2013 ANNUAL REPORT

KANSAS STATE UNIVERSITY

INDUSTRIAL AND MANUFACTURING SYSTEMS ENGINEERING

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This is an exciting time to be part of the K-State IMSE department. This year the College of Engineering broke ground on a complex expansion. The additional space will help us meet the needs of our growing program which enrolled 216 undergraduate, 64 master's and 17 doctoral students this year. Proudly, we are operating at record highs due to the outstanding reputation we have earned as leaders within engineering education. View our impressive statistics for FY 2013 highlighted on page 2.

In this report, we have spotlighted a sample of our current research endeavors. Our studies are broadly categorized into three specialty areas — advanced manufacturing, operations research and production systems engineering. We are confident that under our faculty's direction and mentorship, K-State students who complete an IMSE program will be prepared for a variety of stimulating careers. More information about our department can be found at imse.ksu.edu.

Within these pages are evidence that we are on the brink of cutting-edge engineering discoveries. If you like what you see, contact me directly. We are always in search of the best and brightest to be part of our exciting future!

Regards,

Bradley A. Kramer

Bradley A. Kramer, Ph.D.
Professor and IMSE Department Head
Ike and Letty Evans Engineering Chair
Director, Advanced Manufacturing Institute

MISSION STATEMENT

We prepare students for successful, life long careers by providing leadership in industry and our profession through our research and educational programs.

Our educational objective is to teach graduates how to use modern engineering and scientific management tools to design, develop, implement, and improve integrated systems to produce goods and services in a professional and ethical manner.

DEPARTMENT STATISTICS

FISCAL YEAR 2013 - 2014

FACULTY & STUDENTS

Student enrollment continues to increase annualy.

Professor	Assoc Prof	Assist Prof
5	4	1

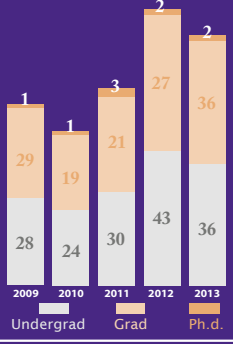
Undergrad	Grad	Ph.D.
216	64	17

STUDENTS ENROLLED

31% 69%

DEGREES GRANTED

By Fiscal Year



RESEARCH

31 — Journal Articles

19 — Refereed Conference Articles

3 — Book Chapters

FACULTY SERVICE

Leadership Positions
Committees, Conferences and Societies

5 — 47

Editorial Positions
Scholarly Journals

GRANTS\CONTRACTS

4.4 MM Total

$891,472 IMSE Faculty Grants

23 Supported Assistantships

$3,475,589 Advanced Man. Inst. Contracts

KANSAS STATE UNIVERSITY

Industrial and Manufacturing Systems Engineering

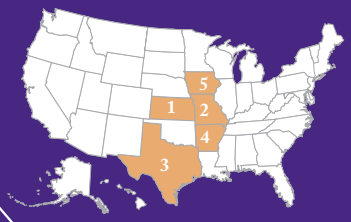
TOP 5 COMPANIES

Who Hired Our Grads (5YR AVG)

1. Deloitte
2. Cerner
3. ExxonMobil
4. J.B. Hunt
5. Lockheed Martin Pepsico/FritoLay

TOP 5 STATES

Where Grads Found Employment



AVERAGE STARTING SALARY

$60,104 Undergraduate

$74,159 Graduate

Advanced Manufacturing Institute

The mission of the Advanced Manufacturing Institute (AMI) is to promote technologies, people, and companies through collaborative engineering and business partnerships. The primary focus is to provide technical resources to established companies experiencing limitations preventing them from expanding and growing their operations. This technology development effort includes a range of activities from analyzing the business case for a project and conducting intellectual property assessments, to designing and testing new products and technologies across a wide range of industries. These efforts are headed up by a diverse group of industry-experienced, full-time staff who serve as project managers for all development efforts. Student interns from both the business and engineering colleges at K-State are also involved in projects, providing real-word experience while adding to their educational resume.

AMI occupies a 22,000-square-foot building located near the K-State campus. The facility is a combination of offices, engineering design labs and a fully equipped prototype shop where custom products can be designed and fabricated at a single location. Prototyping capabilities primarily focus on metal fabrication; however, the staff has extensive experience with design and equipment across a broad range of materials. Often times, concept designs can be rapidly prototyped in an effort to determine functionality.

AMI has a proven track record of component testing, custom equipment design and development, as well as working with clients to analyze business opportunities to see if development of a new technology makes financial sense. Experienced engineers work with clients to decide which intellectual property strategies to pursue and to identify development challenges that need to be overcome in order to ensure commercial success.

The organization is comprised of experienced engineers who possess expert knowledge and skill within a wide-range network of industries and technologies. AMI's projects are a collaborative effort to solve challenging customer-driven problems, with an emphasis on building long-term business relationships.

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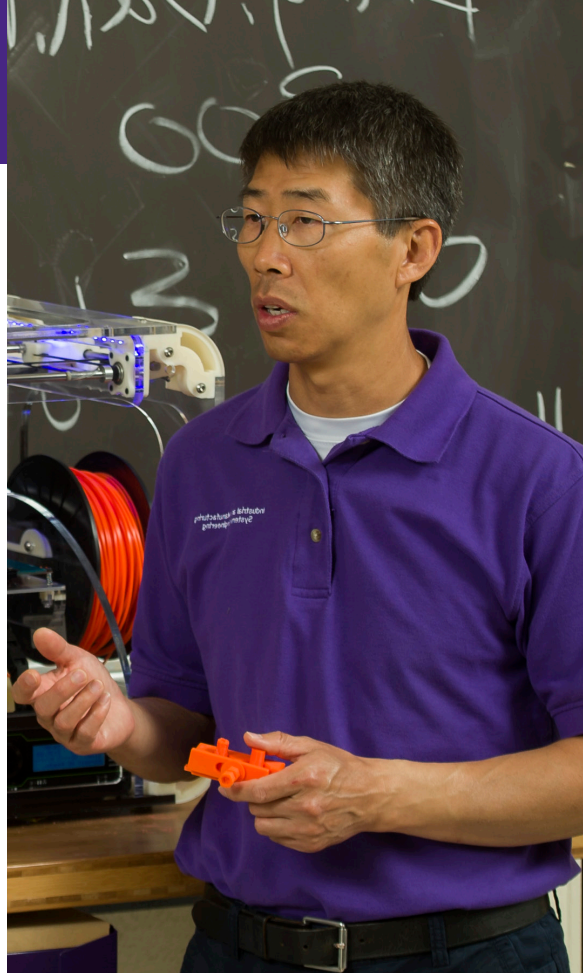
www.k-state.edu/ami

Shuting Lei, Professor

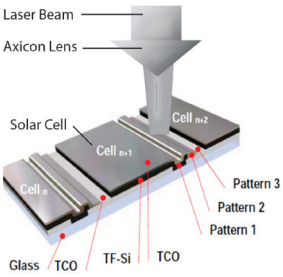
B.S., Tsinghua University, China; M.S., Tsinghua University, China; Ph.D., Purdue University



Today, consumers have access to cleaner, faster and more robust vehicles, products such as artificial organs and custom prosthetics to offer patients relief, and wearable fitness and touch-screen technologies are everyday norms. Products like these once existed only in sci-fi movies but now flood consumer markets around the world. What happened to cause this seemingly overnight technology boom? Credit in large part is due to advanced manufacturing researchers, such as Shuting Lei, who have paved the way for new-era technologies.

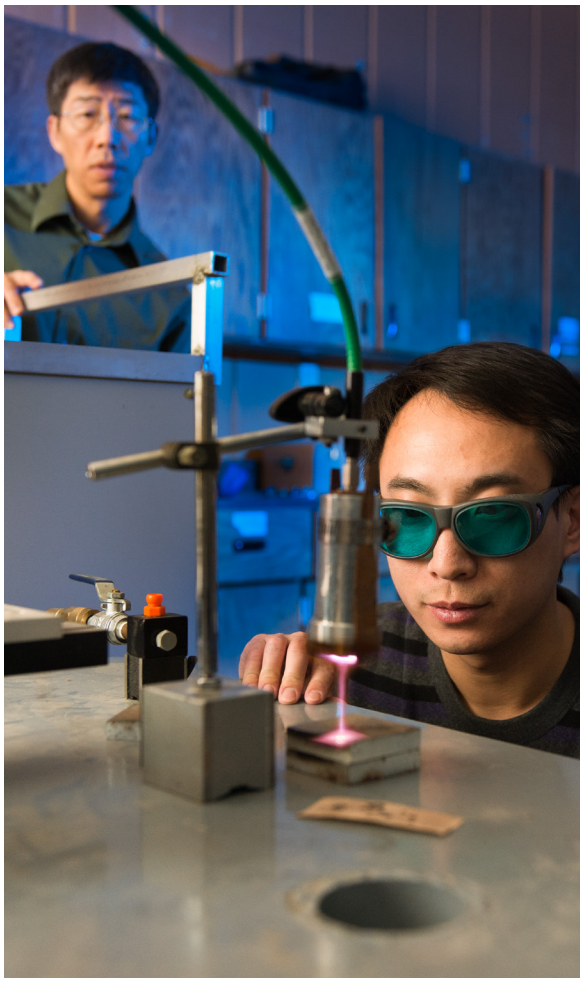
Here at K-State, Lei and his team specialize in difficult-to-machine materials such as superaolloys, glass and ceramics: think combustion chambers, touch screens and hip replacements. These materials are desirable to manufacturers because of their strength, durability and flexibility. Yet, their properties are extremely difficult to cut.

The femtosecond laser that Lei uses, however, is an industry game changer. Materials that once stressed and fractured under conventional tools, now cut with extreme precision and smoothness. This technique offers design capabilities previously inconceivable and has revolutionized manufacturing engineering. Lei's research is the road-map that will lead to future innovation.



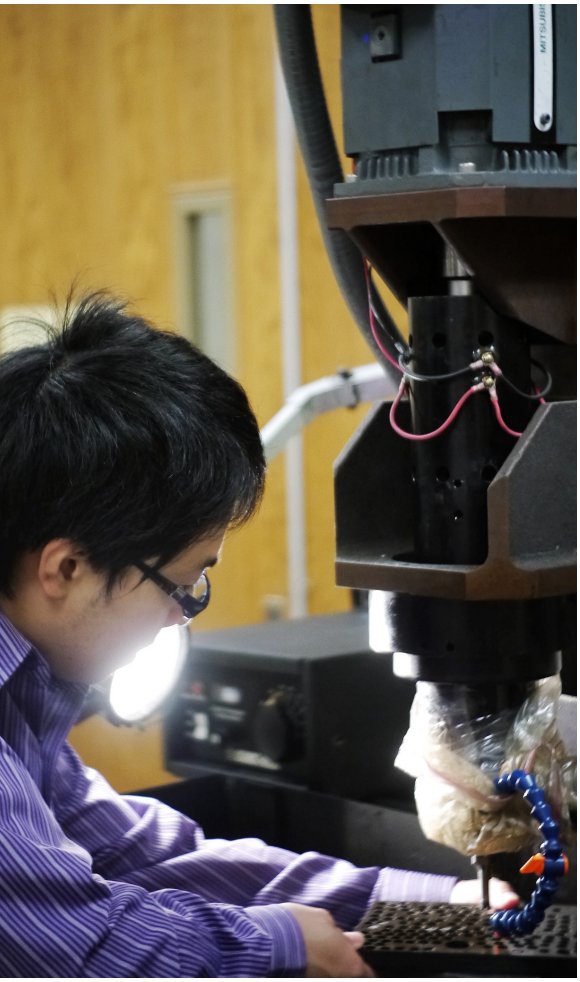
Femtosecond Laser Micro/Nano Machining

Lei uses laser micromachining to conduct experiments involving computer and numerical modeling to optimize manufacturing processes. Combining finite-elements analysis and distinct-element simulation, he is able to develop models that predict optimal operation conditions for micromachining.



Research Objective — Develop novel machining techniques and study laser-pulse interacthions.

1. Can a Femtosecond laser produce narrow scribes on solar thin films for all three patterning processes with high speed?
2. How do we generate high-quality micro/nano structures free of defects and heat-affected zones?
3. What are the fundamental mechanisms that govern FS laser-matter interactions?



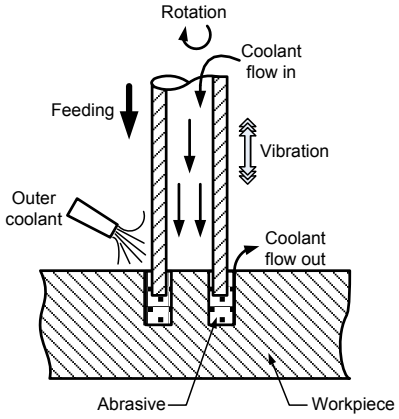
Zhijian (ZJ) Pei, Professor

B.S., Zhengzhou Institute of Technology, China; M.S., Beijing Institute of Technology, China; Ph.D., University of Illinois at Urbana-Champaign

Automated vehicles, eco-efficient aircrafts and Mars-bound rockets — these are the type of new-age innovations expected in the near future. All, however, are contingent on the sophisticated materials needed to take them from idea to reality. Manufacturing engineers around the globe are leading this force.

ZJ Pei is an internationally recognized trailblazer in manufacturing research. At K-State, he leads a team of graduate students on the verge of cutting-edge breakthroughs that will help expand new-age discoveries and revolutionize the manufacturing industry as we know it today. The primary focus is on abrasive machining. The team's findings have already supported innovative designs for national defense and other large-scale companies. Pei intends to use his research to change the future of machining and bring with it a host of potential engineering discoveries such as extension into renewable energy manufacturing.

Drilling of High-Performance Materials



Pei is highly noted for his research in rotary ultrasonic machining (RUM). He aims to develop new drilling methods for high-performance materials such as advanced ceramics, titanium, stainless steel and composites used to build parts for aircrafts, automobiles, ships, bridges and more. All are desirable materials, but are notorious for their poor machinability. Conventional drilling methods result in high-costs and low efficiency, which have limited their use. A better production process for these high-performance materials is a critical industry need.

Research Objective — Generate knowledge about RUM, and develop innovative and cost-effective materials drilling process.

1. Experimental investigations: effects of input variables on output variables.
2. Experiment with different methods and analyze results.
3. Develop physics-based predictive models for cutting forces and temperature.
4. Verify models by experimentation.

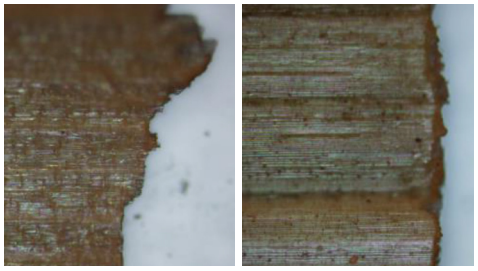
Timothy Deines, Instructor

B.S., Kansas State University

Timothy Deines has been educating undergraduate students on manufacturing and machining for 14 years. He plays an integral role in the IMSE department by connecting with students in and out of the classroom. An active member of the Institute of Industrial Engineers he also serves as adviser for the Society of Manufacturing Engineers. Deines' passion for the trade shines through in his ability to successfully recruit outstanding members for both local chapters. Through events and training opportunities, he has created an active community environment that inspires and supports students in preparation for future careers in manufacturing.

Equally impressive is his professional success. When not in the classroom, Deines works in collaboration with Professor Pei to research manufacturing processes, energy manufacturing, and composite manufacturing and machining.

Particle-Sized Reduction of Cellulosic Biomass For Biofuel Manufacturing



Hammer milling | Knife milling

Deines' current research focuses on particle-size reduction of cellulosic biomass, where he compares energy consumption, sugar and ethanol yields, and reduction methods to help make cellulosic biofuel manufacturing more cost effective. Before biomass can be converted into biofuel, it has to be reduced in size. The size reduction increases the surface area and bulk density. Reducing biomass in size takes one-third of the total energy needed to convert it into ethanol.

Research Objective — Find a method that makes cellulosic biofuel manufacturing more cost effective.

1. Investigate how particle-size reduction affects sugar and ethanol yields.
2. Compare different methods of particle-size reduction and their power consumption.
3. Determine the optimum method of particle reduction and size.

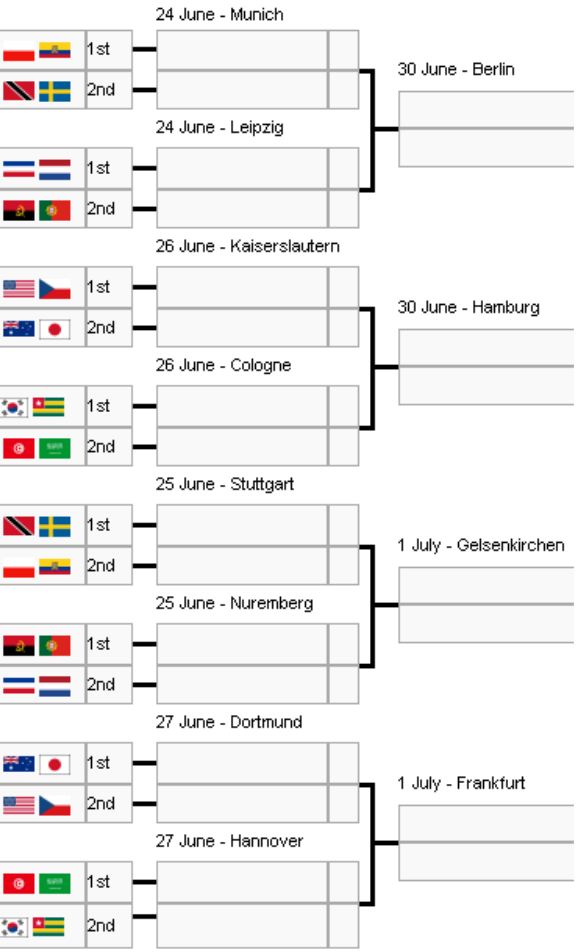
Todd Easton, Associate Professor

B.S., Brigham Young University; M.S., Stanford University; Ph.D., Georgia Institute of Technology

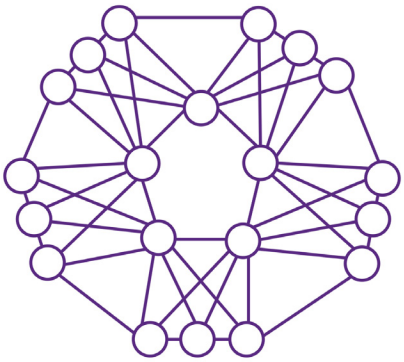
From sports scheduling to transporting goods, or portfolio optimization to cancer treatments, integer programs are used to create optimal solutions and policies. Companies, governments and society have all substantially benefited from integer programming solutions in their efforts to improve real-world policies.

Current methods are unfortunately limited in their ability to solve integer programs, even when the most advanced technology is used. In such scenarios, decision makers are left with suboptimal strategies, which can impair desired results.

Todd Easton specializes in discrete optimization with an emphasis in integer programming and graph theory. His current research aims to find novel techniques to solve integer programs, better facilitating industry leaders in making timely and accurate decisions.



Improving Solution Time of Integer Programs



By utilizing graphs and hypergraphs, Easton's research group has identified new methods to allow more integer programs to be solved.

These methods include creating new cutting planes, developing new branching procedures and generating polynomial time algorithms to lift variables.

Research Objective — Develop novel methods to improve the computational effort required to solve integer programs.

1. Develop novel cutting-plane methodologies.

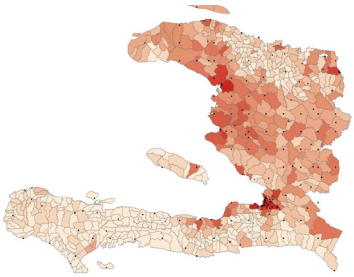
2. Create fast algorithms that improve solution time of integer programs.

Jessica Heier Stamm, Assistant Professor

B.S., Kansas State University; Ph.D., Georgia Institute of Technology

When disaster struck Haiti in 2010, chaos ensued. Immense challenges were faced by the hundreds of government, military, private and non-governmental organizations who rushed to offer support. The sheer number of responders, the urgency of the situation and the crippled infrastructure complicated response efforts. As a result, decision makers struggled to work with unreliable data that was subject to rapid change. The unpredictability of each scenario made it extremely difficult — if not impossible — to efficiently deliver supplies and medical care to those in need. Disasters highlight complications inherent in decentralized supply chains – those in which multiple stakeholders take actions that impact the overall system — but proactive supply chain engineering can help prevent inefficiency, redundancy and missed opportunities.

Optimizing Decentralized Humanitarian and Public Health Logistics Systems



A leader in her field, Jessica Heier Stamm uses operations research to understand and improve humanitarian and public health systems to avoid complications such as those that erupted in Haiti. Heier Stamm's research group uses advanced analytics to model complex logistics systems with multiple stakeholders. They have already found innovative ways to improve response systems and access to patient treatment facilities. Future work will explore mechanisms, such as incentives for agencies, that improve efficiency and effectiveness in decentralized decision environments.

Research Objective — Quantify impact of decentralized decision making on logistics system performance, and identify mechanisms that lead to optimal or near-optimal performance.

1. What modeling approaches are best suited for representing systems in which humanitarian agencies and/or beneficiaries make decisions in a decentralized way?
2. What solution techniques are required for these models?
3. What changes in logistics systems design or management can mitigate the impact of decentralization?
4. How can logistics systems be made more robust to uncertain conditions inherent in humanitarian context?

E. Stanley Lee, Professor

B.S., Chung-Cheng Institute of Technology, Taiwan; M.S., North Carolina State University; Ph.D., Princeton University

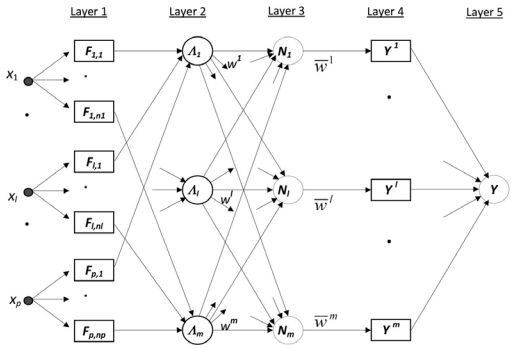
For 48 years, Stanley Lee has developed innovative ways to use operations research for solving various engineering and social problems. As an established researcher for Kansas State University, he has pioneered an array of projects ranging from alternative energy to water resource management. His techniques have been adopted and implemented by industry leaders across the globe.

Developing Expert Systems for Industrial Applications

One of Lee's current projects focuses on representation of complex manufacturing jobs. For instance, an expert responsible for control of the kiln for manufacturing of cement — while this person can perform this complicated job, he or she cannot concisely describe the procedure. This results, at best, in vague or very approximate information.

Lee's research aims to use modern computers to represent human language naturally. He does this through application of various soft computing techniques such as fuzzy logic and fuzzy set theory. To overcome the approximation of the description, he uses newly developed learning techniques such as neural network, support vector machines and various evolutionary approaches to update the model as data becomes available.

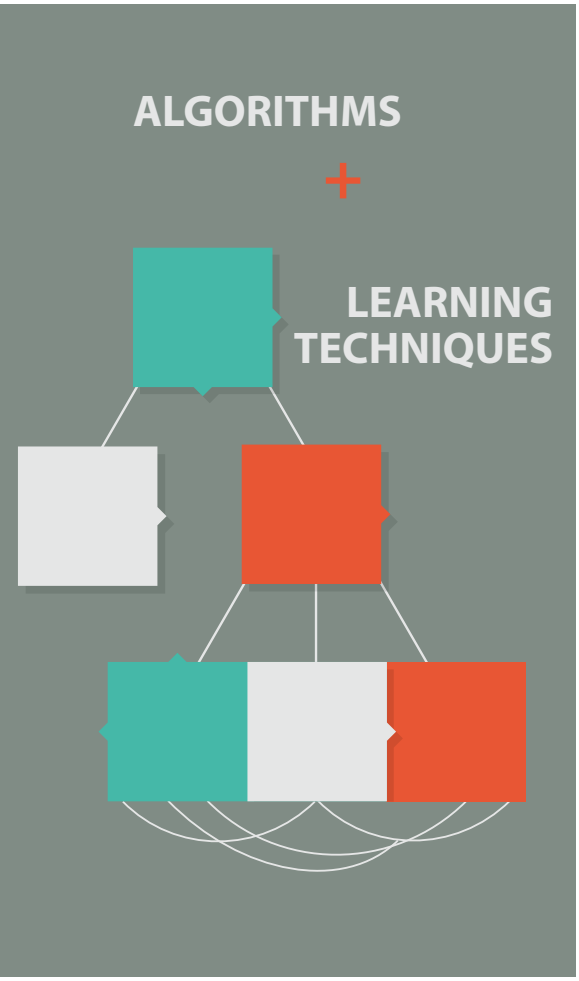
As a result, Lee has developed different algorithms by fusing soft computing with fuzzy logic/set theory to create the fuzzy adaptive network (FAN): modeled at right.



Research Objective —

Use computers to find algorithms that model human procedures performed by experts for delicate or very complex jobs.

1. What soft-computing-learning algorithms will best represent available data?
2. Can this technique be used to simplify hardware applications needed for current manufacturing systems?
3. Can use of fuzzy sets improve the representation of linguistic models?



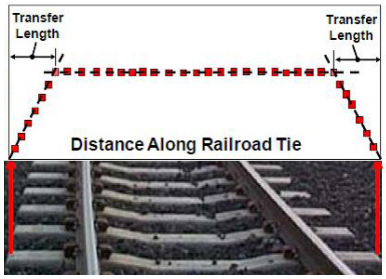
Chih-Hang (John) Wu, Associate Professor

B.S., National Cheng Kung University, Taiwan; M.S., Pennsylvania State University; Ph.D., Pennsylvania State University

When Japan introduced it's bullet train in the 1960s high-speed transportation exploded across the world. Today this is a multi-billion-dollar industry used by numerous countries for passenger travel and freight service. As demand for this technology continues to grow, so does the need for a better railroad design.

With approximately 3,000 ties per mile of railroad track in the U.S. Current design uses pre-stressed concrete, which is susceptible to breakage under high-speed pressure. When a tie breaks, it costs the government hundreds of thousands of dollars to repair. The rate at which these ties are currently breaking is cause for major concern.

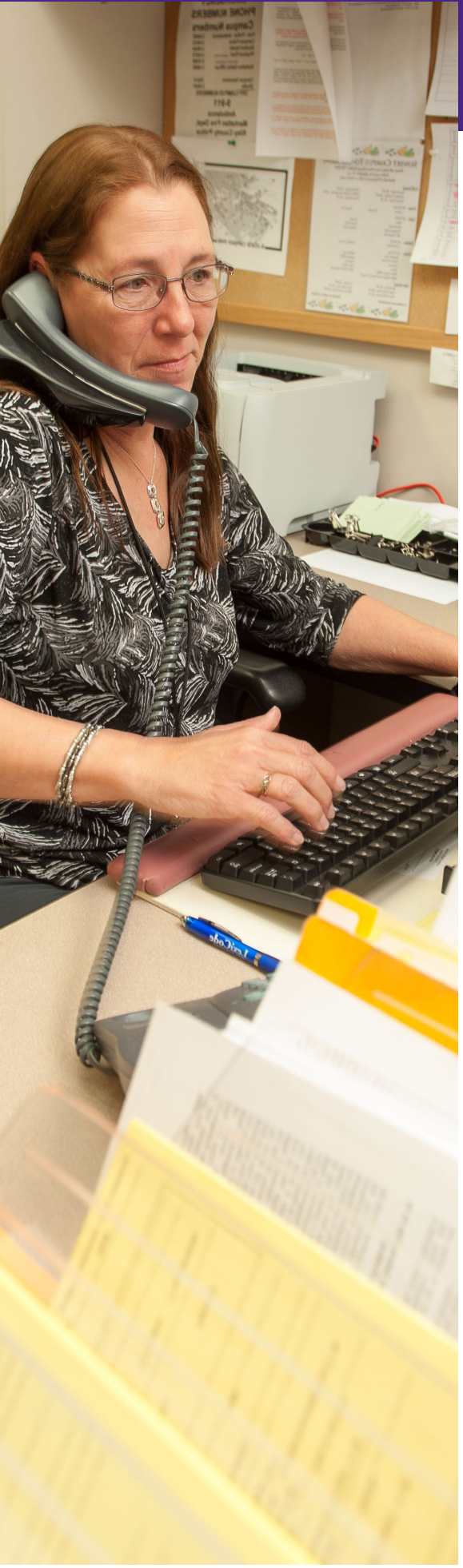
Research and Design of a Stronger Rail Tie Via Bulk Manufacturing



John Wu is one of four engineers contracted by the U.S. Department of Transportation/Federal Railroad Administration to research manufacturing of a stronger rail tie. Joining him are two researchers from the K-State College of Engineering: Robert Peterman, civil engineer and Terry Beck, mechanical and nuclear engineer. In the first phase of their research, Wu and his team developed a nondestructive testing method used to detect strength of the rail tie before it is sold and shipped. Today, this is a patented product used internationally. The team is currently working on phase two of the research project, which, if successful will save the U.S. billions of dollars over time.

Research Objective — Design an affordable rail tie that can withstand the pressure of high-speed transport and can be manufactured in bulk at an affordable price.

1. Wu is responsible for selecting the material and designing the shape of the bar.
2. Peterman is tasked to identify the concrete mix used to enclose the bar.
3. Beck tests the pre-stressed force based on the design created by Wu and Peterman.



Health Care Operations Resource Center

The Health Care Operations Resource Center (HCOR) is an extension of the IMSE program. David Ben-Arieh and John Wu developed the HCOR center to offer real solutions to industry problems. With support from students, they use their operations expertise to examine complex work systems within health care facilities. Through their research, they are able to design work environments that compliment providers' work flow needs. An in-depth analysis enables them to properly design work environments that result in optimized output and patient satisfaction.

A recent project was contracted to improve the work flow in an emergency department at an urban medical screening facility. A team of HCOR engineers analyzed work load, communication flow, activity time and distance traveled. Their data analysis resulted in a better design layout and improved process for the facility, which is successfully used today.

HCOR's advisory committee consists of executives, hospitals clinicians, rural providers, operation managers and process improvement leaders. Council members actively participate in continual assessment of the program's progress and development of industry partnerships.

Mission Statement

We will help health care providers to make better operational decisions, optimize their operation and maximize patient satisfaction, as well as quality of care. Our activities will help health care providers to become more competitive, and provide better care, faster and cheaper.

Dr. David Ben-Arieh, Director
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Dr. John Wu, Senior Solution Architect
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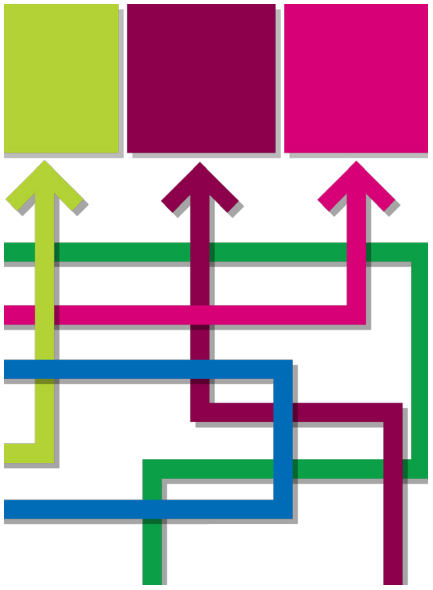


HCOR Center | 2016 Durland Hall Dept. of IMSE | Manhattan, KS 66506

David Ben-Arieh, Professor

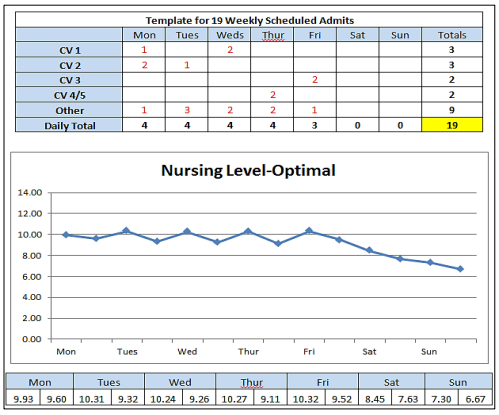
B.S., Ben-Gurion University, Israel; M.S., Ben-Gurion University; Ph.D., Purdue University

Challenging traditional methods, David Ben-Arieh has committed his life's work to improving systems that offer optimized solutions for industry professionals. A Kansas State University professor since 1990, he specializes in decision theory and operations research with a specific focus in health care delivery systems and product development.

A seasoned consultant in health care engineering, he witnessed first-hand the need for better technology, improved work conditions and access to better resources in traditional health care facilities.

Compelled to help, he launched the K-State Operations Research Center in 2008. With support from colleagues and students, Ben-Arieh uses techniques such as data envelopment analysis (DEA) modeling and information systems modeling to research and design improvements for complex work environments.

Case Study: ICU Surgery Scheduling

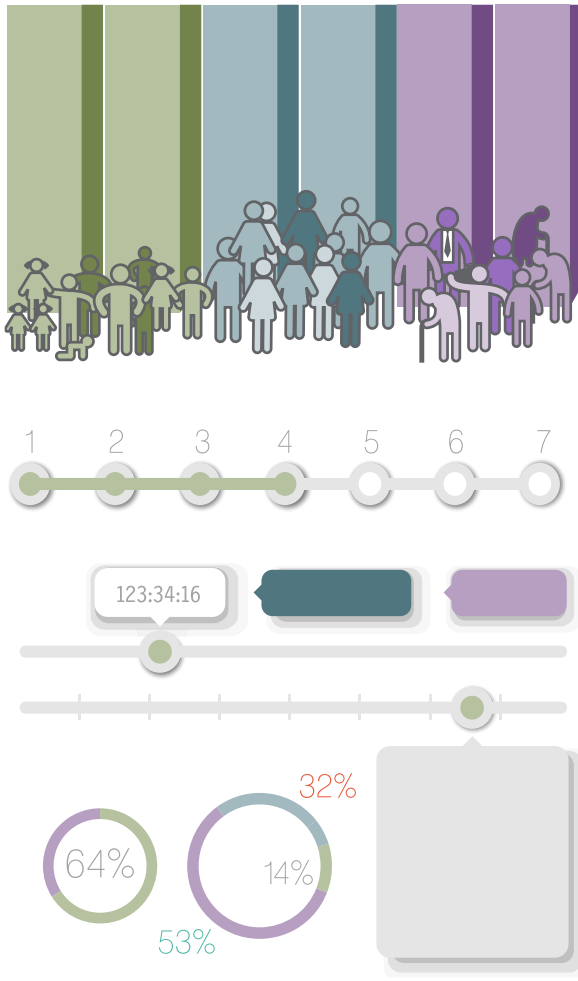


Template for 19 Weekly Scheduled Admits

	Mon	Tues	Weds	Thur	Fri	Sat	Sun	Totals
CV 1	1		2					3
CV 2	2	1						3
CV 3					2			2
CV 4/5				2				2
Other	1	3	2	2	1			9
Daily Total	4	4	4	4	3	0	0	19

Mon		Tues		Wed		Thur		Fri		Sat		Sun	
9.93	9.60	10.31	9.32	10.24	9.26	10.27	9.11	10.32	9.52	8.45	7.63	7.30	6.67

Recently, Ben-Arieh was recruited to help a local intensive care unit implement a quality control system to improve work flow. His research team is designing a system that will monitor real-time data capable of measuring nurse productivity in an effort to detect potential scheduling conflicts. This easily accessible data will help schedulers make wiser decisions when booking appointments, which will significantly minimize the number of canceled surgeries. A system like this will reduce costs and optimize output for the hospital as a whole.



Research Objective — Find a schedule consistent with nurse work flow to minimize canceled surgeries.

1. Incorporate data mining and analysis techniques to find patterns and bottlenecks.
2. Use mathematical optimization to build a predictive tool for the hospital to assist with scheduling.

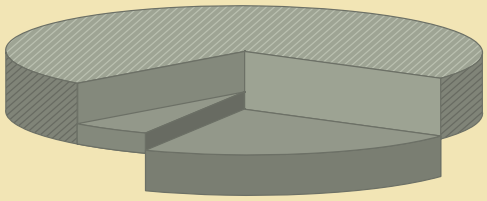
Shing I. Chang, Associate Professor

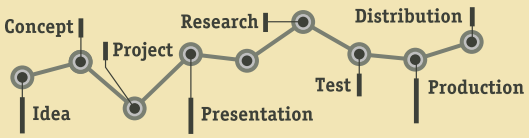
B.S., Tsing-Hua University, Taiwan; M.S., Arizona State University; Ph.D., Ohio State University

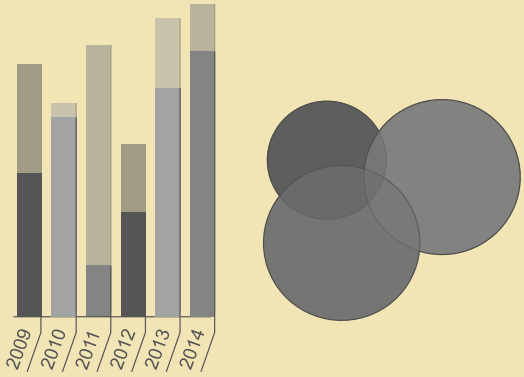
The evolution of computers and communication technology has brought with it a surge of powerful devices and gadgets capable of capturing data unlike never before. These raw, unorganized facts alone are useless. With the right system though, data can be effectively manipulated and managed to produce valuable information used by industry leaders to make accurate and timely decisions.

Oftentimes this data is so massive that it's difficult to process using traditional techniques. Inevitably, a new system will be required to keep pace with the digital age that promises explosive growth.

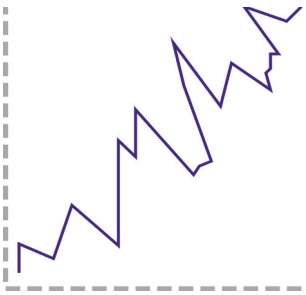
Shing Chang, a quality engineer, uses algorithms to turn raw data into relevant information. With more than 20 years' experience, his research has benefited various manufacturing, service and health care organizations by designing production systems that inspire more confident decision making.







Four Phases of Statistical Process Control: A Big Data Framework



Chang is currently researching an alternative method using a two-phase approach. Chang is testing a four-phase process aimed to improve quality control in modern production environments. His discoveries have the potential to expand SPC capabilities beyond current industry standards to improve operational effectiveness.

Research Objective — Develop a four-phase SPC process to better monitor quality control in modern production environments.

- **Phase 0:** Identify parameters for monitoring
- **Phases 1 and 2:** Monitor real-time large quantities of fast-flowing data
- **Phase 3:** Assess long-term process for quality assurance

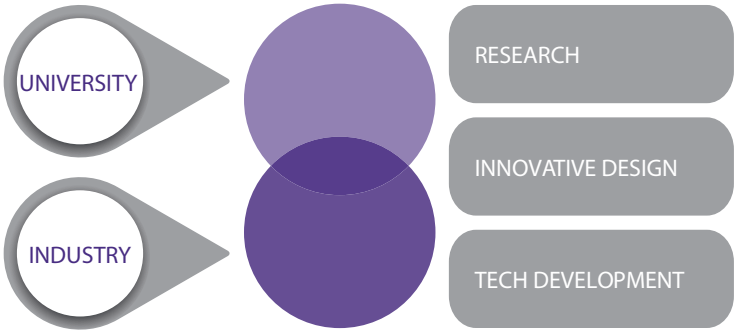
Bradley Kramer, Professor and Department Head

B.S., Kansas State University; M.S., Kansas State University; Ph.D., Kansas State University

Government and industrial leaders are calling for new investments in advanced manufacturing research. These leaders expect these investments to diversify our economy, develop new high-wage jobs, and provide a greater ability of our companies to produce new and better products. In short, to improve our manufacturing competitiveness.

A critical component of manufacturing competitiveness is the ability to develop new technologies and products. Brad Kramer leads the Advanced Manufacturing Institute in the pursuit of this goal as a team works collaboratively with industry and university partners to span the gap between basic research, discovery and invention — that is the traditional home of universities and innovation and commercialization — the main pursuit of business and industry.

Advanced Manufacturing Research for the Development of Innovative Ideas



Responsible for acquiring and managing contracts valued at more than $24M, Kramer has been principal or co-principal investigator on more than $11M in competitive grants, and principal investigator on more than $13M in competitive state agency funding to operate the Advanced Manufacturing Institute and its programs.

Research Objective — Develop collaborative university – industry projects to produce new products and technologies that enhance manufacturing competitiveness.

1. Develop better university innovation intermediary models and processes.
2. Leverage university resources to generate real regional economic impact.

Malgorzata Rys, Associate Professor

B.S./M.S., Technical University of Wroclaw, Poland; M.S., Kansas State University; Ph.D., Kansas State University

A cross-country road trip through Kansas consists mostly of open prairie, farm land and rolling hills scattered in between cities located several miles apart. Interstate 70 spans 424 miles and attracts upwards of 66,000 daily users in select areas. Although fairly straight, unpredictable scenarios such as automobile malfunctions, active wildlife and unruly weather are bound to happen. These types of accidents can pose serious danger to drivers on rural terrain, making it difficult for state officials to monitor. As a result, highway congestion and clean-up/clear-out is prolonged until emergency officials arrive.

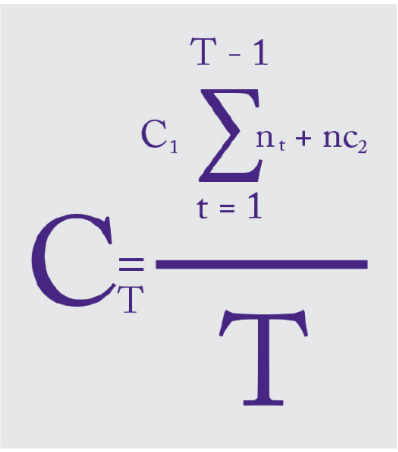
These are the type of real-world problems Malgorzata Rys aims to resolve. With more than 25 years' experience in human factors/ ergonomics engineering, Rys specializes in highway safety. Her desire to extend research outside of academia led to an early partnership with the Kansas Department of Transpiration (KDOT). More than 20 years later, she has successfully implemented more then 50 projects that vary from work-zone safety to highway sign visibility. In collaboration with her graduate students, Rys helps KDOT identify problems within local transportation infrastructures. Their research uses complex data analysis to design better systems that offer cost-effective, optimized solutions.

UVAs To Improve Cost, Efficiency and Safety

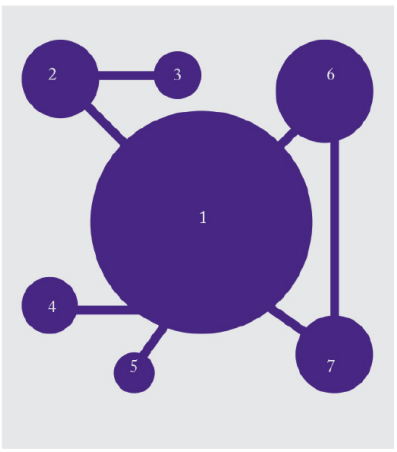
One of Rys' current projects focuses on implementation of unmanned aerial vehicles (UVA) to improve highway safety. Through a series of field tests, Rys and her students use UVAs to map high-risk environments and gather real-time data. This scientific information is used to develop efficient and effective solutions to problems that impair modern day roadways.

Research Objective — How government officials can best utilize UVAs to capture real-time data to reduce costs and enhance performance on large-scale highway safety projects.

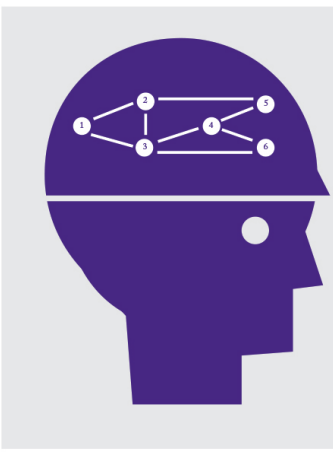
1. Develop a best practice, policies and procedures guide for use of UVAs on state roadways.
2. Field test UVAs for optimal usage in efficiency, safety and cost reduction.



M.S. OPERATIONS RESEARCH



M.S. INDUSTRIAL ENGINEERING



M.S. ENGINEERING MANAGEMENT

Ph.D. INDUSTRIAL ENGINEERING

Overview

The IMSE department is committed to excellence in scholarly research and graduate teaching. Graduate classes typically enroll 20 or fewer students each. Graduate students work directly with faculty members to conduct their research projects.

- The M.S. IE and Ph.D. IE program teaches students the mathematical, scientific and analysis skills to solve complex engineering business problems in manufacturing, health care, transportation, financial organizations, communications, government, military and many other organizations.
- The MSOR program focuses on the application of mathematical models to analyze complex problems and develop optimum solutions.
- The MEM program is geared toward management of engineering or highly technical organizations.

We recruit the best and brightest graduate students to join our research teams. Interested students are highly encouraged to contact any member of our faculty or staff to learn about the exciting opportunities that K-State IMSE has to offer.

Funded research assistantships available

imse.ksu.edu | LinkedIn

Ltg. Robert Caslen, '89 M.S. IE

Superintendent of the U.S. Academy West Point

"The K-State IE operations research and systems analysis program brought me to levels intellectually that I never thought possible."

Anita Ranhotra, B.S. IE '94 MEM '01

Product Integrity Process Improvement Manager, Hallmark Cards

"I wanted a degree that would set me apart. Years later, my professional accomplishments have far exceeded my wildest expectations."






Overview

Our department emphasizes teamwork and group projects in the learning experience to help students develop the skills necessary for success in today's work environment. Our senior design course gives students the opportunity to work on a real-world problem for an organization. In Manufacturing Systems Design and Analysis (MSDA), students create and run their own business. This experience spans all aspects of the enterprise from product design and production, to marketing, sales and distribution.

Students have 15 hours of professional and industrial engineering electives that enable them to focus their education into areas of interest. Students may choose an area of specialization in engineering management, ergonomics, manufacturing engineering or operations research. Additionally, high-performing students can earn their bachelor's and master's degrees concurrently. These graduates typically complete both degrees in about one calendar year beyond the time it would take to complete the bachelor's alone.

Clubs

Institute of Industrial Engineers (IIE)
Society of Manufacturing Engineers (SME)

Each group hosts a number of academic and social events for members. Activities include workshops, regional and national conferences, open house displays, student/faculty picnics and intramurals.

Andrew Waldman, B.S.M.S IE '14

Minor in Business and Leadership Studies, Shawnee, Kansas

Waldman participated as a K-State student ambassador, the president of Beta Theta Pi fraternity, a member of Blue Key Senior Honorary, Student Alumni Board, Student Foundation, K-State Singers and new student services. He will work for Deloitte Consulting in Kansas City.

"In addition to the incredible opportunities I have had through leadership activities, my life has most been changed by the friends I've made," Waldman said. "In all of my experiences, I have been surrounded by people who continuously challenge me to do better and be better, and I have no doubt these relationships will last well beyond college."

About Manhattan

Manhattan, known as the "Little Apple," is located in the heart of northeast Kansas' scenic Flint Hills, 120 miles west of Kansas City. The city's fantastic dining, entertainment and recreational activities, convenient regional airport, and safe and friendly small-town feel make Manhattan a great place to live and study. Among its many attractions are the Aggeville district, the annual Country Stampede music festival and the Flint Hills Discovery Center. As the regional hub for a three-county area, Manhattan serves a population of 200,000, including Ft. Riley, home to the United States Army's Big Red One.

About Kansas State University

Kansas State University is one of the best schools in the country, according the Princeton Review which placed K-State among "The Best 378 Colleges" in 2014. More than 23,000 students from all 50 states and more than 90 countries call themselves Wildcats. The university offers more than 250 undergraduate degrees, a comprehensive graduate program in multiple disciplines across campus, and a variety of ways for students to get involved through organizations and club sports.

Founded in 1863, K-State was one of America's first land-grant colleges. The university is now working to become a top 50 public research university by 2025. K-State ranks first nationally among state universities in its total of Rhodes, Marshall, Truman, Goldwater and Udall scholars in the last 25 years, earning K-State a place among the nation's elite universities. K-State is a NCAA Division one school in the Big 12 Conference.

K-State is a great place for students to live, learn and grow. More than $200 million in scholarships, grants, loans and work study is distributed each year. Our Career and Employment Services can help you land a job or apply for graduate school once you graduate. K-State is recognized for its safe campus, and with more than 475 student clubs and organizations, there's something for everyone. What's more, students love it here! Ninety-seven percent of recent graduates surveyed would recommend K-State to a friend.

Peer-Reviewed Journal Publications

Nageshwaraniyer S.S., Khilwani N., Tiwari, M.K., Shankar R., and **Ben-Arieh D.**, 2013, "Solving the design of distributed layout problem using forecast windows: a hybrid algorithm approach", Robotics and Computer Integrated Manufacturing, vol. 29, 128-138.

Bian, Q., Yu, Y., Zhao, B., Chang, Z., and **Lei, S.**, 2013, "Femtosecond laser ablation of indium tin-oxide narrow grooves for thin film solar cells," Optics & Laser Technology, 45, 395–401.

Chou, S-H; **Chang, S. I.**; Tsai, T-R (2013) "On Monitoring of Multiple Non-linear Profiles," International Journal of Production Research, published online.

Cong, W.L., **Pei, Z.J., Deines, T.W.**, Liu, D.F., and Treadwell, C., 2013, "Rotary ultrasonic machining of CFRP/Ti stacks using variable feedrate," Composites Part B: Engineering, Vol. 52, pp. 303-310. http://dx.doi.org/10.1016/j.compositesb.2013.04.022.

Cong, W.L., **Pei, Z.J., Deines, T.W.**, Zhang, P.F., and Treadwell, C., 2013, "Surface roughness in rotary ultrasonic machining: hypotheses and their testing via experiments and simulations," International Journal of Manufacturing Research, Vol. 8, No. 4, pp. 378-393.

Cong, W.L., Zou, X.T., **Deines, T.W.**, Wu, N., Wang, X.W., **Pei, Z.J.**, 2013, "Rotary ultrasonic machining of CFRP composites: an experimental study on cutting temperature," Journal of Reinforced Plastics and Composites. DOI: 10.1177/0731684412464913.

D. Karkle, **M.J. Rys** and E. Russell, "Safety Effectiveness of Centerline Rumble Strips in Kansas," Journal of Transportation Safety and Security, 5:1, 1-26, 2013.

Fan, K.Q., Zhang, P.F., and **Pei, Z.J.**, 2013, "An assessment model for collecting and transporting cellulosic biomass," Renewable Energy, Vol. 50, pp. 786-794.

Guthy, C.J., Zou, X.T., **Pei, Z.J.**, and Wang, X.W., 2013, "A review of temperature measurement methods for twist drilling processes," International Journal of Machining and Machinability of Materials. Vol. 13, No. 4, pp. 372–339.

Kulkarni, S.S., Yong, Y., **Rys, M.J.**, and **Lei, S.**, 2013, "Machining Assessment of Nano-crystalline Hydroxyapatite Bio-ceramic," Journal of Manufacturing Processes, Vol. 15, pp. 666–672.

Lee, E. S., "Soft computing and learning techniques in the modeling of humanistic systems," International Journal of Artificial Life Research, Volume 3, 2013.

Lee, E.S. and J. D. Shen, "Fuzzy similarity kernel for support vector classification," International Journal of Articial Life Research, Volume 3, 2013

Lian, Y., Deng, J., Xing, Y., **Lei, S.**, Yu, X., 2013, "Periodic and uniform nanogratings formed on cemented carbide by femtosecond laser scanning," Applied Surface Science, Vol. 282, pp. 518-524.

Liu, L., N. Klocke, S. Yang, D. Rogers, A. Schlegel, F. Lamm, **S. I Chang**, D. Wang (2013) "Impact of Deficity Irrigation on Maize Physical and Chemical Properties and Ethanol Yield," Cereal Chemistry, published online.

Ma, J., Ge, X., and **Lei, S.**, 2013, "Energy Efficiency in Thermally Assisted Machining of Titanium Alloy: A Numerical Study," Journal of Manufacturing Science and Engineering, Vol. 135, No. 6, 061001.

Ma, J., Pelate, N., and **Lei, S.**, 2013, "3D numerical investigation of thermally assisted high-efficiency ductile machining of nanocrystalline hydroxyapatite," Journal of Manufacturing Processes, Vol. 15, pp. 586-592.

Ma, J., Pelate, N., and **Lei, S.**, 2013, "Thermally assisted, high-efficiency ductile machining of nanocrystalline hydroxyapatite: A numerical study," Ceramics International, Vol. 39, pp. 9377-9384.

Mark Haynes, Levi DeLissa, **Chih-Hang John Wu**, B. Terry Beck, and Robert J. Peterman, " Design of a Non-Contact Surface Profilometry System for Automated Geometrical Dimensioning and Tolerancing," International Journal of Engineering Inventions 2013 e-ISSN2278-7461, p-ISSN: 2319-6491, Vol. 3, Issue 2, Sep. 2013, PP: 15-19.

Matthew L. Arnold, Robert J. Peterman, Naga Narendra B. Bodapati, B. Terry Beck, **Chih-Hang John Wu**, "Development of a Standard Test to Assess the Bond of Indented Prestressing Steel Wires," PCI Journal, 2013.

S. Ahern and **M. Rys**, "Evaluation of Dental Scalers," Industrial and Systems Engineering Review (ISER), Vol. 1, No. 1, pp. 40-50, http://watsonojs.binghamton.edu/index.php/iser/article/view/6, ISSN:2329-0188, 2013.

Song, X.X., Zhang, M., **Deines, T.W.**, Zhang, P.F., and **Pei, Z.J.**, 2013, "Energy consumption study in ultrasonic vibration-assisted pelleting of wheat straw for cellulosic biofuel manufacturing," International Journal of Manufacturing Research, Vol. 8, No. 2, pp. 135-149.

Song, X.X., Zhang, M., **Pei, Z.J.**, and Wang, D.H., 2013, "Effects of ultrasonic vibration-assisted pelleting of cellulosic biomass on sugar yield for biofuel manufacturing," Biomass Conversion and Biorefinery, Vol. 3, No. 3, pp. 231-238. DOI: 10.1007/s13399-013-0078-2.

Wang, Q.G., Gao, H., **Pei, Z.J.**, Guo, D.M., and Teng, X.J., 2013, "An experimental investigation on slicing of potassium dihydrogen phosphate (KDP) crystal," Journal of Engineering Manufacture (Proceedings of the Institution of Mechanical Engineers, Part B), Vol. 227, No. 6, pp. 890-897.

Yu, X., Bian, Q., Chang, C., Corkum, P.B., and **Lei, S.**, 2013, "Femtosecond laser nanomachining initiated by ultraviolet multiphoton ionization," Optics Express, Vol. 21, No. 20, pp. 24185-24190.

Yu, Y., Bian, Q., Zhao, B., Chang, Z., Corkum, P.B., and **Lei, S.**, 2013, "Near-infrared femtosecond laser machining initiated by ultraviolet multiphoton ionization," Applied Physics Letters, 102 (10), pp. 101111/4.

Zhang, M., Song, X.X., Zhang, P.F., **Pei, Z.J.**, Deines, T.W., and Wang, D.H., 2013, "Size reduction of cellulosic biomass in biofuel manufacturing: separating the confounding effects of particle size and biomass crystallinity," Journal of Manufacturing Science and Engineering, Vol. 135, No. 2, 021006 (5 pages), DOI: 10.1115/1.4023378.

Zhang, P.F., Zhang, Q., **Pei, Z.J.**, and Wang, D.H., 2013, "Cost estimates of cellulosic ethanol production: a review," Journal of Manufacturing Science and Engineering, Vol. 135, No. 2, 021005 (12 pages), DOI: 10.1115/1.4023377.

Zhang, Q., Zhang, P.F., **Pei, Z.J.**, and Wang, D.H., 2013, "Effects of cellulosic biomass particle size on enzymatic hydrolysis sugar yield: analysis of inconsistent results in the literature," Renewable Energy, Vol. 60, pp. 127 – 136.

Zhang, Q., Zhang, P.F., **Pei, Z.J.**, and Wang, D.H., 2013, "Ultrasonic vibration-assisted pelleting for cellulosic biofuel manufacturing: investigation on power consumption," Renewable Energy, Vol. 55, pp. 175-781.

Zhao, W., Murphy, R., Peterman, R., Beck, B., **John Wu**, C., and Duong, P. (2013). "Noncontact Inspection Method to Determine the Transfer Length in Pretensioned Concrete Railroad Ties," Journal of Engineering Mechanics 139, 256–263.

Zou, X.T., Cong, W.L., Wu, N., Tian, Y., Wang, H.F., **Pei, Z.J.**, and Wang, X.W., 2013, "Cutting temperature in rotary ultrasonic machining of titanium: experimental study using novel Fabry-Perot fiber optic sensors," International Journal of Manufacturing Research, Vol. 8, No. 3, pp. 250-261.

Refereed Conference Publications

Joseph R. Holste, Robert J. Peterman, Naga N.B. Bodapati, B.Terry Beck, and **C.-H. John Wu**, "Transfer Bond Test User to Predict Transfer Length of Concrete Railroad Ties," Proceedings of the 2013 ASME Rail Transportation Division Fall Technical Conference, RTDF2013-4726 October 15-17, 2013, Altoona, Pennsulvania, USA.

Ma, J., Duong, H., Lian, Y., and **Lei, S.**, 2013, "Assessment of Microgrooved Cutting Tool in Dry Machining of AISI 1045 Steel: A Numerical Study," ASME 2013 International Mechanical Engineering Congress & Exposition, November 13-21, 2013, San Diego, CA.

Ma, J., Ge, X., and **Lei, S**., 2013, "Energy Efficiency in Thermally Assisted Machining of Titanium Alloy: A Numerical Study," Proceedings of The ASME 2013 International Manufacturing Science and Engineering Conference, June 10-14, 2012, Madison, Wisconsin, 7p.

Ma, J., Pelate, N., and **Lei, S.**, 2013, "Thermally Assisted, High-Efficiency Ductile Machining of Brittle Materials: A Numerical Study," The 41st North American Manufacturing Research Conference (NAMRC 41), June 10-14, 2013, Madison, Wisconsin.

Mark Haynes, **Chih-Hang John Wu**, B. Terry Beck, and Robert J. Peterman, "3D Non-Contact Profilometry for Reinforcement Steel Quality Control," Proceedings of the 2013 Industrial and Systems Engineering Research Conference, May18-22, 2013, San Juan, Puerto Rico.

Mark Haynes, **John C.-H. Wu**, B. Terry Beck, Naga N.B. Bodapati, and Robert J. Peterman " Prestressing Steel Reinforcement Wire Bond Index Number" Proceedings of the 2013 Joint Rail Conference, JRC2013-2422 April 15-18, 2013, Knoxville, Tennessee, USA. DOI: 10.1115/JRC2013-2422.

Mark Haynes, **John C.-H. Wu**, B. Terry Beck, Naga N.B. Bodapati, and Robert J. Peterman, "Automated Real-Time Search and Analysis Algorithms for a Non-Contact 3D Profiling System, " Proceedings of the 2013 SPIE Optical Metrology, May 13-16, 2013, Munich, Germany.

Matthew L. Arnold, Robert J. Peterman , Naga N.B. Bodapati, B. Terry Beck, and **John C.-H. Wu** "Development of a Standard Bond Test for Indented Prestressing Wires ," Proceedings of the 2013 Joint Rail Conference, JRC2013-2461 April 15-18, 2013, Knoxville, Tennessee, USA. doi: 10.1115/JRC2013-2461.

Naga Bodapati, R.J. Peterman, W. Zhao, T. Beck, **C.-H. Wu**, J. Holste, M. Arnold, R. Benteman, and R. Schweiger, "Transfer-Length Measurements on Concrete Railroad Ties Fabricated with 15 Different Prestressing Reinforcements," 2013 PCI Convention and National Bridge Conference, Sept. 21 – 24 , Gaylord Texan Resort in Grapevine, Texas.

Naga N.B. Bodapati, Weixin Zhao, Robert J. Peterman , **John C.-H. Wu**, B. Terry Beck, Mark Haynes, and Joseph R. Holste, "Influence of Indented Wire Geometry And Concrete Parameters on the Transfer Length in Prestressed Concrete Crossties," Proceedings of the 2013 Joint Rail Conference, JRC2013-2463 April 15-18, 2013, Knoxville, Tennessee, USA. doi: 10.1115/JRC2013-2463.

Weixin Zhao, B. Terry Beck, Robert J. Peterman, and **John C.-H. Wu**, "Development of a 5-Camera Transfer Length Measurement System for Real-Time Monitoring of Railroad Crosstie Production," Proceedings of the 2013 Joint Rail Conference, JRC2013-2468 April 15-18, 2013, Knoxville, Tennessee, USA. doi: 10.1115/JRC2013-2468.

Weixin Zhao, B. Terry Beck, Robert J. Peterman, **John C.-H. Wu**, Grace Lee, and Naga N.B. Bodapati, "Determining Transfer Length in Pre-Tensioned Concrete Railroad Ties: Is a New Evaluation Method Needed?" Proceedings of the 2013 ASME Rail Transportation Division Fall Technical Conference, RTDF2013-4727 October 15-17, 2013, Altoona,

Pennsulvania, USA.
Weixin Zhao, B. Terry Beck, Robert J. Peterman, Robert Murphy, **John C.-H. Wu**, and Grace Lee, "A Direct Comparison of the Traditional Method and a New Approach in Determining 220 Transfer Lengths in Prestressed Concrete Railroad Ties," Proceedings of the 2013 Joint Rail Conference, JRC2013-2469 April 15-18, 2013, Knoxville, Tennessee, USA. doi: 10.1115/JRC2013-2469.

Zhang, Q., P.F. Zhang, **S.I. Chang**, and **Z. J. Pei** (2013), "Application of Multiple Response Surface Methodology for Optimization of Cellulosic Ethanol Manufacturing by Ultrasonic Vibration-Assisted Pelleting," Proceedings of the ASME 2013 International Manufacturing Science and Engineering Conference, June 10-14, 2013, Madison, Wisconsin.

Grants

"2013 CAREER Proposal Writing Workshop," National Science Foundation, $20,970, **Bradley Kramer**, Oct. 1 – Sept. 2013.

"A Review of KDOT Overhead Guide Sign Lighting Policy," Kansas Department of Transportation, $44,500, **Malgorzata Rys**, Nov. 2010 – Dec. 2013.

"A Study to Mitigate Rural and Urban High-Speed Horizontal Curve Crashes in Kansas," Kansas Department of Transportation, $39,500, **Malgorzata Rys**, Aug. 2012 – Aug. 2014.

"BRIGE: Understanding and Managing Humanitarian Logistics Systems through Advances in Optimization and Game Theory," National Science Foundation, $174,998, **Jessica Heier Stamm** Sep. 2012 – Aug. 2015.

"CNH: Coupled Climate, Cultivation and Culture in the Great Plains: Understanding Water Supply and Water Quality in a Fragile Landscape." National Science Foundation. $1,450,000 (Heier Stamm share: $126,379). September 2013 – August 2016. PI: M. D. Daniels (Stroud Water Research Center); Co-PIs: J. Bergtold, M. M. Caldas, M. E. Mather, A. Sheshukov; Senior Personnel: D. Haukos, J. L. Heier Stamm; former co-PIs: J. A. Aistrup (Auburn University), K. M. Douglas-Mankin (U.S. Fish and Wildlife Service).

"Creating Distance Learning Lean Training Exercise," U.S. Department of Veterans Affairs, $65,398, **Kimberly Douglas-Mankin** with **David Ben-Arieh** and **Shing Chang**, Sept. 2012 – June 2013.

"Defect-Free and Robust Mocrostructuring Using Femtosecond Axicon-lens-focused Beam (FAB) with Application Focus in Thin-Film Solar-Cell Manufacturing," National Science Foundation, $293,442, **Shuting Lei**, Sept. 2011 – Aug. 2015.

"Development of a Sophomore-Level Course 'Introduction of Renewable Energy Manufacturing' and Faculty Expertise," National Science Foundation, $88,412, **Bradley Kramer** with **Timothy Deines**, Feb. 2013 – Jan. 2015.

"Enhancing Our Virtual Learning Environment," U.S. Department of Veterans Affairs, $68,577, **Shing Chang** with **David Ben-Arieh** and **Malgorzata Rys**, Sept. 2013 – Dec. 2014.

"Enhancing the Economic Viability of Camelina as a Bio-Feedstock: Optimization and Demonstration of the Production System and Bioproduct Development," U.S. Department of Agriculture, $205,000, **Shing Chang**, Sept. 2012 – Aug. 2015.

"Experimental Testing of the Phosphorus Removal Potential from Ethanol Thin Sallage Using the Pilot-Scale PHRED System," U.S. Department of Agriculture, $22,100, **Taylor Jones**, July 2012 – July 2013.

"FEM Simulation of the Dynamic Heating Process in Laser-Assisted Machining," U.S. Department of Defense, $15,000, **Shuting Lei**, May – Dec. 2013.

"Fundamental Research on Titanium Drilling with Rotary Ultrasonic Machining," National Science Foundation,

$335,363, **Bradley Kramer**, Oct. 2011 – June 2015.

"Great Plains Industrial Park Business Development Support P11-0040," Great Plains Development Authority, $120,000, **Bradley Kramer** with **Jeffrey Tucker,** Aug. 2010 – July 2013.
"Improving Process Flow at the Mercy ED," Mercy Regional Health Center, Inc., $7,638, **David Ben-Arieh** with **Chih-Hang Wu**, Nov. 2012 – May 2013.

"Installation and Testing of Modification for Large-Scale Phosphorus Reduction System (PHRED)," Kansas Livestock Foundation, $18,500, **Taylor Jones**, July 2012 – July 2013.

"Kansas Bioprocessing Science and Engineering Center," National Science Foundation, $479,973.60, **Brad Kramer** with **Ronald Madl**, March 2010 – Aug. 2014.

"Kansas Department of Commerce University Center FY13 Core Grant," Kansas Department of Commerce, $203,710, **Brad Kramer**, July 2012 – June 2013.

"Kansas State University Olathe Innovation Accelerator University Center," Kansas State University Olathe, $120,000, **Jeffrey Tucker** with **Bradley Kramer** and **Bret Lanz**, Aug. 2013 – Sept. 2014.

"Kansas State University Olathe Innovation Accelerator University Center Program Grant," US Department of Commerce, $250,000, **Jeffrey Tucker** with **Bradley Kramer** and **Bret Lanz**, Aug. 2013 – Aug. 2014.

"KDOC Innovation Growth Program," Kansas Department of Commerce, $150,000, **Jeffrey Tucker**, July 2013 – June 2015.

"KSU University Transportation Center: The Sustainability and Safety of Rural Transportation Systems and Infrastructures," U.S. Department of Transportation, $30,110, **Malgorzata Rys**, Feb. 2007 – June 2013.

"Modeling Core Processes at Mercy Regional Manhattan and Wamego Campuses," Via Christi Regional Medical Center, Inc., $96,017, **David Ben-Arieh**, March – Dec. 2013.

"National Science Foundation – Intergovernmental Personnel Act." National Science Foundation, $773,867, **Zhijian Pei**, Aug. 2012 – Aug. 2015.
"Optimizing Energy Planning for Navajo Nation Oil and Gas Company," Navajo Nation Oil and Gas Company, $45,000, **Todd Easton**, Jan – Dec. 2013.

"Part-Time M.S. Program in Industrial Engineering," U.S. Department of Defense, $53,668.63, **Todd Easton**, Jan. – May 2013.

"PFI: Kansas Bioprocessing Science and Engineering Center," Kansas Board of Regents, $97,084, **Bradley Kramer**, March 2010 – March 2013.

"Phase I-Evaluate Potential for Phosphate Recovery from Ethanol Plant Byproduct Stream through Bobierrite Precipitation," KEMA, LLC, $20,000, **Taylor Jones**, Aug. – Dec. 2013.

"Project 17: Matching Funds," Kansas Department of Commerce, $860,000, **Jeffrey Tucker** with **Bradley Kramer**, Sept. 2012 – Sept. 2015.

"Project 17: Together We Succeed," Economic Development Administration, $500,000, **Jeffrey Tucker** with **Bradley Kramer**, Aug. 2012 – Aug. 2015.

"Project 17: Together We Succeed," U.S. Department of Agriculture, $215,000, **Jeffrey Tucker** with **Bradley Kramer**, Sept. 2012 – Sept. 2015.

"Predictive Scheduling Model," Children's Mercy Hospital, $46,472, **David Ben-Arieh**, April 2013 – June 2014.

"Quantifying the Effect of Prestressing Steel and Concrete Variables on the Transfer Length in Pretension Concrete Crossties," U.S. Department of Transportation, $612,723.96, **Chih-Hang**, May 2011 – Dec. 2014.

"Regional Business Profiting and Innovation Networking Project P11-0052," North Central Regional Planning Commission, $60,000, **Bradley Kramer** with **Jeffrey Tucker** and **Manveen Saini**, March 2011 – July 2013.
"Seat Belt Convincers," State of New York, $82,880, **Jeffrey Tucker**, Sept. 2010 – Aug. 2015.

"Southeast Kansas Advanced Manufacturing Reshoring Strategy Development Program," U.S. Department of Agriculture, $95,000, **Jeffrey Tucker** with **Brad Kramer**, July 2012 – Dec. 2014.

"Southwest Kansas Regional Asset Mapping P11-0060," Great Plains Development, Inc., $10,000, **Brad Kramer** with **Jeffrey Tucker**, March 2011 – July 2013.

"Telemental Health Appointment Optimization," U.S. Department of Veterans Affairs, $85,961, **David Ben-Arieh**, Aug. 2013 – Sept. 2014.

"Ultrasonic Vibration-Assisted Pelleting of Cellulosic Biomass for Biofuel Manufacturing," National Science Foundation, $405,033, **Bradley Kramer** with Konghai Wang and **Meng Zhang**, Sept. 2010 – Aug. 2015.

"University Center Economic Development Program," U.S. Department of Commerce, $740,000, **Jeff Tucker** with **Bradley Kramer**, **Scott Case** and **Bret Lanz**, Aug. 2013 – July 2013.

Service and Recognition

David Ben-Arieh

Editorial board, Journal of Health Systems, publishings Palgrave Macmillan

Editorial board, International Journal of Information and Operations Management Education, Inderscience Publishers

Editorial board, International Journal of Telemedicine and Medical Informatics (IJTMI), Springer publishing

Vice-chair elect, Human Factor SIG of American Telemedicine Association

Todd Easton

Open Journal of Modeling and Simulation, editor

Jessica Heier Stamm

INFORMS Section on Public Programs, Service and Needs, senior vice president of programs

Stanley Lee

International Journal of Artificial Life Research, IGI-Global Publishers, 2008- present, editor-in-chief

International Journal of Operations Research, 2004-present, senior editor

International Journal of Modeling and Simulation, ACTA press, Calgary, Canada, 2001-present, associate editor

Fuzzy Optimization and Decision Making, Kluwer Academic Publishers, 2000-present, associate editor

Mathematical Sciences Research Hot-Line, international journal of rapid publication, 2000-present, associate editor

Computer and Mathematics with Applications, Pergamon Press, Inc., 1975-present, associate editor
Indian Journal of Management and Systems, 1984-present, associate editor

Journal of Engineering Chemistry and Metallurgy, 1989-present, area editor

Journal of Nonlinear Differential Equations: Theory, Methods, and Applications, 1993-present, editor
Journal of the Chinese Institute of Industrial Engineers, 1998-present, honorary editor

International Journal of Fuzzy Systems, 1999-present, area editor

The Chinese Journal of Process Engineering, Chinese Academy of Sciences, 2001-present, honorary editor

Journal of Uncertain Systems (JUS), World Academic Press, 2006-present, associate editor

British Journal of Applied Science and Technology, SCIENCEDOMAIN International, 2011-present

Bioinfo Publications Journals, India, 2011-present

Scholarly Research Exchange, An International Journal, Hindawi Publishing Corporation, 2008-present

The Open Industrial and Manufacturing Engineering Journal, Bentham Open, 2008-present

International Journal of Computer Science and Application, 2012–present

International Journal of Enhanced Research in Science, 2012-present

World Journal of Pharmaceutical Research, 2012-present

Applied Cell Biology, 2012-present.
International Journal of Production Research, associate editor, 2013

Open Journal of Modeling and Simulation, editorial board, 2013

International Journal of Computation and Neural Engineering, editorial board, 2013

Asian Online Journals, editorial and review board, 2013

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Member of the International Editorial Review Board of International Journal of Manufacturing, Materials and Mechanical Engineering

Member of the editorial board for the journal of ISRN Ceramics, an International Scholarly Research Network (ISRN) journal

Member of the NAMRI/SME Scientific Committee Co-organizer for a symposium in the 2013 ASME International Conference on Manufacturing Science and Engineering

ZJ Pei

Associate technical editor of Machining Science and Technology, 2008–present

Associate editor for Journal of Manufacturing Processes, 2009–present

Editorial board member of International Journal of Engineering Business Management, 2008–present

Editorial board member of International Journal of Machine Tools and Manufacture, 2005– present

Editorial board member of International Journal of Machining and Machinability of Materials, 2007–present

Editorial Board member of ISRN Ceramics, 2011–present

Editorial board member of Journal of Machining and Forming Technologies, 2008–present

Editorial board member of Open Mechanical Engineering Journal, 2007–present

Editorial board member of Recent Patents on Mechanical Engineering, 2007–present

Member of the SME NAMRI Scientific Committee, 2004–2009; 2012–2014

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