

IMSE prof develops virtual tools for real victories in battle

Most of us are familiar with images of generals in war rooms moving models of ships, troops, and armor over two-dimensional grids. Warfare, however, is conducted in three dimensions. And, according to IMSE Professor **Adrian Sannier**, that third dimension is pretty important.

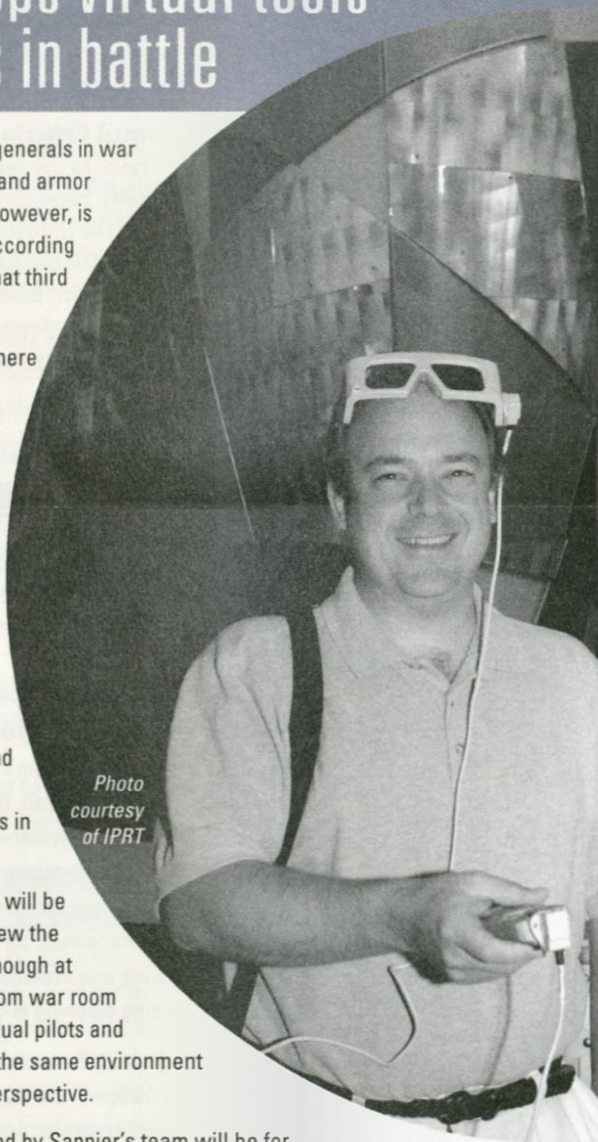
"Whether or not you're in the threat sphere from a surface-to-air missile," Sannier notes, "is entirely a 3-D problem. That's kind of hard to get from a scope."

With support from the Iowa Technology Center and the Air Force Research Lab, Sannier and Iowa State's Virtual Reality Applications Center (VRAC) are developing training modules that will give American battle managers a decided tactical advantage, immersing them within a global "battle space" in which command and control capabilities extend in real time to virtually all forces and resources in a theater of operations.

An important component of the training will be the ability of managers and others to view the battle space in a distributed manner. Though at different sites physically, everyone—from war room generals to field commanders to individual pilots and soldiers—will be able to participate in the same environment virtually, each from his or her unique perspective.

While initially the applications developed by Sannier's team will be for training only, eventually they may find their way into actual battle spaces. "The second phase," according to Sannier, "is to give theater commanders the ability to go to the simulated perspective of the pilot, go back to the level of a squadron, see a tactical section of the battlefield, or see the entire theater and direct a battle immersively."

Sannier stresses that command and control are the operative categories for the military in 21st-century warfare, and that wars will be won not so much on superiority of forces as on superiority of information. The tools he is helping to develop, Sannier says, will provide "better information and faster response time throughout the command chain."



*Photo
courtesy
of IPRT*

*IMSE faculty and
VRAC researchers
Adrian Sannier
(above) and
Carolina Cruz-Neira
(right)*

Virtual karma's gonna get you

IMSE Professor **Carolina Cruz-Neira** and Whitney Sanford of the Department of Philosophy and Religion are using the C-6 virtual reality chamber to recreate a Hindu temple, replete with sounds, colors, worshippers, and, not least, its ancient sense of history.

Cruz-Neira thinks Americans are good candidates for a virtual religious experience. While American churches may be glorious in their own right, she said, their very modernity gives them a "hygienic" quality impervious to history.

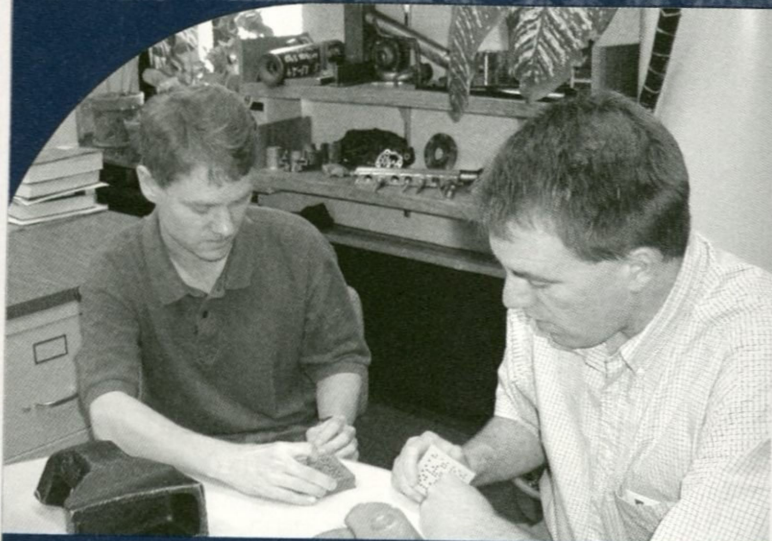
"It's a struggle for students who were raised in the U.S. to perceive what it means to have this ancient culture," the Spanish-born Cruz-Neira said. "As a child I used to jump around on Roman ruins that are 2000 years old. That was my playground."

It is perhaps ironic that Cruz-Neira and Sanford would employ an illusionary environment to recreate such a highly sensual experience. Yet, according to Sanford, what is illusionary is the way in which religion often relies on language rather than ritual and experience.

"We tend to talk about religion solely in textual terms," Sanford noted. "Religion is a totalizing experience of seeing, hearing, and smelling."



Recasting methods in the metal casting industry



Despite foreign competition in commodity steel production, American foundries still dominate the metal casting industry. **Tim Van Voorhis** and **Frank Peters** want to keep it that way.

With help from a grant from the Department of Energy's Office of Industrial Technologies, the IMSE faculty members are seeking ways for American foundries to keep their competitive edge by identifying factors that affect the variability of metal castings. By turning out a more consistent product, foundries can avoid costs associated with the creation of scrap and reworking of components. And, with closer process control, producers can manufacture lighter components, which will allow casting users to realize energy savings as well.

The current effort, which began in March, examines 16 steel foundries across the nation. Employing graduate and undergraduate research assistants, eight students will visit two foundries each over the three-year project, spending five to twelve weeks reviewing processes and collecting data.

Peters worked extensively on metal casting projects as a doctoral student at Penn State, and he has continued at Iowa State. "One project was in re-engineering casting production systems," he noted. "A major issue that was identified was the impact of variation in product quality and rework times on the production system. That's what led to this project."

While Peters focuses on the process, Van Voorhis brings his expertise to bear on the foundries' scheduling and operations research practices, helping producers develop new mechanisms for collecting data and improving efficiency—an aspect of the project reflecting IMSE's recent focus on information technologies and enterprise computing.

"We'd like to see foundries reduce their lead times and work-in-process inventory," Van Voorhis said. "Part of this could be realized by improving scheduling and software to incorporate variability in forecasting resource utilization and developing production plans that remain stable even when processing times are unpredictable. We want to decrease variability, but we also want to develop tools that can help foundries live with it."



Joseph K. Walkup Prominence in Industrial Engineering Award.....(PIE Award)

The IMSE department and the IMSE Industrial Advisory Council announce the formation of the Joseph K. Walkup Award to recognize prominence in industrial engineering.

In 1942 Professor **Joseph Walkup** pioneered the establishment of the industrial engineering department at Iowa State University. He then fostered and guided the department's growth as department head for the next 31 years. Professor Walkup's creation lives on as the department produces new industrial engineering graduates and research that touches and improves all our lives.

Walkup PIE Award Criteria:

1. Exemplary service to the industrial engineering department, college, university, community
2. Advancement of the industrial engineering profession
3. Prominence and outstanding achievement in chosen profession
4. Limited to ISU alumni, faculty, or affiliation with ISU
5. Ten-year minimum professional tenure

Please consider nominating someone by sending the person's name to: Lynn Franco

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IMSE 'goes the distance' in engineering education

Engineering Distance Education offers choices in lifetime learning

IMSE offers a master's program in systems engineering designed for working professionals. This fall, Dr. **Doug Gemmill** will teach a 3-credit graduate course, IE 565, "Systems Engineering and Analysis," which introduces students to the organized, multidisciplinary approach to designing and developing systems. Topics include life-cycle costing, scheduling, risk management, functional analysis, conceptual and detail design, testing and evaluation, requirements analysis, and systems engineering planning and organization.

Additionally, Dr. **Patrick Patterson** is offering a new course, IE 572X, "Design and Evaluation of the Human-Computer Interface," which investigates human-computer system characteristics and provides a basis for advanced interface design. Students will evaluate the information presentation characteristics of a wide variety of interfaces. Topics include human characteristics, user interfaces, and principles and methods of use-centered design. The course will also explore human factors in the design of Web sites, computer games, information presentation systems, and both desktop and immersive virtual reality.

For additional information about courses, delivery methods, costs, and the Engineering Distance Education program, please visit EDE's Web site at <http://www.ede.iastate.edu>.

Student finds way as engineer, now guides others

After uncertainty her freshman year as to where her interests lie, **Silvia De La Cruz** no longer has any reservations: she's convinced her future is in industrial engineering.

"I know that whatever I pursue will contain an engineering aspect," explains De La Cruz, "so as an industrial engineer I feel prepared." With that in mind, she took IE courses in the fall and is now well on her way to specializing in the business and management aspects of industrial engineering, which, says De La Cruz, will give her "a broader sense of how a company works."



However, more than simply shaping her career at Iowa State, the IE sophomore has become a powerful force for promoting cultural awareness. During her freshman year she revived the Sigma Lambda Gamma sorority for Latinas, a group bent on broadening understanding of both Hispanic and other cultures in the community. The sorority is recognized nationally and is on the way to becoming an official chapter at ISU.

De La Cruz is also a mentor for elementary and middle schoolers in the Program for Women in Science and Engineering (PWSE). This spring, through hands-on activities, she demonstrated to minority elementary school students in Marshalltown, Iowa, how math and science concepts are integral to the field of engineering.

Along with her mentoring activities, De La Cruz is also busy gaining pre-professional experience through internships. Last summer she worked in John Deere's product planning division, doing forecast modeling for future cotton picker sales worldwide and researching new technology. She plans to intern with John Deere again this summer and fall in the company's Des Moines works.

De La Cruz attributes her strong interest in science and math to women engineers who, when she was in middle school, devoted their time to inspiring youngsters. "It took me a while to believe in myself," she reflects, "but I had to find who I was and what my principles were." Now, her mission is to reach her full potential as an industrial engineer and to encourage other young women to enter the field.

Yi-Chiuan Lai receives Teaching Excellence Award

The purpose of the ISU Teaching Excellence Award is to recognize and encourage outstanding achievements by a graduate student in teaching.

The program is administered by the Office of the Graduate Dean and the Vice Provost for Research and Advanced Studies, with additional support from the Graduate Student Senate.

This year we are happy to announce that the Teaching Excellence Award goes to **Yi-Chiuan Lai**, who has served as a teaching assistant in IE 441 (Industrial Engineering Design) for several years. Lai has worked with professors who indicate that he has grown from being a teaching assistant in the course to a "peer," developing materials for the course and strengthening the quality of the lab experience. As one professor put it, "He gives his time to students without hesitation and helps guide them down a path of learning."



Leadership comes naturally to IE junior

IE junior **Kim Knuth** learned early at Iowa State that engineering success goes hand-in-hand with active involvement in professional activities.

Best known for her strong leadership role in Engineering Student Council, where she was the first freshman to hold an executive position, Knuth's reach has extended well beyond the College of Engineering. She was one of 12 people selected to attend the 2001 and 2002 Canadian Engineering Leadership Congresses and one of only two to attend the 2001 Canadian Leadership Engineering Competition.

Knuth was also elected president of the National Association of Engineering Student Councils (NAESC)

during a national leadership conference held at Iowa State in October 2001. NAESC includes groups from colleges and universities across the country and serves as a forum for engineering students to network with future employers.



Knuth receives Dean's Leadership Award from CoE Dean James Melsa.

Knuth became involved with NAESC in the fall of her freshman year, when she attended a conference hosted by the University of South Florida, and in March was elected representative for Region IV. At the 2000 national gathering in Seattle, when Iowa State was chosen to host the 2001 conference, the ISU Engineering Council selected Knuth and fellow student **Kristen Bleedorn** to direct the event, which hosted over 400 top engineering students from across the country and Canada.

As president, Knuth supervises a five-member board of directors responsible for pursuing NAESC's goals and interests and for organizing the group's national and regional conferences. One of Knuth's goals is to secure permanent corporate sponsorship for NAESC. Currently, she said, sponsors are solicited only for the conferences, which means that day-to-day administration of the organization has to rely on a tight budget.

For her leadership in college, university, community, and professional organizations, Knuth was presented the Dean's Leadership Award for 2001. She plans to graduate in 2004 and go to work as an engineer. Eventually, she says, she'd like to return to school for an M.B.A. in order to move into consulting work. "I like working with people," Knuth observed. "But I also have an engineering mentality."

A brief history of the IMSE department

In my travels I've heard many stories about IMSE. So I thought an annotated chronology of the department's history—warts and all—might interest our alumni. I'd like to hear from you if you have any corrections, embellishments, or anecdotes you can share for future issues (mail me at ppatters@iastate.edu).

—Patrick Patterson, Chair



Marston Hall

It begins . . .

The Twenties

- 1919 ... An IE option is introduced for mechanical engineers at what was then Iowa State College. The program is directed by **J.O. Keller**, who in 1911 received the first IE degree awarded from Penn State.
- 1926 ... The general engineering curriculum is initiated.
- 1929 ... The Department of General Engineering (GE) is established, with **Frank Paine** as head. The curriculum has only two GE courses—both personnel-related—with the rest made up of electrical, mechanical, and civil engineering courses.

The Forties

- 1942 ... **Joseph Walkup** becomes department head.
- 1946 ... An IE option is offered in the GE department.
- 1948 ... The department starts a student AIIE organization.

The foundation . . .

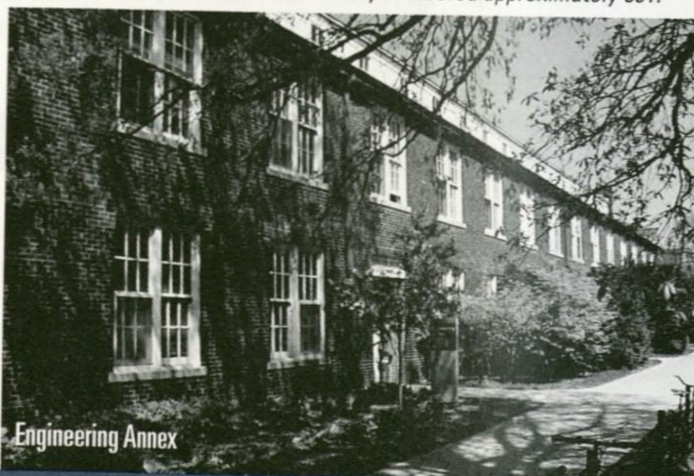
The Fifties and Sixties

- 1953 ... A local Gamma Epsilon Sigma honorary society is established.
- 1956 ... The department's name is changed from general engineering to industrial engineering. By 1957 the department has 197 undergraduates and three lab "rooms" in Marston Hall. The first students with a B.S. in industrial engineering graduate.
- 1961 ... The engineering operations curriculum begins.

The Seventies

- 1973 ... **Wilber Meier** becomes department chair.
- 1974 ... **Keith McRoberts** becomes department chair. Alpha Pi Mu, the national IE honor society, is started in the department.

From the Fifties to the Seventies, the curriculum was made up of courses split about equally between engineering and management. The department was nationally recognized for the quality of its curriculum, faculty, and students. By 1987 the student body numbered approximately 551.



Engineering Annex

Keeping our future as strong as our past—

Donors are encouraged to participate in the Investing in People initiative by making endowment gifts or expendable (non-endowment) gifts. Minimum funding levels for the Investing in People initiative are listed at right.

Endowed undergraduate scholarship	\$ 25,000
Expendable undergraduate scholarship	\$ 1,500
Endowed graduate fellowship	\$ 150,000
Endowed partial graduate fellowship	\$ 80,000

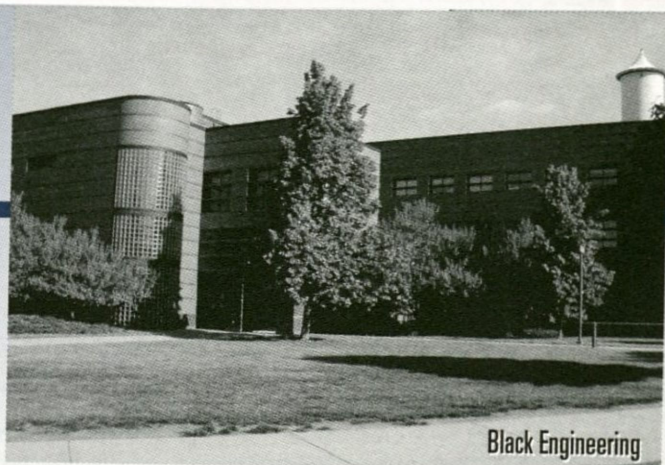
● Impetus for change . . .

The Late Eighties to Mid-Nineties

The College of Business receives accreditation

- 1988 ... At a retreat, engineering DEOs vote to combine the IE and ME departments. The general feeling is that much of the IE curriculum duplicates that of the recently accredited business college, a theme that leads to many subsequent discussions and decisions regarding the department's future.
- 1989 ... The ISU Long Range Planning Committee Report recommends that the IE department be eliminated, a finding supported by a Peat Marwick Study initiated by the Board of Regents. The department refocuses on manufacturing and operations research to establish a unique identity. Dean **David Kao** defends the department before the Board of Regents, indicating that its new focus will alleviate concerns of duplication.
- 1989 ... **Way Kuo** is named department chair.
- 1989 ... The department moves into the Engineering Annex, where it has six laboratory rooms.
- 1989 ... The Board of Regents approves a name change to the Department of Industrial and Manufacturing Systems Engineering (IMSE), with the understanding of a commitment to changing the departmental focus away from management to engineering. However, the degree granted remains a B.S. in industrial engineering.
- 1990-1991 ... Changes proposed by the Board of Regents are implemented: the department replaces 40% of existing curriculum, eliminating courses in management, human resources, and project management.
- 1991 ... The engineering operations curriculum is transferred to the College of Engineering.
- 1992 ... A new Ph.D. program in industrial engineering replaces the engineering valuation Ph.D. The M.S. in operations research is approved.
- 1993 ... **Geraldine Montag** is appointed interim chair.
- 1995 ... An interdisciplinary M.S. in systems engineering begins, managed by the IMSE department.
- 1996 ... **Pius Egbelu** is appointed department chair.
- 1997 ... IMSE has 167 undergraduates.

As you can see, this is an interesting history for what has been a consistently outstanding program over the years, one that has helped develop many successful industry leaders. We are continuing this tradition of excellence into the 21st century, providing our students with traditional industrial engineering skills, new methodologies, and opportunities to understand information flow in the business world of tomorrow. We are very proud of our students, faculty, staff, and facilities. If you are in the Ames area, please visit us.



Black Engineering

● Management emphasis returns . . .

Entering the 21st century

- 1999 ... With the addition of three electives and an option to take two additional courses, the department moves to make engineering management a significant part of the IE curriculum. This is a result of input from our Industrial Advisory Council and companies hiring our students, as well as the students themselves. In addition, as a result of their coursework, many students now minor in management. Based on our students' hiring patterns, more manufacturing classes are also added to the curriculum. The department moves into Black Engineering Building, where we have 16 laboratory facilities.
- 2000 ... **Patrick Patterson** becomes interim chair. An IMSE study committee meets to determine the department's strategic focus and to set long-term goals. The foci will be on manufacturing (already a strength), engineering management, enterprise computing, and information engineering. The IMSE and EE departments partner with the University of Iowa College of Business to offer an Executive M.B.A. Program. The program's home is in the IMSE department.
- 2001 ... **Patrick Patterson** is appointed department chair.
- 2002 ... "Information Technology throughout the Curriculum" initiative is instituted. We have approximately 280 students in the undergraduate program, 40 M.S. students, 25 Ph.D.s, and about 120 students in our M.S. in Systems Engineering Program. We are also coordinating and providing instruction for an Executive M.B.A. Program, in which participants receive a master's in systems engineering from ISU and an M.B.A. from The University of Iowa.

—how to invest in the people of IMSE

Expendable graduate fellowship	\$ 5,000	Endowed visiting professorship	\$ 250,000
Endowed department head chair	\$ 2,000,000	Endowed faculty fellowship	\$ 150,000
Endowed chair	\$ 1,500,000	Expendable faculty fellowship	\$ 15,000
Endowed professorship	\$ 500,000		

For more information, contact the ISU Foundation at 515-294-4607 or visit www.foundation.iastate.edu. See next page for gift designations.



No Mickey Mousing around: IIE grad students shine at Orlando conference

Iowa State was well represented at the IIE Research Conference this May at the Walt Disney World Resort in Orlando, Florida. IMSE doctoral candidates Jaruan Klamklay and Supapan Sangnui were selected to participate in the first IIE Doctoral Colloquium, a forum for discussing academic versus industrial careers, grantsmanship, proposal writing, and teaching issues, among other topics of interest to newly minted Ph.D.s in industrial engineering. The event also served as a networking opportunity, as participants shopped their resumes to prospective employers under the auspices of the Council of Industrial Engineering Academic Department Heads, one of the colloquium's sponsors.

A team of IMSE grad students advised by Assistant Professor **Sigurdur Olafsson** was selected as a finalist for the Graduate Student Competition of Excellence in Industrial Engineering, sponsored by IIE and TEFEN, a consulting firm specializing in industrial engineering and management solutions. **Wooyeon Yu**, **Heedong Kim**, and **Jaekyung Yang** presented "Cy's Solutions" in competition with teams from Texas A&M and Northern Illinois universities.

The teams presented their projects to the assembled conferees and a four-member panel of academics and industrial executives. The goal of the competition was to solve a "real world" problem in the most efficient and effective manner possible, with participating teams assuming the role of an IE consulting group hired by a fictitious client. The IE problem was presented as a case study with an open-ended solution and without limitations on the use of tools, methodologies, or algorithms. All finalists received a travel stipend, with teams awarded additional cash prizes based upon their ranking in the competition. Finalists also had the opportunity to interview with TEFEN.

Iowa State to host IIE Regional Conference

The Iowa State chapter of the Institute of Industrial Engineers (IIE) will host the 2003 IIE Regional Conference February 27 through March 2. More than 200 students, faculty, and industry members from 20 chapters in seven states will attend to discover opportunities in industrial engineering.

The conference theme will be "Leaders of the Pack," hailing the up-and-coming generation of industrial engineers. "The theme leaves it open, so we can work with it," said conference coordinator **Jeffrey Matthias**, a junior IE major.

Conference attendees can expect industry displays, C6 tours, speakers, workshops, and networking activities, according to Matthias. Judges from sponsoring companies will select outstanding student papers and announce them March 2 at an awards banquet, with winners going to the national IIE paper competition.

Iowa State won the bid for the 2003 IIE Regional Conference at the 2001 conference, marking the first time in nearly three decades that the ISU chapter has hosted the event. "We thought it would be a good opportunity," Matthias said. "We're very excited."



The 2002 IIE Student Regional Conference was held February 28-March 3 in Rapid City, South Dakota. Hosted by the IIE Student Chapter of the South Dakota School of Mines and Technology, the theme of the conference was "A Solid Foundation for the World." IMSE students from Iowa State attended the conference, taking part in the student paper contest, meetings, tours, and other activities. ISU industrial engineering students extended a formal invitation at the March 3 business meeting to other students to attend the 2003 regional conference, to be held February 27-March 2 in Ames.

We need your help!

Your support of the IMSE department is greatly appreciated.

When contacted by the ISU Foundation, please designate your gift or pledge to the Department of Industrial and Manufacturing Systems Engineering (Account # 0513712) or to the Industrial and Manufacturing Systems Engineering Scholarship Fund (Account #0500079).

Your contributions help fund student facilities, lab equipment, faculty teaching and research, and department activities.

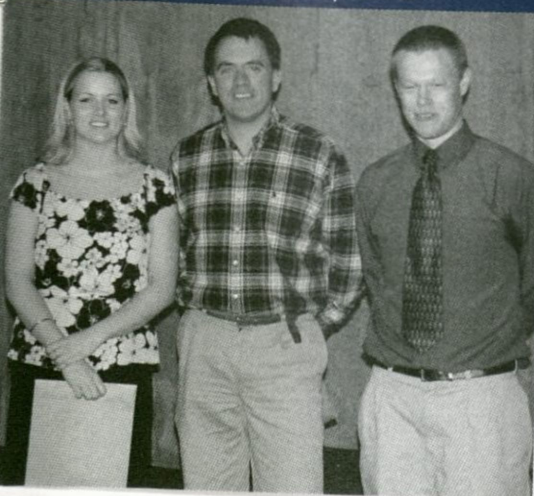
Visit our Web site at www.imse.iastate.edu or contact us at (515) 294-1682; Fax (515) 294-3524; imse@iastate.edu.

You can share information with the department by sending it to Lynn Franco at mlfranco@iastate.edu or Industrial and Manufacturing Systems Engineering, Iowa State University, 2019 Black Engineering, Ames, IA 50011-2164.

IMSE 2002 Scholarship Recipients

Deere & Company Erin Neumann	Procter & Gamble Scott Adams Louise Johnson Kathryn Rothstein
Don Grant Incentive Award Christina Boehme	Richard & Marilyn Engle Scholarship Casey Waechter
Eastern Iowa American Society for Quality Control Brian Jensen	Roderick Seward, Flossie Ratcliffe & Helen Galloway Jeffrey Matthias Clinton Pecenka
E-Week Jeanne Boutott Mike Daricilar Rodney Kalsow Casey Kann Derek Watson	Stanley Howe/ Pella Michael Rodgers
George W. Catt David Englund	Walter J. Lyons Memorial Kara Johnson
Geraldine M. Montag Scholar Silvia De La Cruz Kyan Heck Kira Hendricks	Webster Manufacturing Anne Selene
Harold Jacob Reihman Wendy Kisch Kimberly Knuth	The following industrial engineering students have been awarded scholarships based on their internship with Deere & Company within the State of Iowa
Hempstead-Walkup Joshua Anderson	Jennifer Agee Joshua Anderson Silvia De La Cruz Kelli Krogman John Meyer Ron Scott
IIE Central Iowa Chapter Derek Watson	2001 Berger-David Prize Jeremy Hartman Paul Kenkel Wendy Kisch Kathryn Rothstein
IMSE General Scholarship Gonzalo Rodriguez	
Keith L. & Helen F. McRoberts Health Care Scholarship in Industrial Engineering Erika Burkhart	
Paul Morgan Kelly Ruff	

Two of the 2001 Berger-David Prize recipients, Kathryn Rothstein (left) and Jeremy Hartman (right), are pictured with Dr. Frank Peters (center), the presenter.



THANK YOU 2000-2001 Donor List

IMSE is grateful to the following individuals for their support of the department. The continued generosity of friends and alumni helps to keep IMSE strong and is especially appreciated in a time of considerable cutbacks in state appropriations to the university.

Robert Ackerman Chester Ady Jerry Allen Robert Arnold Melissa Ash Earl Bailey Patricia and Mike Banks Richard Bard Wayne Barkman Kenneth Barrick Roger Berger Jack Berka Nicholas Berkholtz Stephen Berry Richard Blythe Mark Bodensteiner Allen Bolte Chris Brandel Richard Brenner Gregory Brenny Paul Brooker John Broshar Mary Brown James Burt Michele Busse Douglas Carlson Jesse Chapman Julie Chichlowski Todd Christiansen Henry Chu Robert Cobie David Cody Elizabeth Collins Lisa Cotter Jeremy Crittenden Ann Cromwell Ronald Crowl Mary Curtiss Delbert Davenport Cynthia Donovan John Dunn Diane and David Eaton Raymond Edlund Marlin Eiben William Eichman George Elliott Charles Essmann Joey Evangelista David Fletcher Heather Foley Lynn Franco Frederick Freese Charles French	David Fuchs Charles Gaskell Donald and Muriel Gau Mary Ann Grund Robert Halford Richard Hamlin James Hanson Paul Hargrave Gailen Hart Milton Hartley John Heitzman Nancy Heymann Gerald Hilliard Captain Harry and Katherine Hoover Scott Hubbard James Hunt Kim Hyland Donald Jabro Keith Jessen John Johnson Timothy Jury Christopher Kamman John Kamp Robert Keeney Patrick Keily Jeffrey Kinne Verne Koch Denice Krish Sandra Kurt Myron Lambert Karen Larson Letha Larson Leon Leeds Randall Lisbona David and Diane Love Thomas Lynch Edward Malek Mark Mallie Amanda Marg Kevin Mathis William McCracken Michael McLaughlin Dianne McMullin Lewis Mellem Jimmie Miller David Moraniec Michael and Ann Morrissey Charles Mueller Anne Murray John Nelson	Mark Nielsen Amy Nolting Susan Pala Robert Paulson James Perkins Joel Philpott Douglas and Judy Pletcher Carl and Valerie Rausch John Rexwinkel Frank and Mary Reynolds John Roth Robert Roth Lewanna Rucker Charles Safris Paul and Judy Schlick Robert Schrader Michael Shaffer David and Jeanene Skarshaug Jerome Skeers Gerald Smith Ian Smith Richard Sprau William Stark Arlan Stavnheim John Stevens Michael Stocker Brian and Katherine Stouffer Michael Sturm Jodi Swanson James Taylor Daniel Terpstra David Tressler Alan Troeger John Tunwall Kenneth Umthun Craig Vanderleest Terence Virtue Mickey Von Bergen Daniel Wagner Charles Waldron Holly Walkup-Carter Jacqueline Ward- Freese John Weihs Gregory Whitacre Robert White Michael Williams Jon Yanney
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IMSE 2002 award recipients

IE 361 Excellence
In Quality Poster
Presentation
Awardees

Fall 2001

John Hensley
Peter Hoekstra
Keith Horan
Curt Schmidgall
Donald Snyder

Spring 2002

Nichole Harrington
Kira Hendricks
Brian Jensen
Jeffrey Matthias

IE 441 Design
Project Winners

Fall 2001

with John Deere in Waterloo, Iowa

Laura Balza
Erin Broadston
Kara Johnson
Jennifer Simpson

Spring 2002

with Lennox in Marshalltown, Iowa

Valerie Demean
Shawn Higbee
Tara Moses
Candice Rosenow

E-Council President
Anne Schmalenberger

Engineering Student
Council Leadership
Awards

Lori Bushore (Staff)
Lynn Franco (Staff)
Dr. Tim Van Voorhis
(Faculty)

E-Council Award to
Outstanding IIE
Student Chapter
Member
Jhonson Sahlan

SYSTEMS

Patrick E. Patterson
Chair, IMSE
ppatters@iastate.edu

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IOWA STATE UNIVERSITY

Department of Industrial and Manufacturing Systems Engineering
College of Engineering
2019 Black Engineering
Iowa State University
Ames, Iowa 50011-2164

Faculty awards and honors

Thomas Barta has received a grant from the Department of Housing and Urban Development for \$84,000 to develop "A Case-based Reasoning Computer System for Housing Discrimination Enforcement."

Carolina Cruz-Neira (cover) has received a donation of equipment from Silicon Graphics valued at \$78,000. She also is the recipient of grants from Procter & Gamble to study "PC-based Immersive Environments" (\$102,000) and John Deere for "Synthetic Environments as Enabling Technology" (\$277,400).

Max Morris has received the Jack Youden Prize from the American Society for Quality. The award was given for "A Class of Three-Level Experimental Designs for Response Surface Modeling," chosen as the best expository paper appearing in the previous year's volume of *Technometrics*, a journal published by the society and the American Statistical Association. Morris holds a joint appointment between IMSE and the Department of Statistics.

Frank Peters and **Tim Van Voorhis** have received a cost-share grant funded by the Department of Energy (49% at \$327,000) and industry (51% at \$340,000). Their project, "Reduction in Energy Consumption and Variability in Steel Foundry Operations," is featured on page 2 of this newsletter. Dr. Peters was recently promoted to associate professor.

Adrian Sannier (cover) was awarded \$300,000 from the Iowa National Guard to conduct virtual reality research on "Military Applications of Immersive Environments."



Thomas Barta



Carolina Cruz-Neira



Max Morris



Frank Peters



Tim Van Voorhis



Adrian Sannier