

OKLAHOMA STATE UNIVERSITY

SCHOOL OF INDUSTRIAL ENGINEERING AND MANAGEMENT

College of
Engineering, Architecture and Technology

COWBOY CONNECTIONS

SPRING 2021



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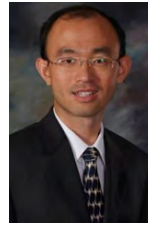
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Dr. Sunderesh S. Heragu
School Head
Regents Professor and
Humphreys Chair



Dr. Farzad Yousefian
Undergraduate
Program Director
Assistant Professor



Dr. Tieming Liu
Graduate Program
Director
Associate Professor

Hello,

Spring is in the air! There are numerous changes taking place in the campus and they are all exciting!

First, it is nice to see that more than 50% of the adult US population has received at least one dose of the COVID-19 vaccine. I am told that when 70% or more of our population is fully vaccinated, we will be able to resume our lives (being with family, traveling, coming to Stillwater for home games, etc.) and come back to a level of normalcy close to one that existed in February 2020. This requires each citizen to do their part. For its part, OSU has been delivering vaccines to community members, faculty, staff, and students since January. As of April 13th, 16,507 doses have been given – 4,738 to employees (faculty and staff), 8,078 to students, and 3,691 to community members.

Unlike many other universities, OSU classes were offered in-person (in addition to synchronous and asynchronous formats) in Fall 2020 and Spring 2021. Our commencement is also in-person and in Fall 2021, we hope to return to classroom settings similar to that prior to the pandemic.

Dr. Kayse Shrum has been appointed as the next (and first female) President of OSU! She will assume her official duties on July 1st. President Burns Hargis and First Cowgirl Ann Hargis will be retiring after 13 years of yeoman service to OSU and Cowboys around the world. Provost Gary Sandefur retired on March 31st and Dr. Jeanette Mendez serves as the Interim Provost.

Hearty congratulations to Cathey Humphreys for being selected as the Women for OSU Philanthropist for 2021. Along with Don Humphreys, she has endowed the Chair I currently occupy. The Humphreys were one of the first to endow a chair in IEM and I am proud to be its first occupant.

There is much to celebrate as we approach our 100th anniversary. IEM once again climbed in its rankings to #22, among public graduate engineering programs in industrial/manufacturing/systems. Our scholarship endowment is almost \$900,000 representing a steep climb in just the past five years. There is more to climb however, to scale the summit which is at a peak of \$4 million.

The Cowboy Academy of Industrial Engineering and Management (TCA) has been hard at work, under the able leadership of Mitch Myers. Four subcommittees are making great progress. See Mitch's report on page 26. In the past several months, TCA and IAB members have been investing more than 100 hours each week (collectively) to advance IEM. I cannot thank them enough for all they do to help IEM students, faculty, and the program overall.

An enjoyable part of my job is connecting with alumni. It is heartening to hear

them talk about how they have benefitted from an OSU/IEM education and their desire to reconnect and give back to their alma mater. You will see the stories of very successful alumni in the Alumni Spotlight (page 10) and "Where are they now?" section (page 14). Dan Rao took simulation classes from Dr. Joe Mize and recalls the wonderful experience he gained here at OSU. Jeff Greer, his wife Lynette, and children (Evan and Emily) are all proud IEM graduates. Umar Al-Turki was an MS student here and a PhD student at Rensselaer Polytechnic Institute, where I served on his doctoral dissertation committee – small world!

The Industrial Advisory Board (IAB) has also been hard at work helping us with our upcoming ABET accreditation review in the Fall. IEM has been successfully accredited and reaccredited since 1937 when we were first accredited by the Engineers Council for Professional Development, a precursor to ABET. TCA and IAB are also closely aligned to ensure they have complementary, but nonoverlapping functions.

Our students continue to win numerous awards (see page 18) as do our faculty (see page 22). Dr. Buchanan's research, supported by an NSF CAREER award titled "Parsimonious Models for Redistricting", builds new models and algorithms to develop mathematically sound and transparent political redistricting plans that create a specified number of contiguous districts, each within a specified population range, in a compact manner while preserving subdivisions and communities of interest. Other state-specific or local constraints are also considered. My own work on designing, planning, and implementing a drive-through, mass vaccination clinic has been quoted in national and international media. These are two of many examples that illustrate how research, driven by IEM faculty and students, is impacting the larger society around us.

We are sorry to see Mya Jackson, the friendly front-desk student worker leave us after four years of dedicated service to the IEM family and its visitors.

Our seminar series has been in full swing thanks to Dr. Joseph Nuamah, with all the seminars conducted virtually. The speakers are from universities in Canada and the US.

I am proud of our faculty research productivity. Just since 2018, our faculty have published in excess of 70 papers, averaging more than 5 per faculty in that time frame. Not only are the numbers high, but the quality of publications as evidenced by the articles themselves and the journals in which they are published, is also high. This is a matter of pride for the entire IEM family.

Our students have persevered through the pandemic and I want to give a big shout out to them for all they have endured in the past twelve months

and yet, kept on moving forward. Commencement is always a a bitter-sweet time as we bid farewell to our graduating students, who will enter the ranks of alumni. More than 30 undergraduate and graduate students will be receiving their diplomas in the T. Boone Pickens stadium with their families (in a socially distanced setting). President Hargis will deliver the commencement address at all seven commencements!

We are grateful to have had the opportunity to impart sound education in academic as well as nonacademic areas and it is indeed difficult to see our students leave us. However, we do recognize they have a full and productive life ahead of them and thus it is a time of celebration as we cheer our graduates feeling confident each is prepared to make a difference in the world.

Go Pokes!

Sunderesh S. Heragu

School Head, Regents Professor, and Humphreys Chair

IEM Mission, Vision, and Goals

Vision

To inspire and empower our students to become leaders in a wide variety of industries, improve the quality of life for humankind, and change the world for the better, by making societal systems diverse, effective, efficient, and sustainable.

Mission

Continuously and aggressively advance educational and research processes which will attract students who fulfill our vision.

Educational Goal

Continue to improve, monitor, and enhance the student recruitment, learning, graduation, and placement processes to produce leaders proficient in theoretical, applied, and technology relevant concepts and practices that have a global reach and global impact.

Research Goal

Engage in cutting edge research of global importance to produce innovators and next generation engineering, education, and societal leaders.

Outreach Goal

Actively engage in community projects, economic development and service for the greater good. Enhance IEM's image internally within CEAT and OSU, and externally - the world at large.

Diversity Goal

Ensure that all school activities promote a diverse, achievement driven and gifted student experience. Administer programs to recognize the diverse challenges of each identity group and improve the retention rate from admission to graduation.

The Next Five Generations

IEM has been fortunate to have had the resources and the support that have made it possible to recruit, train, and produce leaders in our society. To benefit the next five generations, we launched a \$20 million by 2020 campaign in December 2014 and have made good progress toward that goal. From \$2.4 million in Fall 2013, our endowments (including deferred gifts) have risen to \$8 million. The remaining \$12 million must be raised in the next few years. The School of Industrial Engineering and Management looks to alumni and friends, like you, who make the next steps in our innovative future possible. We appreciate every donation, big or small, that supports our school. However, we have listed below several priorities for you to make the most impact.

Study Abroad Scholarship | \$2,000 per student
Scholarships can be awarded to up to 12 students

Annual contribution to two IEM billboards | \$15,000 per year

Sponsorship of IEM networking events | \$25,000

Annual sponsorship of student travel | \$40,000
IISE conferences, INFORMS conferences, commencement lunches, IAB-student luncheons and IEM reception at annual IISE meeting

Annual sponsorship of the weekly seminar series with a naming opportunity | \$75,000

Endowing a professorship | \$500,000

Endowing a chaired professorship | \$1,000,000

Naming and endowing opportunity of IEM | \$8,500,000

If you wish to donate, please send a check payable to the "Industrial Engineering and Management Excellence Fund" at Oklahoma State University, 354 Engineering North, Stillwater, OK 74078 or make a gift online by clicking the GIVE button at ceat.okstate.edu/iem.

For more information please contact
Bryce Killingsworth – Associate Development Director

Office: 405-385-5623

Cell: 405-385-3497

Email: bkillingsworth@osugiving.com

Student Spotlight



Miranda Almen
Undergraduate Student

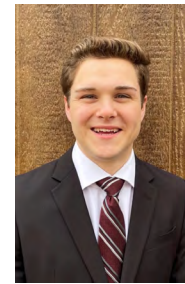
Miranda is a senior IEM student from Edmond, Oklahoma. Growing up in an OU household, she says that OSU has been a sweet blessing. Miranda's minor is in Emergency Management, which has been a fun and niche interest that applies IEM concepts. Throughout her four years at OSU, Miranda has been involved with Our Daily Bread Food & Resource Center, where, in addition to volunteering, she has continued her Girl Scout Gold Project from high school.

Her project collects and distributes children's books for Our Daily Bread's clients. So far, her project has brought over 2,500 books to Stillwater, including a new Little Free Library in their outdoor gardens.

Her education in IEM also helped her build and lead Worthy Women's Conference, a student-led conference aimed to unite women across OSU's campus under the common banner of Christ. Miranda led logistics efforts for the conference in 2019 and served as the conference director in 2020. She also leads a KLIFE discipleship group, mentoring high school freshmen weekly.

"Although the world is full of suffering, it is also full of overcoming it." –Helen Keller

Student Spotlight

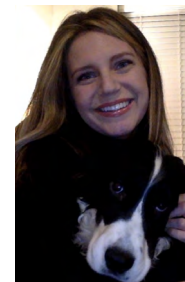


Brandon McKisick
Undergraduate Student

Brandon is a fourth-year student graduating this semester with a degree in Industrial Engineering and Management. He grew up in Catoosa, OK with two younger sisters. Deviating from his family's University of Oklahoma legacy, he chose to attend Oklahoma State University to follow his industrial engineering passion. This passion continued to grow as he became more involved. He now serves proudly as the IISE Student Chapter President during his final year.

During his college career, he was blessed with two internship opportunities in the aviation and transportation industries. After graduation, he will be moving to northwest Arkansas with his new wife to pursue a career with J.B. Hunt as a logistics engineer. Outside of the classroom, he enjoys spending time with friends and family, doing puzzles, collecting LEGO, and playing basketball.

"Whatever you do, work heartily, as for the Lord and not for men." –Colossians 3:23



Andrea Kacynski
MS ETM Student

Andrea is a student in the Engineering and Technology Management master's program. She grew up in Superior, Colorado and earned her undergraduate degree in Marketing from Pepperdine University. She currently works as a Subcontract Manager at Lockheed Martin on the Orion Program. They are building a spacecraft that will go to Mars and eventually take humans there! Her role on the program is to work with their suppliers to negotiate pricing and manage supplier performance. In her spare time she enjoys cooking, fashion, travel, skiing in the Utah and Colorado mountains, and spending time with her family and friends, and her springer spaniel, Sophie.

"I've missed more than 9000 shots in my career. I've lost almost 300 games. 26 times, I've been trusted to take the game-winning shot and missed. I've failed over and over again in my life. And that is why I succeed." –Michael Jordan

Student Spotlight



Elizabeth Bunting
Master's Student

Elizabeth is from Stillwater, Oklahoma, and attended OSU for her undergraduate degree in Industrial Engineering and Management. After she graduated in Spring 2020, she returned to OSU to pursue a master's degree in Industrial Engineering, with a focus in supply chain and logistics. As a graduate student, Elizabeth has had the amazing opportunity to be a Teaching Assistant. She is grateful for this chance to invest in others and share her love of IEM through this position.

During her time at college, Elizabeth has been involved in a variety of activities and organizations, including IISE, Alpha Pi Mu, Tau Beta Pi, band, and the OSU Navigators. She has served on the OSU Navigators leadership team, led Bible studies, and mentored others. Elizabeth also enjoys reading, music, board games, and spending time with friends and family.

This May, Elizabeth is planning to start a position as a Logistics Engineer with ArcBest, a transportation and logistics company. She plans to finish her master's degree online in summer 2021. Elizabeth is excited to continue working hard, growing, and looking for opportunities to make a difference in the lives of others.

"No half-heartedness and no worldly fear must turn us aside from following the light unflinchingly." –J.R.R. Tolkien

Student Spotlight



Mohammad Naderi
Doctoral Student

Mohammad Javad Naderi is a Ph.D candidate in Industrial Engineering and Management. He is also an Operations Research intern at Norfolk Southern Corporation. He was born in Kashan, a city in Iran with 7000 years of history of civilization. His favorite quote, (below), has inspired him throughout his life. This quote emphasizes the importance of being mentored by great people, which is the reason he came to the USA.

Love for problem solving has always been a driving force for Mohammad, and because of this characteristic, he was chosen by the Iran National Organization for Development of Exceptional Talents to pursue his middle school and high school education in this organization. He has also been a member of Iran Elites Foundation Scholars since 2016. Mohammad received both his bachelor's and master's degrees in Industrial Engineering at Iran University of Science and Technology, the fourth top engineering university in Iran.

He has written several journal articles and a book chapter in the field of optimization. He is a motivated Decision Scientist bringing cutting-edge optimization and data science methods to business problems. Mohammad was the president of INFORMS student chapter at OSU in 2019. He has also been actively involved in the IRSA, which is the Iranian association in OSU. In his free time, he enjoys watching movies and soccer matches.

"If I have seen further than others, it is by standing upon the shoulders of giants." –Isaac Newton

Alumni Spotlight



Dan Rao

Tell us a little bit about yourself.

Currently I serve as a business advisor, mentor to entrepreneurs, and lecture on leadership and management.

How has your IEM degree helped you?

In a lot of ways. I started my career as an Industrial Engineer where all those courses in Work Simplification and Incentive Systems came in handy. As I moved up the career ladder to Distribution Operations, Logistics, Marketing, and Management, other courses like Statistics, Engineering Economy, Operations Research, and Management came into play.

What aspects of your OSU affiliation while you were a student stand out?

I was lucky to have excellent professors like Dr. Mize, Dr. Stevens, and Dr. Ferguson.

What has motivated you to stay engaged with OSU, years after graduation?

Life is about working hard and being grateful to people and organizations that have helped one become successful. I am most thankful to my parents, my high school and its teachers and IEM. I try to do my best to stay in touch with those that made me who I am today.

What do you think the future holds for the IEM student?

An IEM education is a wonderful mix of engineering and management; as such it prepares people to be successful in almost any industry/profession.

List one or two highlights of your career.

I was part of the founding team of TJ Maxx. I started when we had zero stores and no revenue and left after a successful run where we grew revenues to over \$3 billion and store count to 500. By that time I had become Senior VP for Merchandise Planning, Logistics and Distribution.

New Students

We look forward to getting to know all of you and helping you on your way to becoming successful industrial engineers!

BS IEM

Abdurahman Alenzi
Adbullah Alkandari
Elizabeth Berka
Sebastian Gutierrez
David Irving
Mohammad Karam
Joshua Linholm
Andrew Munson
Jacob Roach
David Schwartz
Wesley Sheets
Benjamin Vise
Jordan Wheeler
Braden White

MS IEM

Anwar Ahmed
Prayash Bhattarai
Karan Jeetendra Hingmire

Shantanu Kulkarni
Enrico Laoh
Sushrut Kirtikant Lokhande
Shantanu Namjoshi
Harshith Ponugoti
Vicki Rijhwani

MS ETM

Zachary Bordovsky
Mitchell Carlson
Godwin Ekpek
Geraldine Fuentes
Devin Geeteh
Jon Grubb
Talia Nguyen
Navin Reddy
Jeffrey Rosebaugh
Victor Shealy
Lori Willis

Graduates

We would like to congratulate the following IEM students for their hard work and dedication in completing their degrees in Fall 2020.

BS IEM

Taylor Boyd
Robert Cabello
Kaitlyn Close
Robert Hammersmith
Cassie Johnson
Erin Kraft
Iker Larraza
Yilin Liu
Jax Silva
Hannah Walters
Jake Ward
Antonio Washington

MS ETM

Chad Ashworth
Sean Blanton
Austin Hamm
Dustin Herrick
Lynn Jones
Dawn Lundblade
Brandon Mayfield
Eduardo Corona Romero
Robert Stracener
Austin Voss
Brandon Wrobbel

ETM Certificate

Jerrold Lewis

MS IEM

Mostafa Amini

PhD IEM

Devaraja Radha Krishnan
Ronny Pacheco Segura

Industrial Advisory Board

Hello OSU IEM Family!

The IAB is dedicated to supporting IEM through participation in the accreditation process, helping our curriculum meet the current needs and trends of industry, and mentoring students and senior design projects. We were able to have our spring meeting virtually at the end of February. The main theme for our time was ensuring we are utilizing our resources to the best of our ability in support OSU IEM. Below is an overview of the main actions for the respective committees.

Accreditation Committee:

- ABET accreditation report will be submitted in July – includes feedback/surveys from IAB, other alumni, and employers to support the IEM department accreditation
- IAB feedback from industry trends is being incorporated into the IEM curriculum
- On October 24-26, ABET will conduct a virtual review as part of the accreditation and IAB members will be present to support
- Tom Saunders was elected as the committee chair

Outreach Committee:

- Making plans to add additional members in the fall to help round out the board's background and demographic
- Continue to help grow and support OSU IEM presence on LinkedIn
- Jon Womack retired from the board after serving 6 years and was a former IAB president who was instrumental in furthering development and impact of the IAB. He will be missed!

Faculty and Student Committee:

- Continuing support of senior design projects with IAB mentors to help provide industry insight with the current projects*

Project	Client	IAB Mentor
Workload Balanced Surgeon Scheduling	Medical University of South Carolina	Ashley Estes
Layout Improvement for Storeroom	Webco Industries	Frank Groenteman
Cost - Effective Freight Carrier Selection	ArcBest	Michael Foss
Optimization of Montage Schedule	Ameristar	Tom Saunders
Driver Fleet Scheduling	J.B. Hunt	Bill Dueease
Improving Supply Chain Profitability	OnCue	Bill Dueease
Data Analytics Project for Civil Aviation Registry Division	Federal Aviation Administration	Kevin Doeksen

*If you have ideas for future senior design projects and/or internships for either undergraduate or graduate students, please reach out to Dr. Baski Balasundaram (baski@okstate.edu)

We are also looking at ways to partner with the Cowboy Academy to support IEM. It is such an exciting time in the school's history with the student energy and alumni involvement. We are honored to support the vision and provide value! Go Pokes!

With warm regards,

The OSU IE&M Industrial Advisory Board

IAB Members

Brian Adams
Textron Aviation

Kevin Doeksen
American Airlines

Bill Dueease
The Coach Connection

Ashley Estes
Zeus Industrial Products

Michael Foss
Flexport

Jack Goertz
Tandems, Ltd

Frank Groenteman
TMAC

Steve Kiester
Bell Flight

Ed Pohl
University of Arkansas

Zach Roberts
J.B. Hunt Transport Inc.

Stephanie Royce
Oklahoma State University

G. Satish
Connixt, Inc.

Tom Saunders
Pioneer Natural Resources

Brenda Shumate
Williams Companies

Jack Watts
Portola Company

Jon Womack
Third City Properties

Where Are They Now?



Jeff Greer

General Manager of Wall Colmonoy Aerobrazze

Jeff Greer currently serves as the General Manager of Wall Colmonoy Aerobrazze in Oklahoma City, OK. Aerobrazze Engineered Technologies is a division of Wall Colmonoy that manufactures engineered components including heat exchangers, exhaust systems and cold plates for aerospace and industrial applications.

Jeff earned his BS in Industrial Engineering and Management from Oklahoma State University in 1986. He returned to Oklahoma State later in life to complete his Master's in Business Administration at the age of 55, graduating summa cum laude. Jeff's wife, Lynette, and two of his three children are also alumni of Oklahoma State's Industrial Engineering and Management program.

Jeff is an avid photographer, enjoys golf and spending time with his grandson in the Phoenix area.

Jeff has been a member of the IEM Cowboy Academy since 2017. He currently serves as the Secretary of the Executive Committee and also serves on the Center of Excellence Committee which is focused on creating collaborative partnerships between industry as well as IEM faculty and students.



Mario Cornejo

Director level, Dell Technologies Service Parts - Data Science Strategy

Mario leads the implementation and transformation of data science strategy across Dell Technologies Service parts (DTSP) organization that includes several business units like planning, procurement, fulfillment/operations and reverse logistics/repair, reporting to the Vice-President of Data Science & BI. He is responsible for optimizing over \$1B+ spend across 900+ fulfillment centers around the globe through the implementation of operations research and AI technologies.

Where Are They Now?

Mario received his MSc and PhD from IEM in 2005 and 2015 respectively. During his MS he was advised by Dr. Case, and during his PhD he was advised by Dr. Ingalls and Dr. Tieming Liu. He is originally from El Salvador and is married to Claudia Escobar, who is also an IEM alumna. Together, they have two kids, Andrea (11), and Sebastian (9). In his free time, he enjoys traveling with his family and friends, or listening to his kids play guitar and piano.



Umar Al-Turki

Professor of Industrial Engineering and Operations Research at King Fahd University of Petroleum and Minerals

Umar Al-Turki is a Professor of Industrial Engineering and Operations Research in the Department of Systems Engineering at King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia. He studied in the School of Industrial Engineering and Management at Oklahoma State in 1989, where he gained his MSc degree. Afterwards, he joined the Decision Sciences and Engineering Systems department in Rensselaer Polytechnic Institute and earned his PhD in 1994.

Since then, he has joined the KFUPM faculty in Dhahran, Saudi Arabia. In KFUPM, he has served as the dean of the College of Computer Sciences and Engineering, the director of the center of excellence in maintenance research, and the head of the Systems Engineering Department. Umar served in the global advisory board of the Industrial Engineering and Operations Management Society and was elected as a fellow of that society.

Umar's three years at OSU played a major role in shaping his academic career as well as his social life. He has unforgettable memories in Stillwater and an Oklahoman daughter.

Scholarships & Endowed Professorships

Endowed undergraduate scholarships provide the foundation for excellence and growth of our program. They offer the ability to fund undergraduate students and their enrichment activities with certainty, a critical element in our strategic plan to improve the student experience and create impact. Undergraduate and graduate scholarships provide the opportunity to recruit and retain top student talent.

Undergraduate Scholarships

- Braun Engineering Scholarship
- William L. Cain Industrial Engineering Endowed Scholarship
- Ken and Lynn Case Scholarship
- Robert G. Herod Endowed Engineering Scholarship
- Ron and Diana Orr Endowed Scholarship
- Kent and Sheryl Powers Endowed Scholarship in Industrial Engineering and Management
- Cynthia Renee Travis Endowed Scholarship
- Woodson Family Trust Scholarship
- S.D. and B.W. Yeigh Scholarship for Women in Engineering

Graduate Scholarships

- Leland Blank '70 and Sallie Sheppard Graduate Fellowship in Industrial Engineering and Management
- Lynn E. Bussey Scholarship

Scholarships & Endowed Professorships

Endowed Chairs & Professorships

Endowed Chairs and Professorships provide perpetual funding to attract and retain the highest-quality faculty with the best minds, the most-creative researchers and the most-engaged teachers with national and international recognition. The recognition honors outstanding, distinguished and influential professors who inspire, enhance, and challenge students for greater learning. These endowed positions provide crucial support for scholarly and research pursuits which, in turn, raises the quality, recognition, and reputation of Oklahoma State University.

Endowed Chair

- Donald and Cathey Humphreys Chair in Industrial Engineering and Management

Endowed Professorship

- Wilson Bentley Professorship in Industrial Engineering and Management

Legacy Gifts for Endowed Chairs & Professorships

Legacy gifts for Endowed Chairs and Professorships enable donors to create a powerful philanthropic legacy by making estate gifts towards the hiring and retention of world class faculty in the School of Industrial Engineering and Management for years to come. These endowed positions are crucial for recruiting and retaining the highest-quality faculty with the best minds, the most-creative researchers and the most-engaged teachers with national and international recognition.

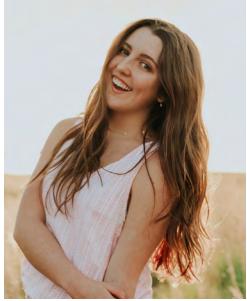
Endowed Chair

- Ken and Lynn Case Endowed Chair in Industrial Engineering and Management
- Jack L. and Susan D. Goertz Chair in Engineering

Endowed Professorship

- Rick and Sandra Webb Endowed Professorship in Industrial Engineering and Management

Awards and Honors



Bella Baker
*Bill and Melinda Gates
Scholarship*



Anshul Maheshwari
*OSU's MLK
Scholarship*



Jeffrey Stockel
*Mortar Board Top 10
Freshman Man*



Torie Richardson
*St. Patrick's Award
- Awarded to Top 5
CEAT Seniors*



Harshal Kaushik
*Roy and Virginia
Dorrrough
Distinguished
Graduate Fellowship*



David Schwartz
*Mortar Board Top 10
Freshman Man*



Bailey Hackler
*Recognized at the
OSU Student
Employee Awards for
her work as a CEAT
Student Ambassador*



Megan Mann
*Dr. Gerald Lage 2021
Academic
Achievement Award*

*Arthur Ashe Sports
Scholar*



Matthew Wilkinson
*CEAT IEM Outstanding
Senior Student*



Jackson Baker
*CEAT IEM Outstanding
Graduate Student*



Laura Singletary
Pipeliners Club Scholarship

Awards and Honors

Awards and Honors

CEAT Scholarships:

CEAT Dean's Award/ Engineering Scholarship

Cameron Groenteman
Andrew Munson
Ananya Singh
Matthew Wilkinson

CEAT StuCo Scholarship

Jared Jenkins
Victoria Richardson
Matthew Wilkinson

CEAT Summer Bridge Program

David Schwartz
Grace Voth

CEAT Undergrad Research

Scholarship

Lauren Millis

Dean Karl Reid CEAT Scholarship

Bella Baker

Dolese CEAT Scholarship Program

Keegan Cook
Jared Crawford
Kyle Humphreys
Jackson Linson
Caitlin Mantooth
Lauren Millis
Kramer Pascal
David Schwartz
Ananya Singh
Jeffrey Stockel
Tyler Wedel
Nathan Whitehead

Edward Lynch CEAT Scholarship

Logan Davis

FIRST Robotics - Dolese Scholarship

Ethan Inman

Gary & Kerri Wilson Engineering, Architecture, & Technology

Ryne Garrison

Herman E. Smith CEAT Scholarship

Ryne Garrison

Herrington Engineering Scholarship

Samuel Koscelny

J & D Etter Scholarship

Jayden Grilliette

Joseph G. Buswell CEAT Scholarship

Keaton Carter

National Merit - Dolese Scholarship

Jay Eischen
Ryne Garrison
Bradyn Newberg
Caleb Triplett
Nathan Whitehead

ONEOK Scholarship in Engineering

Erik Andino Mejia
Lily Anthony
Raegen Daigle
Aspen Dixon
Margaret Goodin
Sara Humphrey
Megan Mann
Brandon McKisick
Abby Revoir
Courtney Williams
Emma Wilson

P.A. Cowan Engineering Scholarship

Mallory Newell

R/J Schuetz Graduate Fellowship Scholarship

Elizabeth Bunting

Sherman Smith CEAT Scholarship

Miranda Almen
Landon Bakhsh
Sarah Bishop
Benjamin Burchard
Kylie Dowers
Christopher Dyer
Jay Eischen
Jackson Green
Jayden Grilliette

STEM - Dolese Scholarship

Ethan Inman
Kaustuvi Thapa

Transfer Students - Dolese Scholarship

Taylor Boyd

Chemical Engineering Scholarship:

Mark and Lee Ann Dickerson

Ainsley Kyle

Industrial Engineering Scholarships:

Braun Engineering Scholarship

Sara Humphrey

Cynthia Renee Travis Scholarship

Erik Andino Mejia
Courtney Williams
Laura Singletary

IAB Scholarship Fund

Brandon McKisick

K & S Powers Endowed Scholarship

Christopher Chesnut
Ryan Hiatt
Samuel Koscelny
Caleb Triplett
Grace Voth

Awards and Honors

Ken & Lynn Case Endowed Scholarship

Cole Luetkemeyer
Megan Mann

Scholarship to Honor Dean Lohmann, Wilson Bentley, and H.G. Theusen

Hannah Hazelip

Lynn E. Bussey Scholarship & Incentive

Jackson Baker
Elizabeth Bunting

Robert G. Herod Endowed Engineering Scholarship

Benjamin Burchard
Margaret Goodin
Brandon McKisick
Laura Singletary

Thuesen Memorial Fund

Kylie Dowers

William L. Cain Industrial Engineering Scholarship

Sarah Bishop
Taylor Boyd
Matthew Burchard
Hope Goodwin
Jayden Grilliette
Cameron Groenteman
Luke Loughren
James Lucas
Nathan Whitehead
Emma Wilson

Woodson Family Trust

Lily Anthony
Landon Bakhsh
Raegen Daigle

Faculty Accolades



Jennifer Glenn
Received the Outstanding Faculty Award in CEAT from the Order of Omega and the Office of Fraternity and Sorority Affairs



Austin Buchanan
Presented his political redistricting research to the Oklahoma State Senate

Dr. Buchanan's research builds new models and algorithms to develop mathematically sound and transparent political redistricting plans that create a specified number of contiguous districts, each within a specified population range, in a compact manner while preserving subdivisions and communities of interest. Other state-specific or local constraints are also considered.

His presentation is available to view online at: <https://sg001-harmony.sliq.net/00282/Harmony/en/PowerBrowser/PowerBrowserV2/20210414/-1/50377#info>

Media Mentions

A paper published by Dr. Sunderesh S. Heragu in the INFORMS Journal of Applied Analytics titled "Lessons from Modeling and Running the World's Largest Drive-Through Mass Vaccination Clinic" has been cited and discussed in more than 65 media outlets, nationally and internationally, including [AP News](#), [PR Newswire](#), [WebMD](#), [Globe Health News](#), [WUSF Public Media](#), [Street Insider](#), [Yahoo News](#), [Business Insider](#), [Benzinga](#), [Morning Star](#), Australian TV, [New Zealand TV](#), and other outlets.

Dr. Heragu also published an op-ed in [Fox News](#).



Staff Spotlight



Mya Jackson
Student Worker

Mya Jackson, born and raised in Stillwater, is set to graduate this May with a Bachelor's Degree in Human Development and Family Sciences, specializing in Child and Family Services, and with a minor in Marketing. Being a second-generation Cowgirl and growing up in Stillwater made the decision to further her education close to family easy. Getting to share the Cowboy (or Cowgirl) experience with her mother is very meaningful to her.

During Mya's time at Oklahoma State, she has been a member of Pi Beta Phi Fraternity for Women and held positions within the sorority. Mya has also been a Student Worker for the Industrial Engineering Department since the end of her freshman year of college and will continue to be here until she graduates. In addition to welcoming individuals into the office, she has also worked as a dance instructor at Thriller Dance Studio in Stillwater during the evenings for the past five years.

Mya plans to move to Tulsa, Oklahoma after graduation and obtain her Master's of Science in Counseling from OSU Tulsa. In the future, she hopes to be a school counselor in either Oklahoma or Texas to remain close to family.

Outside of school, her hobbies include spending time with family and friends, doing anything related to sports or the outdoors, and taking her dog with her everywhere.

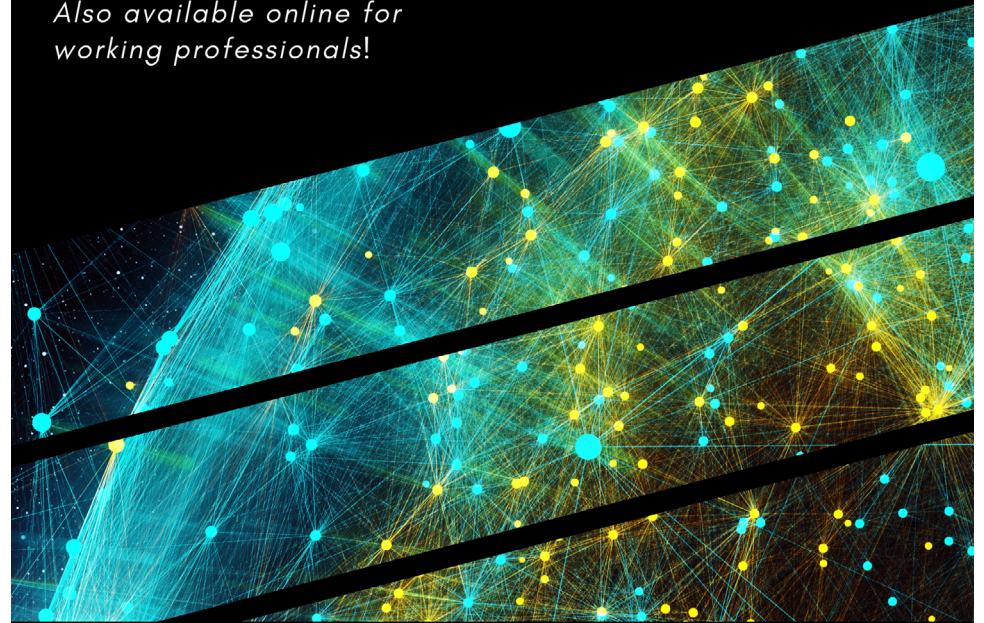
"Let all that you do be done in love." –1 Corinthians 16:14

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The Cowboy Academy

The Cowboy Academy Vision

For graduates to achieve their most valued and rewarding careers!

In 2021, the Cowboy Academy has been moving forward in the pursuit of enhancing the opportunity for a valued career for graduates. The Academy has made significant strides in this pursuit in the past 6 months. The organization has continued to mature in both its processes and its ability to make a meaningful difference in support of the School of Industrial Engineering. It is truly exciting to re-connect and work alongside talented Alumni in a collective effort to give back to the School and University that afforded all of us such amazing opportunities.

As President, my goal in 2021 is to create a solid, dependable, administrative structure for new leadership of TCA to make a transition seamlessly and to continue encouraging and nurturing our committees (some recently formed) to make real progress toward each of the TCA Mission components:

Enhance External Visibility – The Academy will participate both in conjunction with the IEM department and independently in pursuit of lifting the image of OSU Industrial Engineering as one of the top schools in the United States to pursue an education in Industrial Engineering. Additionally, the academy has to goal raising awareness and marketing OSU IEM to prospective students, parents and school administrators.

- In early 2020, the Academy allocated funds to hire a marketing intern to begin leveraging the developed content that had been previously produced by the Academy. The intern, Myers Turner alongside the IEM Department Head, Dr. Sunderesh Heragu, and his team meet weekly to set strategy including ad buys, platforms, review hit rates, and overall campaign effectiveness.
- Recently, the new Marketing Chair, Stephanie Royce, has been building a marketing team to advise on Marketing Strategy. Stephanie has been providing independent counsel to Dr. Heragu in the area of a School funded campaign to recruit Masters applicants. The marketing committee is in the process of assessing marketing strategies to determine the best use of resources to raise awareness and prestige of the OSU IEM program.

Provide Financial Support – The Academy will work in partnership with the OSU Foundation and the IEM department to identify specific needs of the department including: Professorships, Chairs, and Student Scholarships. The department has a goal of raising \$20 million and has raised almost \$8 million to date. The Academy will complement the OSU Foundation outreach in a more targeted manner.

- The Fundraising committee, has been working under the leadership of Chair, Tom Britton and in collaboration with the OSU Foundation to identify the best coordinated approach to connect with potential donors who have a specific interest in supporting Industrial

Engineering. The committee has recently reached out to a small group of potential donors in an effort to help them understand the need, how their contribution will make a difference, and how to get connected.

The results have been encouraging, as early in the campaign, we have been receiving positive feedback along with significant contributions. This early effort will serve to refine our approach for continued success.

- As President of the Academy, I encourage each of you to consider your approach to “giving back” to an institution that prepared you for an amazing career. Our future lies in the hands of those to come and we can play a major role in their success!

Enhance Student Career Opportunities – The Academy will work directly with students to provide insight, experience, and connections to Alumni to enhance each students’ chance to be better prepared for their industry entrance. Additionally, providing these opportunities for students will improve employer satisfaction and in turn market credibility.

- In the past year, the Career Opportunities committee, led by Leva Swim, has been focused on building infrastructure in two areas of service. The first, a formal mentorship program allowing Alumni to connect directly one-on-one with students to provide an ongoing connection for students to leverage as they make the transition from student to working professional. The initial mentoring effort has occurred over the past year. Surveys to students and mentors are currently being distributed. The goal is to leverage the feedback to improve the value and administration of the mentoring program and to expand the programs’ reach. We expect to roll out a larger program footprint in the Fall of 2021.
- The second effort is a webinar series, recruiting Alumni who are subject matter experts to discuss specific topics and allow students to gain knowledge and direction. Initial webinars were not well attended, so the committee is working to determine how to offer more value to students.

Foster a unique and beneficial partnership between the business community and OSU IEM

– The Academy will work with industry to develop opportunities for students to gain work experience while continuing to pursue their degree and to provide industry with talented engineering resources, both faculty and students, to address real world projects and problems. This “Center of Excellence” will provide students a connection into industry and allow them to refine their interests, and gain the experience necessary to hit the ground running upon workforce entry. The Center will provide companies access to engineering students who at minimal cost can apply their talents to address high value projects and lay the groundwork for connecting with these students in the recruitment process.

- In the past year, the Academy has been struggling with the scope of this effort. The “Center of Excellence” can be a wide-reaching endeavor, trying to bring many invested parties together. Recently, the Chairman, Jon Womack worked with TCA leadership to clarify the

- committee's scope, and has successfully formed a committee.
- While the committee just began its work, it has caught fire! We have a group of talented alumni coupled with IEM faculty who collectively are passionate about building this partnership with Industry. The committee has already connected with the Oklahoma Department of Commerce to educate them and their constituent companies on the value offered by the students and faculty of the School of Industrial Engineering. Many companies have already expressed a partnering interest. The committee is attempting to adjust and accommodate the surging initial demand. It is exciting to see Academia, students who have been nurtured in the field of IE, and industry come together!

Overall, the Academy is making a significant impact in the areas of attracting students and faculty, providing opportunities for students to grow more holistically while pursuing their formal education, and building strategic partnerships to provide customer value and student enrichment. As President, I am encouraged to see so much passion and associated action on the part of our Alumni. The Cowboy Spirit is an amazing thing to share.

We serve the School of Industrial Engineering and encourage all Alumni to be actively involved contributing whatever resources available. The Cowboy Spirit will enrich your life.

In service to our Alma Mater,

Mitch Myers
President, The Cowboy Academy of Industrial Engineering

Board Members

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 Tom Britton
 Bill Dueease
 Laura Easley
 Jack Goertz
 Jeff Greer
 Frank Groenteman
 John Lewis
 Mitch Myers
 Leva Swim
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Cem Karacal	Lyndon Taylor
Stuart Keeton	Silvanus Udoka
Behrokh Khoshnevis	Gregory Watson
William Kolarik	Randy Watson
David Kyle	Jack Watts
John Lewis	Rick Webb
Rasaratnam Logendran	Lawrence Whitman
Jamie Matlock	Marion Williams
Gary Maxwell	Jon Womack
Joe Mize	Eric Woodroof
Mitch Myers	Stacie Wrobbel

Seminar Series

The School of Industrial Engineering and Management in conjunction with the OSU INFORMS Student Chapter sponsors a Seminar Series in the fall and spring semesters. Various topics are covered by speakers from OSU and other organizations. The seminars were held on Wednesdays from 2:30-3:30 pm during the Spring semester and all seminars were held virtually. Listed below are the seminars we held this semester.

Date	Speaker/Institution	Title
2/17	Dr. He Bai, Oklahoma State University	Recent Advances in Decentralized Bayesian Learning
2/24	Dr. Greg Jamieson, University of Toronto	Navigating with Survey Information in Augmented Reality: Design Dimensions and Human Performance
3/10	Dr. Ranjana Mehta, Texas A&M University	Quantifying Human Systems Interactions: Shedding Light on the Brain...Literally!!
3/17	Dr. Weihua Sheng, Oklahoma State University	ASCCBot: A Robotic Assistant for the Home Healthcare Industry
3/24	Dr. John Lee, University of Wisconsin-Madison	Trusting Automation: Conceptual Issues and Statistical Techniques
4/14	Dr. Chang Nam, NC State	Brain-Computer Interfaces: Reverse-Engineering the Brain for Human-Systems Engineering
4/21	Dr. Yuan Zhou, UT Arlington	Balancing the Protection of COVID-19 At-Risk Populations While Reopening Communities



US News Rankings

US News and World Report has once again recognized the outstanding quality of IEM's programs.

The online graduate MS ETM was ranked #16 among public universities.

US News also ranked IEM among the top 25 graduate programs in industrial/manufacturing/systems among public universities. Among public universities, IEM was ranked number 22, up from number 29 in 2012-13.



2022 US News Rankings for IEM

22

IEM ranks 22nd among graduate programs in industrial/manufacturing/systems engineering programs in public universities!

16

The MSETM program ranks 16th among online engineering management programs in public universities!



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Bruce A. Lee
John & Judy Lewis
William H Remy, III
Jerry E Ryan
Scott Sink
Katie Speakes
Col (Ret) Richard Thompson
John M Tye, III
Marion L Williams

Student Chapters

The Institute of Industrial and Systems Engineers

The Institute of Industrial and Systems Engineers has had an extremely successful Spring semester! Our organization is a global association committed to connecting students and professionals in the Industrial and Systems Engineering field. Everything we do is centered around creating stronger connections between students and faculty in the School of Industrial Engineering and Management as well as facilitating networking opportunities across the industry and our region. Our mission is to further our IEM undergraduate and graduate students' success in the academic and professional worlds.

This semester, we held a successful Six Sigma Green Belt certification course. Additionally, the focus of this semester has been on looking forward to the IISE South Central Regional Conference. Originally, our IISE student chapter was slated to host the conference in the Spring of 2021, but due to COVID-19 restrictions, we received the ability to postpone until the Spring of 2022. We will be hosting officer elections for the 2021-2022 academic year and look forward to handing over the organization to bright new minds. We are currently working on creating more IISE service opportunities and promoting general membership in the national IISE organization!

We would like to recognize the students who have worked so hard to make this organization so successful. The officers this academic year are:

- Brandon McKisick, President
- Amrit Chugani, Vice President
- Matthew Wilkinson, Conference Chair
- Marco Pina-Perez, Secretary
- Trent Slater, Treasurer
- Megan Mann, Merchandise Chair
- Bailey Hackler, Communications Chair
- Ben Burchard, Recruiting Chair
- Sam Koscelny, Fundraising Chair
- Matthew Edgeller, Social Chair
- Ainsley Kyle, Events Chair
- Chloe Jones, Website Chair
- Kaustuvi Thapa, Mentorship Chair
- Trent Darby, CEAT Student Council Rep

Faculty Advisor: Dr. Chenang Liu

If you would like more information about IISE or want to become a member, please email Brandon McKisick at brandon.mckisick@okstate.edu.

Student Chapters

Association for Supply Chain Management

ASCM OSU student chapter aims to provide a training platform for new supply chain enthusiasts by creating a learning environment and building competencies on different supply chain operations and management topics. Our goal is to encourage certifications and provide networking opportunities such that it will create a bridge between academics and supply chain industrial work environment.

We are currently looking for new students interested in supply chain who can join our student chapter. In this way we hope to extend our horizon and build the supply chain community.

Faculty Advisor: Dr. Tieming Liu

Alpha Pi Mu Industrial Engineering Honor Society

The purpose of Alpha Pi Mu is to recognize students who have achieved academic excellence, promote scholarly activities, and foster an atmosphere to facilitate social interactions between students and faculty. Being a part of Alpha Pi Mu gives individual scholarship and volunteer opportunities. The society is open to juniors, seniors, and graduate students who meet the membership requirements.

Due to the strain of the pandemic, the organization was not able to hold the events that we normally do, such as volunteer activities in our community and an in-person initiation. Last semester, for Fall 2020, we held a virtual initiation. This semester, Alpha Pi Mu plans to initiate new members for the Spring 2021 semester the same way. This virtual initiation ceremony will honor our new members and welcome them to the organization. We hope that in fall the organization will be able to be back in full swing and we hope to be able to complete all the activities we normally do.

Maggie Goodin, President
Jackson Baker, Treasurer

Faculty Advisor: Dr. Manjunath Kamath

Student Chapters

INFORMS

The Institute for Operations Research and the Management Sciences (INFORMS) is the world's largest professional association dedicated to and promoting best practices and advances in operations research, management science, and analytics to improve operational processes, decision-making, and outcomes. The Oklahoma State University Student Chapter of INFORMS is a student-led campus organization focused on promoting student learning and professional advancement with fellow students and faculty within the field of operations research and management sciences. Our goal is to enable students to go beyond the bounds of coursework as they engage in research and extracurricular activities that lay the groundwork for their future as OR/MS professionals. Due to COVID-19, INFORMS Student Chapter did not hold any in-person events during Spring 2021, but it did host the following online events:

- Online Python workshop for IEM graduate students.
- Online meeting with alumni for IEM Ph.D students

The INFORMS student chapter advisor is **Dr. Juan Borrero** and the Spring 2021 student officers are:

Niloufar Daemi, President
Pouya Ahadi, Vice President

If you have any questions or would like to connect with the student chapter, please feel free to email Niloufar Daemi at niloufar.daemi@okstate.edu

Research Grants

Active in 2019-2021

B. Balasundaram, A. Buchanan, and S.S. Heragu, FLAT: Freight Lane Assignment Tool, TreeHouse Foods, Inc., 1/13/2020–8/16/2020, \$163,730.

B. Balasundaram, A. Buchanan, and S.S. Heragu, Optimization-Based Aggregate Master Planning Tools for Bay Valley Foods, LLC, Bay Valley Foods, LLC, 10/1/2017–1/31/2020, \$250,599.

J. Borrero and L. Lozano, Modeling Worst-case Defender-Attacker Problems as Robust Linear Programs with Mixed-Integer Uncertainty Sets, Office of Naval Research, 05/01/19 - 02/30/22, \$300,000.

A. Buchanan, CAREER: Parsimonious Models for Redistricting, National Science Foundation, 6/1/2020 – 5/31/2025, \$500,000.

A. Buchanan, Imposing Connectivity Constraints in Large-Scale Network Problems, National Science Foundation, 6/15/2017 – 5/31/2020, \$258,586.

S.S. Heragu and R. Wilson (PIs), The Conoco Phillips/OSU Data Analytics Collaboration, ConocoPhillips, 7/1/19 - 6/30/25 \$675,000.

R. Taylor, **S.S. Heragu**, and **K. Jurewicz**, New Product Development Center, Economic Development Administration, 10/8/2020-10/7/2023, \$1,000,000.

M. Kamath, F. Yousefian, and S. Frazier, Development of a GIS Application for Analyzing HazMat Flows in Oklahoma, Oklahoma Department of Emergency Management, 10/1/2018 - 9/31/2019, \$131,620.

M. Kamath, F. Yousefian, and S. Frazier, Using HazMat Flow Analyzer and Risk Assessment Tools to Support Emergency Resource Planning and HazMat Training Activities in Oklahoma, Oklahoma Department of Emergency Management, 10/1/2019 - 9/31/2020, \$131,341.

M. Kamath, F. Yousefian, and S. Frazier, Phase VI: An Integrated GIS Application for HazMat Flow Analysis and Risk Assessment to Support Local Emergency Planning and Preparedness in Oklahoma, 10/1/2020-9/30/2021, \$118,110.

W. Kolarik, Industrial Assessment Center Program, U.S. Department of Energy, 9/1/2016 - 9/31/2021, \$1,500,000.

T. Liu, W. Paiva and Ye Liang. "Validating a clinical decision support algorithm developed with big data to diagnose, state, prevent, and monitor a patient's diabetic retinopathy," OCAST, 8/1/2018 - 7/31/2021, \$90,000.

F. Yousefian, "CAREER: Advancing Mathematical Models and Algorithms for Decentralized Optimization in Complex Multi-agent Networks", National Science Foundation, 3/1/2020 – 2/28/2025, \$500,000.

Journal Publications

Papers published or accepted in 2019-2021

B. Balasundaram, J.S. Borrero, H. Pan, "Graph Signatures: Identification and Optimization," *European Journal of Operational Research* (2021). Forthcoming.

Z. Miao and **B. Balasundaram**. An ellipsoidal bounding scheme for the quasi-clique number of a graph. *INFORMS Journal on Computing*, 32(3):763–778, August 2020.

F. Nasirian, F. M. Pajouh, and **B. Balasundaram**. Detecting a most closeness-central clique in complex networks. *European Journal of Operational Research*. 283(2):461-475, June 2020.

B. Farmanesh, A. Pourhabib, **B. Balasundaram**, and **A. Buchanan**. A Bayesian framework for functional calibration of expensive computational models through nonisometric matching. *IIE Transactions*, May 2020. <https://doi.org/10.1080/24725854.2020.1774688>.

J. Ma and **B. Balasundaram**. On the chance-constrained minimum spanning k-core problem. *Journal of Global Optimization*, 74(4):783-801, August 2019.

S. Sun, Z. Miao, B. Ratcliffe, P. Campbell, B. Pasch, Y. A. El-Kassaby, **B. Balasundaram**, and C. Chen. SNP variable selection by generalized graph domination. *PLOS ONE*, 14(1):1–18, January 2019.

J. Yang, **J.S. Borrero**, O.A. Prokopyev, D. Saure, "Sequential Shortest Path Interdiction with Incomplete Information and Limited Feedback," *Decision Analysis* (2021). Forthcoming.

J.S. Borrero, L. Lozano, "Modeling Defender-Attacker Problems as Robust Linear Programs with Mixed-integer Uncertainty Sets," *INFORMS Journal on Computing* (2020). Forthcoming.

J.S. Borrero, O.A. Prokopyev, P. Krokhmal, Optimization of cascading processes in arbitrary networks with stochastic interactions. *IEEE Transactions on Network Science and Engineering*. Accepted for Publication.

J.S. Borrero, O.A. Prokopyev, D. Saure, Sequential interdiction with incomplete information and learning. *Operations Research*, 67(1): 72-89, 2019.

V. Stozhkov, **A. Buchanan**, S. Butenko, V. Boginski. Continuous cubic formulations for cluster detection problems in networks. *Mathematical Programming*. Accepted for Publication.

H. Salemi and **A. Buchanan**. Parsimonious formulations for low-diameter clusters. *Mathematical Programming Computation*. Accepted for Publication.

H. Validi, **A. Buchanan**. The optimal design of low-latency virtual backbones. *INFORMS Journal on Computing*. Accepted for Publication.

H. Validi, **A. Buchanan**. A Note on "A linear-size zero-one programming model for the minimum spanning tree problem in planar graphs". *Networks*, 73(1): 135-142, 2019.

J.L. Walteros, **A. Buchanan**. Why is maximum clique often easy in practice? *Operations Research*. Accepted for Publication. Honorable Mention in the 2019 JFIG Paper Competition.

T. van de Kracht and **S.S. Heragu**, "Lessons from Modeling and Running the World's Largest Drive-Through, Mass Vaccination Clinic," *INFORMS Journal of Applied Analytics*, Vol. 51, No. 2, pp. 91-105, March-April 2021.

F. Majzoubi, L. Bai, and **S.S. Heragu**, "The EMS Vehicle Transportation Problem During a Demand Surge," *Journal of Global Optimization*, Vol. 79, No. 4, pp. 989-1006, 2021.

K. A. Jurewicz, D. M. Neyens, K. Catchpole, A. Joseph, S. T. Reeves, J. H. Abernathy III. An observational study of anaesthesia workflow to evaluate physical workspace design and layout. *British Journal of Anaesthesia*. Accepted, 2020.

J. Ma, Y.T. Leung, and **M. Kamath**, 2019, Service system design under uncertainty: Insights from an M/G/1 model, *Service Science*. 11(1):40-56, 2019.

Z. Shi, C. Kan, W. Tian, and **C. Liu**, A Blockchain-based G-code Protection Approach for Cyber-Physical Security in Additive Manufacturing. *ASME Journal of Computing and Information Science in Engineering*, 2020, Accepted for Publication.

C. Liu, Z. Kong, S. Babu, C. Joslin, and J. Ferguson, An Integrated Manifold Learning Approach for High Dimensional Data Feature Extractions and its Applications to Online Process Monitoring of Additive Manufacturing. *IIE Transactions*, 2020, Accepted for Publication.

C. Liu, A. Law, D. Roberson, and Z. Kong, Image analysis-based closed loop quality control for additive manufacturing with fused filament fabrication. *Journal of Manufacturing Systems*. 51: 75-86, 2019

J. Liu, **C. Liu**, Y. Bai, P. Rao, Z. Kong, and C. Williams, Layer-wise spatial modeling of porosity in additive manufacturing. *IIE Transactions*. 51(2):109-123, 2019.

A. Gupta, **T. Liu**, C. Crick. Utilizing Time Series Data Embedded in Electronic Health Records to Develop Continuous Mortality Risk Prediction Models using Hidden Markov Models: A Sepsis Case Study. *Statistical Methods in Medical Research*, 29(11): 3409-3423, 2020.

A. Gupta, **T. Liu**, S. Shepherd. Clinical Decision Support System to Assess the Risk of Sepsis Using Tree Augmented Bayesian Networks and Electronic Medical Record Data. *Health Informatics Journal*, 26 (2): 841-861, 2019.

S. Hariharan, **T. Liu**, M. Z. Shen. Role of Resource Flexibility and Responsive Pricing in Mitigating the Uncertainties in Production Systems. *European Journal of Operational Research*, 284(2), 498-513, 2020.

Y. Zhou, **T. Liu**, G. Cai, Impact of in-store promotion and spillover effect on private label introduction. *Service Science*, 11(2), 96 – 112, 2019.

A. Gupta, **T. Liu**, S. Shepherd. 2019. Clinical decision support system to assess the risk of sepsis using tree augmented Bayesian networks and electronic medical record data. *Health Informatics Journal*. Published Online 13 Jun 2019.

J. K. Nuamah, Y. Seong, S. Jiang, E. Park, & D. Mountjoy. Evaluating effectiveness of information visualizations using cognitive fit theory: A neuroergonomics approach. *Applied Ergonomics*, 88, 103173, 2020.

L. M. Mazur, R. Adams, P. R. Mosaly, M. P. Stiegler, **J. K. Nuamah**, K. Adapa, ... & L. B. Marks. (2020). Impact of simulation-based training on radiation therapy therapists workload, situation awareness, and performance. *Advances in Radiation Oncology*.

J. K. Nuamah, P. R. Mosaly, R. Adams, K. Adapa, B. S. Chera, L. B. Marks, & L. M. Mazur. Assessment of Radiation Therapy Technologists' Workload and Situation Awareness: Monitoring 2 Versus 3 Collocated Display Monitors. *Advances in Radiation Oncology*, 2020.

L. M. Mazur, R. Adams, P. R. Mosaly, **J. K. Nuamah**, K. Adapa, & L. B. Marks. Impact of Simulation-based Training and Neurofeedback Interventions on Radiation Technologists Workload, Situation Awareness, and Performance. *Practical Radiation Oncology*, 2020.

J. K. Nuamah, K. Adapa, & L. Mazur. Electronic health records (EHR) simulation-based training: a scoping review protocol. *BMJ open*, 10(8), e036884, 2020.

P. R. Mosaly, R. Adams, G. Tracton, J. Dooley, K. Adapa, **J. K. Nuamah**, ... & L. M. Mazur. Impact of Workspace Design on Radiation Therapist Technicians' Physical Stressors, Mental Workload, Situation Awareness, and Performance. *Practical Radiation Oncology*, 2020.

R. K. Mehta, & **J. K. Nuamah**. Relationship Between Acute Physical Fatigue and Cognitive Function During Orthostatic Challenge in Men and Women: A Neuroergonomics Investigation. *Human Factors*, 0018720820936794, 2020.

J. K. Nuamah, C. Rodriguez-Paras, & F. Sasangohar. Veteran-Centered Investigation of Architectural and Space Design Considerations for Post-Traumatic Stress Disorder (PTSD). *HERD: Health Environments Research & Design Journal*, 1937586720925554, 2020.

Y. Zhu, J. K. Jayagopal, R. K. Mehta, M. Erraguntla, **J. K. Nuamah**, A. D. McDonald, ... & S. H. Chang. Classifying Major Depressive Disorder Using fNIRS During Motor Rehabilitation. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 28(4), 961-969, 2020.

J. K. Nuamah, R. Mehta, & F. Sasangohar. Technologies for Opioid Use Disorder Management: Mobile App Search and Scoping Review. *JMIR mHealth and uHealth*, 8(6), e15752, 2020.

J. K. Nuamah, R. Mehta, & F. Sasangohar. (2020). Technologies for Opioid Use Disorder Management: Mobile App Search and Scoping Review. *JMIR mHealth and uHealth*, 8(6), e15752, 2020.

J. K. Nuamah, F. Sasangohar, M. Erraguntla, & R. K. Mehta. The past, present and future of opioid withdrawal assessment: a scoping review of scales and technologies. *BMC medical informatics and decision making*, 19(1), 113, 2019.

J. K. Nuamah, & Y. Seong. A machine learning approach to predict human judgments in compensatory and noncompensatory judgment tasks. *IEEE Transactions on Human-Machine Systems*, 49(4), 326-336, 2019.

J. K. Nuamah, W. Mantooth, R. Karthikeyan, R. K. Mehta, & S. C. Ryu. Neural efficiency of human-robotic feedback modalities under stress differs with gender. *Frontiers in Human Neuroscience*, 13, 287, 2019.

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Spring 2021 Senior Design Teams

Graduating Industrial Engineering and Management (IEM) seniors conclude their academic studies with a capstone course called Senior Design, taken in their last semester. During this course, student teams work as outside 'consultants' on real-world problems for clients in the manufacturing and service sectors. The projects provide students the opportunity to apply the theories and tools they have learned to provide clients with innovative solutions to a problem.



Ameristar Team:

Lily Anthony
Abigail Berrey
Sara Humphrey
Mallory Newell

Faculty Mentor:
Dr. Juan Borrero

IAB Mentor:
Tom Saunders



ArcBest Team:

Cade Phelan
Victoria Richardson
Kaustuvi Thapa

Faculty Mentor:
Dr. Baski
Balasundaram

IAB Mentor:
Michael Foss



Federal Aviation Authority Team:

Miranda Almen
Erik Andino Mejia
Amrit Sunil Chugani
Aspen Dixon

Faculty Mentor:
Dr. Bing Yao

IAB Mentor:
Kevin Doeksen

Spring 2021 Senior Design Teams



J.B. Hunt Team:

McKenzie Goudy
Chad Henderson
Brandon McKisick
Abby Revoir

Faculty Mentor:
Dr. Austin Buchanan

IAB Mentor:
Bill Dueuease



Department of Surgery, Medical University of South Carolina Team:

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Gloria Flores
Morales
Bailey Hackler
Courtney Williams

Faculty Mentor:
Dr. Farzad Yousefian

IAB Mentor:
Ashley Estes

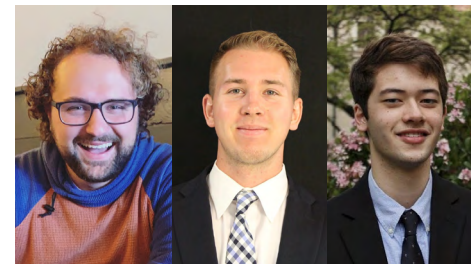


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Matthew Wilkinson

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IAB Mentor:
Bill Dueuease



Webco Industries Team:

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Don Chasteen
James Lucas

Faculty Mentor:
Dr. Manjunath
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IAB Mentor:
Frank Groenteman

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*Regents Professor, Head, and
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*Undergraduate Program Director
Assistant Professor*

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*Wilson Bentley
Professor*

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Assistant Professor

Austin Buchanan, Ph.D.
Assistant Professor

Terry Collins, Ph.D., P.E.
Associate Professor

Katie Jurewicz, Ph.D.
Assistant Professor

Manjunath Kamath, Ph.D.
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Joseph Nuamah, Ph.D.
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Bing Yao, Ph.D.
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Teaching Assistant Professor

Tim Hardin, Ph.D., P.E.
Teaching Assistant Professor

Ying Tat Leung, Ph.D.
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