data: A Case Study of AKI.” (2020).

#### Conference Proceedings

1. Feng, H., **Alvarado, M.** “A Simulation Study of Outpatient Surgery Clinic with Patient Re-entrance.” *Proceedings of the 2020 Winter Simulation Conference*, Orlando, FL, December 13-16, 2020, under review.
2. **Alvarado, M.**, Basinger, K., Lahijanian, B., Alvarado, D. “Teaching Simulation to Generation Z Engineering Students: Lessons Learned from Flipped Classroom Pilot Study.” *Proceedings of the 2020 Winter Simulation Conference*, Orlando, FL, December 13-16, 2020, under review.
3. **Alvarado, M.**, Basinger, K., Alvarado, D., Lahijanian, B., Buzard, B., Karaca, M. “Strategies for Flipped Classroom Video Development: Educating Generation Z Engineering Students.” In *Proceedings of the 2020 ASEE Annual Conference*, Virtual Conference, June 21-25, 2020. [[PDF](#)].
4. Lahijanian, B., Basinger, K., Karaca, M., Alvarado, D., Buzard, B., and **Alvarado, M.** “Flipped Classroom Video Engagement for Generation Z Engineering Students.” In *Proceedings of the 2020 IISE Annual Conference and Expo*, New Orleans, LA, Oct. 31-Nov. 3, 2020, accepted. [[PDF](#)]
5. Colon, C., Giang, W., and **Alvarado, M.** “Effectiveness of Health Enrollment Decision Aids”. In *Proceedings of the 2020 IISE Annual Conference and Expo*, New Orleans, LA, Oct. 31-Nov. 3, 2020, accepted. [[PDF](#)]
6. Lahijanian, B., and **Alvarado, M.** “Hospital Readmissions Reduction Program: A Statistical Analysis”. In *Proceedings of the 2019 IISE Annual Conference and Expo*, Orlando, FL, May 18-21, 2019. Pages 1-6. [[PDF](#)].
7. **Alvarado, M.**, Li, Y., and Lawley, M. “Healthcare simulation tutorial: methods, challenges, and opportunities.” In *Proceedings of the Winter Simulation Conference (WSC), 2016* (pp. 236-247). IEEE. [[PDF](#)].
8. **Alvarado, M.**, Zhang, Y., and Lawley, M. “Hospital readmission reduction strategies using a penalty-incentive model.” In *Proceedings of the 2016 IIE Annual Conference and Expo, Anaheim, CA*. May 21-24, 2016. Paper no. 1596: 1-6. [[PDF](#)].
9. Igbino, O., Ly, M., **Alvarado, M.**, Avnet, M., and Lawley, M. “Enablers and barriers to remote health technologies: a stakeholder analysis.” In *Proceedings of the 2016 IIE Annual Conference and Expo, Anaheim, CA*. May 21-24, 2016. Paper no. 1425: 1-6. [[PDF](#)].
10. Ly, M., Igbino, O., **Alvarado, M.**, Avnet, M., and Lawley, M. “Socio-technical challenges to the adoptions of remote technologies in healthcare.” In *Proceedings of the 2016 Conference on Systems Engineering Research, Huntsville, AL*. Mar. 22-24, 2016. Pages 1-9. [[PDF](#)].
11. **Alvarado, M.**, Cotton, T., and Ntamo, L. “A simulation and optimization approach to scheduling chemotherapy appointments.” In *Proceedings of the 2013 Interservice/Industry Training, Simulation, and Education Conference, Orlando, FL*. Dec. 1-5, 2013. Paper no. 13029: 1-11. [[PDF](#)].

## TEACHING EXPERIENCE

### Course Instructor

#### University of Florida

**ESI 4523: Industrial Systems Simulation**, Spring 2020, Students: 67.

Evaluations: 4.2 Enthusiasm, 3.80 Clear Explanation, 4.20 Availability, 4.13 Positive Learning Environment, 3.91 Meaningful Feedback, 3.89 Instrumental to Student Learning

**EIN 4905/6905: Models & Methods for Healthcare Sys. Eng.**, Fall 2019, Students: 7.

Evaluations: 5.0 Enthusiasm, 4.84 Clear Explanation, 4.67 Availability, 5.0 Positive Learning Environment, 4.84 Meaningful Feedback, 5.0 Instrumental to Student Learning

**ESI 4523: Industrial Systems Simulation**, Spring 2019, Students: 54.

Evaluations: 3.44 Communication, 3.90 Availability, 3.63 Facilitation of Learning, 3.33 Enthusiasm, 3.71 Fairness, 3.83 Academic Concern, 3.69 Encouragement

**ESI 4523: Industrial Systems Simulation**, Fall 2018, Students: 36.

Evaluations: 3.48 Communication, 3.94 Availability, 3.39 Facilitation of Learning, 3.88 Enthusiasm, 4.15 Fairness, 3.88 Academic Concern, 3.39 Encouragement

**ESI 6341: Introduction to Stochastic Optimization**, Spring 2018, Students: 21.

Evaluations: 4.17 Communication, 4.65 Availability, 4.25 Facilitation of Learning, 4.50 Enthusiasm, 4.58 Fairness, 4.67 Academic Concern, 4.58 Encouragement

#### Texas A&M University

**ISEN 442: Organizational Systems**, Spring 2017, Students: 72.

Evaluations: 4.49 Communication, 4.29 Availability, 4.47 Fairness, 4.29 Environment, 4.46 Responsiveness, and 4.22 Academic Concern (5 point scale)

**ISEN 405: Facilities Design and Material Handling**, Fall 2016, Students: 56.

Evaluations: 4.66 Communication, 4.61 Availability, 4.58 Fairness, 4.56 Environment, 4.57 Responsiveness, and 4.57 Academic Concern (5 point scale)

**ISEN 411: Engineering Management Techniques**, Spring 2016, Students: 80.

Evaluations: 4.10 Communication, 4.35 Availability, 3.92 Fairness, 4.13 Environment, 4.41 Responsiveness, and 4.43 Academic Concern (5 point scale)

**ISEN 416: Facility Location, Layout, & Material Handling**, Fall 2015, Students: 37.

Evaluations: 4.23 Communication, 4.35 Availability, 4.23 Fairness, 4.23 Environment, 4.39 Responsiveness, and 4.26 Academic Concern (5 point scale)

**ISEN 416: Facility Location, Layout, and Material Handling**, Spring 2013, Students: 43.

Evaluations: 4.25 Communication, 4.19 Availability, 4.31 Fairness, 4.39 Environment, 4.19 Responsiveness, and 4.28 Academic Concern (5 point scale)

#### Other Classroom Experience

##### University of Florida

STEPUP: Intro to Computer Simulation, Co-Instructor, 5 hrs/wk for 6 wks, ~50 students per summer, Summer 2019-present

EIN 4905/6905: Healthcare Systems Engineering, Course Development and Guest Lecturer in Fall 2018

##### Texas A&M University

Stochastic Programming Workshop, Organizer, Summer 2016, 6 hrs/wk for 4 wks, 8 graduate students

Simulation Methods Workshop, Organizer & Lecturer, Summer 2015, 6 hrs/wk for 10 wks,  
15 graduate students  
Markov Decision Process Workshop, Organizer & Lecturer, Summer 2015, 6 hrs/wk for  
10 wks, 8 graduate students  
ISEN 416: Facility Location, Layout, and Material Handling Systems, Lab Instructor,  
Spring 2011, Fall 2011, Spring 2012, Fall 2012  
ISEN 420: Operations Research I, Teaching Assistant, Summer 2011  
ISEN 609: Probability for Engineering Decisions, Guest Lecturer, Spring 2011  
ISEN 620: Survey of Optimization, Teaching Assistant and Guest Lecturer, Fall 2010  
INFORMS Student Chapter Meeting, MATLAB, Mar. 2010  
GES 131: Foundations of Engineering, Mentor, Fall 2007

## **Mentoring Experience**

### **University of Florida**

ISE Ph.D. Students

Advisor

Behshad Lahijanani, expected graduation: 2021

Meserret Karaca, expected graduation: 2022 (co-advised with Panos Pardalos)

Coralys Colon Morales, expected graduation: 2023

PhD Committee

Kezhou Zhou, Aditya Prakash

Visiting Scholar

Juliano Marcal Lopes (University of Sao Paulo)

ISE Honors Thesis

Summer 2020: Madeline Schmidt (Accenture)

Summer 2019: Erin Magee (EPIC)

Fall 2018: Sydney Shivers (United Launch Alliance)

Spring 2018: Patrick Burns (Northrop Grumman)

ISE University Scholars Program

2020-2021: Alexandra Orlovic

2018-2019: Erin Magee (EPIC)

ISE Undergraduate Researchers in HEALTH-Engine Lab

Mason King, Lauren Moore, Alexa Carrie, David Keller

ISE SURF Program

Summer 2019: Chris Pufko (Senior at UVA)

Summer 2018: Arlen Dean (PhD student at U-Michigan)

ISE Senior Design Team

Spring 2020: (1) UF Psychology Counselor Wait-List

Fall 2019: (1) UF-Shands Core Lab \*\* Team Won Best Poster Award

Spring 2019: (1) Bouncers

Fall 2018: (1) UF Emergency Department

Spring 2018: (1) UF Surgical Department

OEM Program Master's Project Advising

Spring 2020: (1) System Integration Data Analysis, (2) Warehouse Opt. Project

Simulation Competitions

2020: IISE/Arena Competition – Advisor to 2<sup>nd</sup> place team

### **Texas A&M University**

ISEN TAMU Ph.D. Program, Spring 2015-Summer 2017

Advised and guided 7 Ph.D. students under the supervision of Dr. Mark Lawley

ISEN 459: Senior Design Team Advisor, Spring 2017

Team 1: Cheap Caribbean Process Flow Mapping Project

Team 2: SAMMC Warehouse Receiving Project

Team 3: Halliburton Warehouse Stocking Strategy Project

ISEN 459: Senior Design Team Advisor, Fall 2016

Team 1: MD Anderson Cancer Center Scheduling Project

Team 2: SAMMC Inpatient Discharge Planning Project

Team 3: Veterans Health Administration POU Benchmarking Project, Won 2<sup>nd</sup>

Place of 25 teams

ISEN 459: Senior Design Team Advisor, Spring 2016

Team 1: TAMU Writing Center Scheduling Project, Won 1<sup>st</sup> Place of 25 teams.

Team 2: Veterans Health Administration ERP System Benchmarking Project

### **HONORS AND AWARDS**

#### **National Level**

2017 1<sup>st</sup> Place for the INFORMS Minority Issues Forum Paper Competition

2014 Judith Liebman Award by INFORMS

2012 RADM Fred Lewis (I/ITSEC) Doctoral Scholarship

2010 IIE's Gilbreth Memorial Scholarship

2009 IIE's John S.W. Fargher Scholarship

2008 NSF Graduate Research Fellowship Program Honorable Mention

2008 IIE Student Award for Excellence (#1 undergraduate IE)

2008-2011 Graduate Assist. in Areas of National Need (GAANN) Fellow

2008 USA TODAY All Academic Team – 2nd Team (Top 40 College)

2007 USA TODAY All Academic Team – 2nd Team (Top 40 College)

2007 Alpha Pi Mu National Award of Excellence (1of 8 selected)

2006-2008 NOAA/Hollings Scholar (Top 100 Sophomores)

#### **University Level**

2019 Diversity Champion, Honorable Mention (UF)

2008 Catherine J. Randall Award (The Most Outstanding Student at UA)

2008 Alumni Student Award (The Most Outstanding Female Senior at UA)

2007 Randall Outstanding Undergraduate Research Award Recipient (UA)

2007 Computer Based Honors Most Outstanding Junior (UA)

2006 Randall Outstanding Undergraduate Research Award Recipient (UA)

2006 Computer Based Honors Most Outstanding Sophomore (UA)

2005 Computer Based Honors Most Outstanding Freshman (UA)

#### **College Level**

2008 Capstone Engineering Society Most Outstanding Senior Award (UA)

2008 Tau Beta Pi Engineering Honor Society Outstanding Senior (UA)

2007 Tau Beta Pi Engineering Honor Society Outstanding Junior (UA)

2006 Tau Beta Pi Engineering Honor Society Outstanding Sophomore (UA)

**Department Level**

- 2017 Faculty Capstone Award (TAMU)
- 2014 INFORMS Former Officer Appreciation Award (TAMU)
- 2013 INFORMS Student Presentation Competition Top 3 (TAMU)
- 2012 INFORMS Student Presentation Competition Top 3 (TAMU)
- 2008 IE Outstanding Senior (UA)
- 2007 IE Outstanding Junior (UA)
- 2007 Wyllys G. Stanton Professional Leadership Award from IE Department (UA)

**PROFESSIONAL SOCIETIES**

- INFORMS (Fall 2008 – present)
  - Minority Issues Forum (2012-present)
    - MIF Secretary, 2020
    - MIF Paper Competition Chair 2020
  - Health Applications Society (2012-present)
  - Women in ORMS Forum (2012-present)
  - Optimization Society (2019-present)
  - Simulation Society (2019-present)
  - Junior Faculty Interest Group (2019-present)
  - 2020 Nicholson Prize Committee
  - 2019 HEALTHCARE Meeting Session Organizer and Chair
  - 2015-present Annual Meeting Session Organizer and Chair
  - 2014 Annual Meeting Session Chair
  - 2013 President (TAMU)
  - 2012 President-Elect (TAMU)
  - 2011 Volunteer (TAMU)
- Institute of Industrial Engineers (Fall 2004 - present)
  - 2019-present Society of Health Systems Faculty Advisor (UF)
  - 2018-present Annual Meeting Session Organizer and Chair
  - 2009-2013 Graduate Student Liaison (TAMU)
  - 2006-2008 President (UA)
- American Society for Engineering Education (2018-present)
- Society of Women Engineers (Fall 2004 - 2009)
  - 2005-2007 Regional Conference Local Arrangements Chair (UA)
- UF Cancer Center Member (2017-present)
  - Cancer Population Science Member (2017-present)

**JOURNAL ACTIVITIES, REFEREE**

- European Journal of Operational Research (EJOR)
- Flexible Services and Manufacturing Journal
- Healthcare Management Science (HCMS)
- Healthcare Systems Process Improvement (HSPI) Conference
- International Journal of Management Science (IJMS)
- International Journal of Production Research (IJPR)
- Institute of Industrial & Systems Engineers (IISE) Transactions



IISE Transactions on Healthcare Systems Engineering  
Industrial and System Engineering Research Conference (ISERC)  
Journal of Simulation  
Omega  
Operations Research for Health Care  
Simulation: Transactions of the Society for Modeling and Simulation International  
Winter Simulation Conference (WSC)

## TRAINING AND WORKSHOPS

2018 First Year Faculty Teaching Academy (FYFTA), Gainesville, FL  
2018 IISE New Faculty Colloquium, Orlando, FL  
2018 NSF CMMI Career Workshop, Charlotte, NC  
2016 DOD Grant Training Workshop, Houston, TX  
2015 NIH and NSF Grant Training Workshop, College Station, TX  
2015 NSF CAREER Workshop. College Station, TX  
2015 Diabetes Self-Management, Jul.-Aug. 2015. College Station, TX  
2015 AnyLogic Simulation Training, Chicago, IL  
2012 Future Academician Colloquium, *INFORMS Annual Meeting*, Phoenix, AZ  
2011 Graduate Teaching Academy, TAMU

## PRESENTATIONS

1. **Alvarado, M.**, Feng, H., and Lawley, M. "Appointment Scheduling for Skin Cancer Surgeries with Patient Re-entrance." *INFORMS Annual Meeting*, Seattle, WA. October 20-23, 2019.
2. Ezzat, A., **Alvarado, M.**, Fang, X., Van Aken, E., Shafae, M. "Panel: Academic Job Application and Interview Process." *INFORMS Annual Meeting*, Seattle, WA. October 20-23, 2019.
3. Karaca, M., **Alvarado, M.**, and Pardalos, P. "Frequent Pattern Mining from Multivariate Time Series Data." *INFORMS Annual Meeting*, Seattle, WA. October 20-23, 2019.
4. Lahijanjan, B., and **Alvarado, M.** "Chance-constrained Stochastic Programming for Reducing Hospital Readmissions." *INFORMS Annual Meeting*, Seattle, WA. October 20-23, 2019.
5. Lahijanjan, B., and **Alvarado, M.** "Chance-constrained Stochastic Programming for Reducing Hospital Readmission." *INFORMS Healthcare*, Cambridge, MA. July 27-29, 2019.
6. Colon-Morales, C., **Alvarado, M.**, and Feng, H. "Appointment Scheduling for Skin Cancer Surgeries with Patient Re-entrance." *INFORMS Healthcare*, Cambridge, MA. July 27-29, 2019.
7. Karaca, M., **Alvarado, M.**, and Pardalos, P. "Frequent Temporal Pattern Mining from Multivariate Time Series Data." *INFORMS Healthcare*, Cambridge, MA. July 27-29, 2019.
8. Magee, E., Karaca, M., Escoto, E., Lawrence, A., and **Alvarado, M.** "Machine Learning Applied to Walk-in Demand Prediction of University Counseling Center." *INFORMS Healthcare*, Cambridge, MA. July 27-29, 2019.

9. Marcal-Lopes, J., Melo, V.A.Z.C., Dias, E.M., and **Alvarado, M.** "Rapid Review: Application of Optimization in Supply Chain of Vaccines". *INFORMS Healthcare*, Cambridge, MA. July 27-29, 2019.
10. Lahijanian, B., and **Alvarado, M.** "Statistical Analysis of Penalty vs. Incentive Designs for Hospital Readmission." *IISE Annual Conference and Expo*, Orlando, FL. May 18-21, 2019.
11. Colon-Morales, C., **Alvarado, M.**, and Feng, H. "Appointment Scheduling for Skin Cancer Surgeries with Patient Re-entrance." *IISE Annual Conference and Expo*, Orlando, FL. May 18-21, 2019.
12. Karaca, M., **Alvarado, M.**, and Pardalos, P. "Frequent Temporal Pattern Mining from Multivariate Time Series Data." *IISE Annual Conference and Expo*, Orlando, FL. May 18-21, 2019.
13. **Alvarado, M.**, Khatami, M., Kong, N., Parikh, P., and Lawley, M. "Stochastic Models for Inpatient Discharge Planning." *INFORMS Annual Meeting*, Phoenix, AZ. Nov. 3-7, 2018.
14. Ejaz, I. , **Alvarado, M.**, Gautam, N., Gebraeel, N., and Lawley, M. "Condition-based Maintenance of Queues with Degrading Servers for Stochastic Service Times." *INFORMS Annual Meeting*, Phoenix, AZ. Nov. 3-7, 2018.
15. Feng, H., **Alvarado, M.**, and Lawley, M. "Clinic Scheduling with Patient Re-entrant." *INFORMS Annual Meeting*, Phoenix, AZ. Nov. 3-7, 2018.
16. Lahijanian, B., **Alvarado, M.** "Hospital Readmission Reduction Strategy using Stochastic Programming." *INFORMS Annual Meeting*, Phoenix, AZ. Nov. 3-7, 2018.
17. **Alvarado, M.**, Lahijanian, B. "Hospital Readmission Reduction Strategy using Stochastic Programming." *Workshop on Risk Management Approaches in Engineering Applications*, Gainesville, FL. October 1-2, 2018.
18. Lahijanian, B., **Alvarado, M.** "A Stochastic Programming Approach to Reduce Hospital Readmission using a Penalty-Incentive Mechanism." *IISE Annual Conference and Expo*, Orlando, FL. May 19-22, 2018.
19. **Alvarado, M.**, Foster, M., Gonzalez, P., Ortega, P., Kum, H., and Lawley, M. "Barriers to remote health interventions for type 2 diabetes: a systematic review and proposed classification scheme." *Healthcare Systems Process Improvement Conference*, Atlanta, GA. Feb. 21-23, 2018.
20. **Alvarado, M.**, and Lawley, M. "A multi-method simulation model of hospital readmission reduction strategies." *IISE Annual Conference and Expo*, Pittsburgh, PA. May 19-22, 2017.
21. Khatami, M., **Alvarado, M.**, Lawley, M., Kong, N., and Parikh, P. "Optimal inpatient discharge planning under uncertainty." *IISE Annual Conference and Expo*, Pittsburgh, PA. May 19-22, 2017.
22. **Alvarado, M.**, Li, Y., and Lawley, M. "Healthcare simulation tutorial: methods, challenges, and opportunities." *Winter Simulation Conference 2016*, Arlington, VA. December 12-14, 2016.
23. **Alvarado, M.**, and Lawley, M. "A multi-method simulation model of hospital readmission reduction strategies." *INFORMS Annual Meeting*, Nashville, TN. Nov. 13-16, 2016.
24. **Alvarado, M.**, Zhang, Y., and Lawley, M. "Hospital readmission reduction strategies using a penalty-incentive model." *IISE Annual Conference and Expo*, Anaheim, CA. May 21-24, 2016.

25. Igbinoba, O., Ly, M., **Alvarado, M.**, Avnet, M., and Lawley, M. "Enablers and barriers to remote health technologies: a stakeholder analysis." *IISE Annual Conference and Expo, Anaheim, CA.* May 21-24, 2016.
26. Khatami, M., **Alvarado, M.**, Kong, N., Parikh, P., and Lawley, M. "Optimal inpatient discharge planning under uncertainty." *IISE Annual Conference and Expo, Anaheim, CA.* May 21-24, 2016.
27. **Alvarado, M.**, Avnet, M., and Lawley, M. "The Texas A&M Vision for Remote Healthcare Technologies." *IISE Annual Conference and Expo, Anaheim, CA.* May 21-24, 2016.
28. Hammett, J., **Alvarado, M.**, Avnet, M., and Lawley, M. "A framework for customized patient-centric remote monitoring systems." *IIE Annual Conference and Expo, Anaheim, CA.* May 21-24, 2016.
29. Ly, M., Igbinoba, O., **Alvarado, M.**, Avnet, M., and Lawley, M. "Socio-technical challenges to the adoption of remote technologies in healthcare." *Conference on Systems Engineering Research, Huntsville, AL.* Mar. 22-24, 2016.
30. **Alvarado, M.**, Li, Y., and Lawley, M. "A discrete event simulation model for outpatient appointment scheduling." *Anylogic 2015.* Philadelphia, PA. Nov. 5, 2015.
31. **Alvarado, M.**, Zhang, Y., and Lawley, M. "Readmission reduction strategies in Medicaid (Medicare)-hospital system." *INFORMS Annual Meeting, Philadelphia, PA.* Nov. 1-4, 2015.
32. **Alvarado, M.**, Lawley, M., Kum, H., and Gonzalez, K. "Diabetes education and wellness through faith-based organizations in Texas." *Diabetes Health and Wellness Institute, Dalloras, TX.* Aug. 6, 2015.
33. **Alvarado, M.** and Ntaimo, L. "Mean-risk stochastic integer programming model for chemotherapy appointment scheduling." *INFORMS Healthcare Annual Meeting, Nashville, TN.* Jul. 29-31, 2015.
34. **Alvarado, M.**, Lawley, M., and Gonzalez, K. "Diabetes resource access." *Rural and Community Health Institute at Texas A&M University's Health Science Center, College Station, TX.* Jul. 10, 2015.
35. **Alvarado, M.** and Ntaimo, L. "Integrated simulation and optimization for scheduling chemotherapy appointments under uncertainty." *INFORMS Annual Meeting, San Francisco, CA.* Nov. 9-12, 2014.
36. **Alvarado, M.**, Cotton, T., and Ntaimo, L. "A simulation and optimization approach to scheduling chemotherapy appointments." *Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC 2013), Orlando, FL.* Dec. 1-5, 2013.
37. **Alvarado, M.**, Cotton, T., and Ntaimo, L. "A simulation-optimization approach for scheduling outpatient chemotherapy appointments." *INFORMS Annual Meeting, Minneapolis, MN.* Oct. 3-6, 2013.
38. **Alvarado, M.** and Ntaimo, L. "A simulation-optimization approach for wildfire extended attack response planning." *INFORMS Annual Meeting, Minneapolis, MN.* Oct. 3-6, 2013.
39. **Alvarado, M.** and Ntaimo, L. "A simulation and optimization approach for scheduling chemotherapy appointments under uncertainty." *Minority Issues Forum Student Poster Competition at INFORMS Annual Meeting, Minneapolis, MN.* Oct. 3-6, 2013.
40. **Alvarado, M.**, Cotton, T., Perez, E., and Ntaimo, L. "Simulation and optimization approach to chemotherapy scheduling under uncertainty." *INFORMS Healthcare, Chicago, IL.* Jun. 24-26, 2013.

41. **Alvarado, M.** and Ntaimo, L. "A simulation and optimization approach for large-scale wildfire extended attack response planning under uncertainty." *International Stochastic Programming Conference*, Bergamo, Italy. Jul. 6-12, 2013.
42. **Alvarado, M.**, Cotton, T., Perez, E., and Ntaimo, L. "Simulation and optimization approach to chemotherapy scheduling under uncertainty." *INFORMS Healthcare*, Chicago, IL. Jun. 24-26, 2013.
43. **Alvarado, M.**, Ntaimo, L., and Lulli, G. "Fenchel disjunctive decomposition for mean-risk stochastic integer programs." *INFORMS Computing Society Conference*, Jan. 6-8, 2013.
44. **Alvarado, M.**, Cotton, T., Perez, E., and Ntaimo, L. "Modeling and simulation of an oncology clinic using DEVS." *INFORMS Annual Meeting*, Phoenix, AZ. Oct. 24-17, 2012.
45. **Alvarado, M.**, Ntaimo, L., and Lulli, G. "Fenchel disjunctive decomposition for mean-risk stochastic integer programs." *INFORMS Annual Meeting*, Phoenix, AZ. Oct. 24-17, 2012.
46. **Alvarado, M.** and Ntaimo, L. "A simulation-optimization approach for large-scale wildfire extended attack response planning." *INFORMS Annual Meeting*, Phoenix, AZ. Oct. 24-17, 2012.
47. **Alvarado, M.** and Ntaimo, L. "A simulation-optimization approach for large-scale wildfire response planning." *Minority Issues Forum Student Poster Competition at INFORMS Annual Meeting*, Phoenix, AZ. Oct. 24-17, 2012.
48. **Alvarado, M.** and Ntaimo, L. "A stochastic programming extended attack response model for large-scale wildfires." *IIE Annual Conference and Expo*, Orlando, FL. May 19-23, 2012.
49. **McGaha, M.**, Cotton, T., Perez-Roman, E., and Ntaimo, L. "A stochastic integer programming approach to chemotherapy scheduling." *INFORMS Annual Meeting*, Charlotte, NC. Nov. 13-16, 2011.
50. **McGaha, M.** and Ntaimo, L. "A stochastic programming extended attack response model for large-scale wildfires." *INFORMS Annual Meeting*, Charlotte, NC. Nov. 13-16, 2011.
51. **McGaha, M.**, Ntaimo, L., Banerjee, B., and Kianfar, K. "Reducing medication errors in pediatrics." *INFORMS Annual Meeting*, Austin, TX. Nov. 7-10, 2010.
52. **McGaha, M.**, Ntaimo, L., Banerjee, B., and Kianfar, K. "Reducing medication errors in pediatrics." *Center for Health Organization Transformation Semi-Annual Meeting*, Houston, TX. Feb. 26-27, 2010.
53. **McGaha, M.** "A computer-based system for road safety assessment." *IIE Southeastern Region Technical Student Paper Competition*, Starkville, MS. Mar. 1, 2008.
54. **McGaha, M.** and Jackson, R. "Technical assistance on coastal hazards related products and services in the pacific islands and Indian ocean regions." *NOAA Hollings Scholar Internship Presentations*, Silver Springs, MD. Jul. 30, 2007.
55. Fonseca, D.J., and **McGaha, M.** "A computer-based system for road safety assessment." *Annual Industry Engineering and Management Systems Conference (IEMS)*, Cocoa Beach, FL. Mar. 12-14, 2007.
56. Fonseca, D.J., and **McGaha, M.** "A computer-based system for road safety assessment." *University Transportation Center of Alabama (UTCA) Research Symposium Poster Presentation*, Tuscaloosa, AL. Nov. 13, 2006.

#### GRADUATE COURSES (TAKEN)

Optimization

Stochastic Processes

Linear Programming  
Non-linear and Dynamic Programming  
Integer Programming  
Engineering Optimization  
Large-scale Stochastic Optimization  
Spatial Optimization  
Polyhedral Theory  
Principles of Scheduling  
Analysis of Algorithms

**Other**

Location and Logistics of Industrial Facilities  
Object-Oriented Programming and Software Eng.  
Production and Inventory Control

Applied Random Processes  
Applied Distrib. & Queueing Theory  
Stochastic Processes

**Math/Statistics**

Distribution Theory  
Theory of Inference  
Principles of Analysis I, II

**Business Certificate**

Accounting I  
Survey of Management  
Survey of Marketing  
Financial Management