Message from the Department Chair

I am proud to share with you in this newsletter another exciting academic year full of great news and accomplishments from the faculty, students and alumni.

I want to start by welcoming two new faculty members, Alex Vinel and Mark Schall, who joined our department in the fall of 2015. Alex teaches operations research and Mark ergonomics. In addition, three new professors — Greg Harris, Sa’d Hamasha and Daniel Silva — have joined our department this fall. They will teach systems engineering, electronics manufacturing systems and operations research, respectively. Our faculty has grown from 10 professors in 2011 to 13 in 2016. Our undergraduate student body also experienced a large growth from 266 students in 2011 to 418 in 2015. In the same period, our graduate enrollment increased from 135 to 142 students. I believe we will continue this growth.

After 36 years of service to our department, Chan Park decided to retire in spring 2016. We thank Chan for his service and his multiple contributions to Auburn University. Chan will continue to advise graduate students and teach a few courses. Fadel Megahed accepted a position at Miami University of Ohio. We wish Fadel success in his future career. He will also continue his collaboration with the department.

I would like to highlight our new Lean Engineering Six-Sigma Green Belt certification developed by Tom Devall. To date, 92 students have received this valuable certification. We are one of only a few industrial engineering programs to offer this certification as part of the curriculum. Moreover, we have expanded the international opportunities for our undergraduate students. This summer, 15 engineering students participated in the faculty-led study abroad program in Rome, Italy, and six students took part in the Chile program.

This is the last time that I will be writing to you as department chair of ISE. My term ended Aug. 15. John Evans has been chosen by the faculty to lead the department for the next five years. I wish John a very successful term. Witnessing firsthand the growth and success of our department during these five years as chair have been gratifying to me. Of course, the success of the department has been because of the hard work of the faculty, staff, students and alumni. I consider myself very fortunate to have had the support of many people who contributed in different ways to develop a stronger department. In particular, I want to thank Chris Roberts, dean of the Samuel Ginn College of Engineering, for his constant support and mentorship.

I invite you to read this newsletter and learn more about the achievements of our faculty, students and alumni. I will miss writing to you through this newsletter.

War Eagle!
Jorge Valenzuela
Department Chair
Thomas Walter Center moves to Shelby; Evans appointed interim director

The new Southern Alliance for Advanced Vehicle Manufacturing has been established. The first projects have been launched in additive manufacturing, automation, lean and supply chain design. Auburn has also hired Greg Harris (read more below) to run and expand the center over the coming years. Harris was the program manager for the Digital Manufacturing and Design Innovation Institute. This $100 million center is one of the cornerstone institutes of President Barack Obama’s initiative to create a network of next-generation manufacturing centers to increase American competitiveness.

John Evans was appointed interim director of the Thomas Walter Center for Technology Management. The center has moved to the Shelby Center and now operates under the ISE department.

SAAVM launches first projects; Harris named director

Greg Harris joined the faculty in summer 2016 as an associate professor. Harris received his doctorate in industrial and systems engineering from the University of Alabama in Huntsville. He brings 18 years of experience in manufacturing and management – 11 years as a center director, professor and researcher in a university and almost five years in developing and managing multi-million dollar manufacturing technology projects and programs for the U.S. Army and the Department of Defense.

Sa’d Hamasha has joined the faculty as an assistant professor this fall. He comes to Auburn from the Department of Engineering Management at Rose-Hulman Institute of Technology, where he was an assistant professor. He received a doctorate in industrial and systems engineering from the State University of New York at Binghamton in 2015 and earned a Master of Science degree in industrial engineering and a bachelor’s degree in biosystems engineering from Jordan University of Science and Technology in 2010 and 2007, respectively. Hamasha worked for three years during his doctoral study as a research associate at the Advanced Research in Electronics Assembly (AREA) Consortium - Universal Instrument Corp. His research interests are in the area of quality and reliability engineering with a focus on microelectronics reliability and its consequences for manufacturing.
Alex Vinel and Mark Schall welcomed to ISE faculty

Alex Vinel and Mark Schall joined the department in fall 2015 as assistant professors. Vinel received his doctorate from the University of Iowa, and his research is focused on mathematical programming aspects of stochastic optimization. Schall also received his doctorate from the University of Iowa, and his primary research interests are in developing and applying direct measurement technologies to assess exposure to occupational physical risk factors associated with musculoskeletal health outcomes and designing ergonomic interventions to reduce the incidence of musculoskeletal health outcomes among working people.

Department to offer short courses in ISE this fall

The department is offering three short courses in occupational safety and ergonomics this fall. The courses are:

- Using the NIOSH Guidelines to Assess Lifting Tasks (limited to 40 enrollees) – Oct. 6, 2016
- Assessing Physically Demanding Jobs (limited to 40 enrollees) – Oct. 7, 2016
- Cutting Edge Ergonomics (limited to 60 enrollees) – Dec. 12, 2016

Tuition is $295 for each course. For more information and to register, visit the website for the Deep South Center for Occupational Health and Safety at soph.uab.edu/dsc.

New Programming and Database Applications Course replaces COMP 3010

A new course, INSY 3010: programming and database applications, was created to replace COMP 3010. The course focuses on algorithm development as related to optimization, probability, statistics and data analysis. Jeffrey Smith taught the course for the first time in fall 2015.

ISE students take part in first project-based study abroad in Italy

The Thomas Walter Center successfully sponsored its first project-based study abroad program this summer in Rome, Italy. Fifteen Auburn Engineering students and more than 30 students from the Raymond J. Harbert College of Business teamed up to work on projects for companies located in the Rome area. In addition to the projects, students earned a minimum of six credit hours taught by Auburn faculty members.

Students from the ISE program and the Raymond J. Harbert College of Business participated in the Thomas Walter Center’s first project-based study abroad program this summer in Rome, Italy.

Team works on project for EPA

A multidisciplinary team made up of both ISE students and biomedical engineering students worked on a project sponsored by the Environmental Protection Agency to design, develop and evaluate new media for biofiltration of water using complex shapes and geometries achieved only using 3-D printing. The team exhibited its results at the Science and Engineering Expo in Washington, D.C., in April. Auburn University’s Office of Innovation Advancement and Commercialization is moving forward with one or possibly two provisional patent applications from the student work.
Richard Sesek was chosen by students as the department’s outstanding faculty member. Hanging above the door from his office is a small sign that he touches on his way to class. It says, “Teach like a champion today.” This is exactly what he does every day, his students say.

Jeffrey Smith was funded for a joint project with the Georgia Institute of Technology that involves simulation modeling of the supply chain for Bombardier Recreational Products.

Jerry Davis and doctoral candidate Yousif Abulhassan received funding from several different sources for Abulhassan’s doctoral research on emergency exiting from school buses. From Blue Bird Corp., they received the rear end of a retired 78-passenger school bus. A collaborative project with Auburn’s Department of Psychology was funded by the Auburn University Intramural Grant Program. Two projects were funded by the National Institute for Occupational Safety and Health.

Jerry Davis was promoted to full professor. He delivered the opening keynote presentation at the American Society of Safety Engineers’ region IV professional development conference in Tampa, Florida, in February.

Andres Carrano was granted tenure. Carrano installed a cell for manual material handling/warehousing in the Tiger Motors Manufacturing Lab. The cell was donated by UNEX.

Alice Smith won the 2016 Wellington Award from the Institute of Industrial and Systems Engineers for contributions to the engineering economy field. Over the years, Smith visited Colombia as a Fulbright specialist, where she met with faculty and students and gave a seminar at the National University of Colombia and EAFIT University.

J T. Black’s book “Lean Engineering” was named Book of the Month by ISE magazine in the August 2015 issue.

Sean Gallagher was elected co-chair of the Musculoskeletal Disorders Technical Committee for Tool and Standards International Ergonomics Association.

Tom Devall awarded the new Lean Engineering Six Sigma Green Belt Certification to 92 students in 2015 and 2016.

Jerry Davis

Grants provide income to support departmental research as well as graduate education. During the 2015–16 academic year, the department was granted $1,539,214 million in new research awards and reported $1,873,761 million in research expenditures. Our faculty members manage grants, perform research, teach and participate in related tasks such as outreach, mentoring and service.

Students participate in international logistics course in Chile

Engineering students Alexandria Haas, Chapin Smith, Sarah Grace Mitchell, Sai Sharan Kalva, Norman Chen and William (Reilly) Blair participated in an international logistics course in the first summer mini-semester, expanding their understanding of Chilean culture, touring four companies and attending lectures at the Universidad Técnica Federico Santa Maria. The fourth annual Engineering Study Abroad in Chile program accomplished its mission again this year.

From left to right are Sarah Grace Mitchell, William (Reilly) Blair, Valentina Dyauman (Chilean student tutor), Norman Chen, Chapin Smith, Sai Sharan Kalva, and Alexandria Haas.
Alumni News

Clyde E. Wills, B.I.E. ’68, was named ISE’s outstanding alumnus for 2016. Wills began his business career as an industrial engineer with Butler Manufacturing Co. During his 30-year career at Butler, he served as plant engineering manager, plant manager, senior vice president of operations, president of Butler Buildings International and president of Butler Buildings North America.

Victoria Jordan, M.I.S.E. ’87 and Ph.D. ’06, was inducted as a fellow of the Institute of Industrial and Systems Engineers at its annual conference and expo in 2015. Jordan is the executive director of the Office of Performance Improvement and the University of Texas Chancellor’s Health Fellow for Systems Engineering at the M.D. Anderson Cancer Center.

Student News

The student chapter of INFORMS encourages interest in operations research and management sciences through communication and exchange of ideas. This past year, two speakers provided opportunities for students to expand their knowledge: Eren Sakinc, doctoral candidate in ISE and an assistant in the Office of Engineering Development at Auburn, spoke to the group about the statistical analysis of Auburn alumni data for fundraising. Chao-Chi Ting, senior consultant at IBM, shared his knowledge and experience about business analytics and optimization in practice, including topics in advanced analytics, predictive analytics and optimization of supply chain.

Officers for the 2016-2017 academic year are:

President: Nasrin Mohabbati Kalejahi
Vice president: Hyeoncheol Baik
Treasurer: Behnam Rasoolian
Secretary: Zahra Sedighi Maman

The 2016-17 Institute of Industrial and Systems Engineers officers are, from left to right, Jacob Beauchamp, Kelly Hyde, Sharan Kalva, Delanie Blue Caldwell, Matthew Davidson and Kassi Keiper.

Faculty specializing in occupational safety, ergonomics and injury prevention were invited by a consortium of four Turkish universities to a safety workshop at Yasar University entitled “A Workshop for International Safety Exchange.” The agenda included speakers from all participating universities, the Turkish government and Auburn’s faculty. Yasar University expressed an interest in further exchanges since it will be offering a safety emphasis in its industrial engineering curriculum.

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08

The student chapter of the Institute of Industrial and Systems Engineers won the silver award this year from the national organization. Promoting the profession of industrial engineering, the chapter provides education beyond the classroom, teaches communication, leadership and networking skills and offers opportunities for students to build relationships with friends and colleagues as well as to network with industry members.

The chapter made IISE’s 2015 list of “Top University Chapters with 50 or more members”

Officers for the 2016-2017 academic year are:

President: Sharan Kalva
VP Professional Outreach: Delanie Blue Caldwell
VP Membership: Kelly Hyde
VP Finance: Jacob Beauchamp
Chief of Staff: Matthew Davidson
President Elect: Kassi Keiper
From left to right are Price De Sanctis, Rachel Buchanan, William Collins and Kirsten Failing.

The Sims team, comprised of Kirsten Failing, Price De Sanctis, William Collins and Rachel Buchanan, placed second out of 177 teams in the 2016 Simio Student Simulation Contest. The team was advised by Jeffrey Smith.

Four students earned scholarships from the American Society of Safety Engineers this year: Yousif Abulhassan, Rong Huangfu, Claire Schmidt and Menekse Salar.

Ebrahim Mortaz was voted by the ISE faculty as the department’s outstanding doctoral student for 2016. Mortaz received a bachelor’s degree in mechanical engineering from Tabriz University in Iran, a master’s degree in industrial engineering from Tehran Polytechnic in Iran and a master’s degree in industrial and systems engineering from Auburn. He is a doctoral candidate, and his current research interests include operations research and its applications in the optimization of energy generation, transmission and distribution systems.

Yousif Abulhassan was selected as the department’s outstanding international graduate student for 2016. A native of Kuwait, Abulhassan received a bachelor’s degree in mechanical engineering from the University of Portland and a master’s degree in ISE from Auburn before graduating in May 2016 with a doctorate. In the spring semesters, he was recognized at the Distinguished Engineering Graduate Student Seminar. Abulhassan’s research interests are occupational safety and ergonomics, human performance and design of emergency evacuation systems. During his time at Auburn, he received funding from competitive grants, published his research in leading conferences and was the principal investigator or a key research team member on several studies.

Evan Venable was voted by the ISE faculty as the department’s outstanding undergraduate student for 2016. He is a spring 2016 graduate of the ISE program. Venable is originally from Eclectic and began his studies at the University of Alabama, but he moved to Auburn in 2014 to pursue his education. He is currently a junior, majoring in industrial and systems engineering with a focus on energy systems. He is currently studying for a bachelor’s degree in industrial and systems engineering. Venable is a member of the Society of Women Engineers, the Institute for Electrical and Electronics Engineers, the Institute of Industrial and Systems Engineers and Alpha Pi Mu. He was elected to the ISE honor society. Venable was awarded the Distinguished Engineering Graduate Student Scholarship by the ASSE for his outstanding research and scholarship.

At the Fall 2015 Graduate Engineering Research Showcase, doctoral student Rong Huangfu was the Department of Industrial and Systems Engineering winner for his presentation, “Motion Capture of Critical Populations for Vehicle Ingress and Egress.” Doctoral student Shahab Derhami was awarded an overall honorable mention for his presentation, “A Novel Optimization Approach for Data Mining: A Medical Diagnosis Case.”

Cong Zhao, a doctoral candidate in ISE, won the 2015 Steve Adamson Student Recognition Award for his contributions to the International Microelectronics Assembly and Packaging Society. Zhao’s paper was selected as the best student paper for 2015 from Surface Mount Technology Association International.

Tianqi (Tench) Gao Smith, is a doctoral student whose current studies in musculoskeletal disorders are supported through grants from the National Institute for Occupation Safety and Health. She has served as a Graduate Student Ambassador since fall 2013. In March 2016, Smith was elected president of the Graduate Student Council after serving three years as a senator. She received the Distinguished Engineering Graduate Student Award and 100 Women Strong Leadership Award in 2016. Her research interests include transportation and robotics. She has been elected to the national academic excellence honor society Phi Kappa Phi in May. Smith received a bachelor’s degree from the University of Southern California in 2010 and a master’s degree from Auburn University in 2015, both in ISE.

Facts and figures for 2015–16

Undergraduate enrollment: 418
Graduate enrollment: 142
Bachelor’s degrees awarded: 79
Master’s degrees awarded: 63
Doctoral degrees awarded: 5
ISE certificates awarded in 2015: 79

2016–2017 Forehand Leadership Scholars

Established through a gift from Joe W. Forehand, B.I.E., ‘71, retired chairman and CEO of Accenture, the scholarships recognize ISE students who have demonstrated academic excellence and leadership accomplishments. This year’s Forehand Leadership Scholars are Helen Custodio and Katy Reynolds.

Helen Custodio is a senior from Alexandria, Virginia, who was elected to the industrial engineering honor society Alpha Pi Mu and the engineering honor society Tau Beta Pi. She also serves as philanthropy chair for Alpha Omega Epsilon, the nation’s oldest engineering sorority. She has been a co-op student for four semesters with Rexnord Industries.

Katy Reynolds is a senior in industrial and systems engineering from Hoover and an active member of the Society of Women Engineers, the American Red Cross club and the Auburn Hyperloop team. She also helps tutor student-athletes through the Tiger Tutor program. She has made the Dean’s List six times and received numerous scholarships. She has been a co-op student on the continuous improvement team at Eberspächer Exhaust Technology in Tuscolaosa. Reynolds has also interned with Michelin North America’s industrial and systems engineering department in Tuscolaosa and with Ford Motor Co.’s purchasing department in Dearborn, Michigan.

2016–2017 Tim Cook Leadership Scholars

Founded by Apple CEO and Auburn ISE alumus Tim Cook ’82, the Tim Cook Leadership Scholarship recognizes students with significant academic achievements, strong evidence of non-academic achievement and leadership as well as community involvement. The 2016-2017 Tim Cook Leadership Scholars are Kirsten Failing and Christian Lloyd.

Kirsten Failing is a senior from Madison double-majoring in industrial and systems engineering and applied mathematics with a minor in business. She is active in the Institute of Industrial and Systems Engineers, the Auburn SAE Baja team and Alpha Pi Mu, the industrial engineering honor society. She also competes with Auburn’s Sailing Club, serving as commodore for the club. She has been employed at the university as a peer-career adviser at the Career Center, a tutor at Study Partners and a competitive sports supervisor for Auburn Athletics. Outside of school, Failing has volunteered at the Huntsville Space and Rocket Center as an administrative assistant, as a mathematics tutor and with the Auburn Sailing Club at various community events. Failing completed a second internship this past summer at Lockhead Martin, where she worked with the automated processes division of the manufacturing plant.

Christian Lloyd is a senior in industrial and systems engineering from Franklin, Tennessee. She is a member of both Alpha Pi Mu, the industrial engineering honor society, and Tau Beta Pi, the engineering honor society, and has been named to the Samuel Ginn College of Engineering Dean’s List multiple times. She is also involved on-campus as a student recruiter, a member of the coed a capella choir MelAuDic and with Camp War Eagle and her sorority. In her senior year, Lloyd completed a co-op internship with Walt Disney World’s industrial engineering department.

Doctoral Degrees Conferred

Congratulations to the following students who received doctoral degrees during 2015 graduations. Faculty advisers are listed for each graduate.

Nancy Bissinger, Jorge Valenzuela
Masood Jabarnejad, Jorge Valenzuela
Yao-Te Tsai, Fadel Megahed
Thomas Sanders, John Evans
Yousif Abulhassan, Jerry Davis

2016 OutSTANDING ISE Students for 2016

Madison Rolling, junior in ISE, was elected Miss Auburn, the university’s student body in February. “In a major like engineering, you have to be prepared ahead of time and that’s something I am seeing is relevant with Miss Auburn as well,” Rolling said. “It’s an accomplishment that allows me to have a lot with efficiency, and I am now having to be very efficient with my time in this role, considering I am only given a year to serve.”

From left to right are Price De Sanctis, Rachel Buchanan, William Collins and Kirsten Failing.
Departmental Gifts May 2015 – April 2016

Mr. Rafael E. Alfonso '73
Mr. Justin Paul Allred '05
Mr. Patrick J. Almas '13
Mr. Marion C. Aquilino '66
Dr. Jeanine Ballinger
Benevity Causes
Mr. Allan Harry Bissinger '75
Dr. J. Temple Black
Mrs. Cynthia Louise Bliss '07
Mr. Donald H. Bravaldo Jr. '56
Mr. John W. Brodak
Mr. Howard Houston Burkart II '66
Mrs. LuAnn Sims Carpenter '11
Mr. Allen Crenshaw Chapman '79
Comer Foundation
Mr. Timothy Donald Cook '82
Mr. Charles S. Cowart '74
Mrs. Janet T. Crawford '85
Mr. David Linton Curry '61
Brig. Gen. Robert L. Davis '74
Dr. Nathan T. Dorris '04
Mr. Eric Ross Dudley '89
Ergonomic & Work
Measurement Solutions LLC
Mrs. Sharlene Reed Evans '86
Exxon Mobil Corporation,
Fidelity Charitable Gift Fund
Mr. Edward B. Fischer '67
Mrs. Deborah D. Flint '85
Mr. Frank R. Fryer '66
Mr. Richard F. Fullerton '55
Mr. Ronald L. Funderburg '62
Mr. Sam E. Gagliano Jr. '66
Mr. Richard G. Galloway '61
Mr. Richard M. Garwood '67
The Generosity Trust
Mr. Gary Ross Godfrey '86
Mr. Gary Wayne Gray '69
The Greater Kansas City
Community Foundation
Mr. Ruskin Clegg Green '91
Ms. Judith B. Griggs
Mr. William Foster Grimmitt '86
Mr. Gary Lee Hallen '75
Mr. Patrick D. Higginbotham '81
Mr. Stephen Garrard Hill '80
Mr. Keith F. Hornbuckle '80
Mr. Brian Howard Hunt '90
Mr. Lester Killebrew Sr. '68
The KPMG Foundation
Dr. Ellen Marie Kraft '97
Mr. William C. Lathem '76
Dr. Ying-Hsin Andrew Liou '84
Mr. Lawrence L. Lynch Jr. '72
Mr. Reuben C. Manasco Jr. '64
Mr. Charles F. Manfre '60
Material Handling Industry
Mr. Elmer McDaniel '52
Mr. Steven James McDonough '84
Mr. Kenneth Stefan Morar '13
Mr. J. C. Nelson
Mr. Kevin Andrew Partridge '87
Mr. Randle T. Payne Sr.
Mr. Hal N. Pennington '59
Mr. Andrew J. Powell Jr. '61
Mr. Charles Winfred Powell '60
Mr. Earl Ferman Pruitt Jr. '56
Dr. Mabon E. Pugh '62
Mr. Stephen Keenan Raby '13
Mr. David L. Rach '69
Mr. Howard Kirk Rainer '83
Mr. John H. Reaves '69
Mr. Roy A. Richardson '57
Mr. Primus Ridgeway Jr. '80
Mrs. Lindsey Burcham Riffel '10
Mr. Thomas F. Roney '68
Mr. Phil R. Rushing '65
Mrs. Sarah Perry Rutowski '14
Mr. Thomas D. Senkbeil '71
Mr. Stuart Chris Shirley '87
Dr. Charles Herbert Shivers '75
Dr. Jeffrey Scott Smith '86
Mr. Barrett B. Smith '68
Mr. Zeke Walter L. Smith '82
Southern Company
Services, Inc
Mrs. Susan Nolen Story '81
Dr. Sheng-Hsien Teng '89
Mr. James Eric Thompson '00
Mrs. Jessica Paige Tilson '14
Mr. Daniel Andrew Traynor '78
Mr. David Lee Vice '79
Mrs. Zeneida Vogt
Mr. Billy F. West '67
Mr. Clyde E. Wills Jr. '68
Mr. Douglas Jeffrey Wood '84