PhD Alumni Look at the Past and the Future of IOE

On November 22 and 23, 2002, the second PhD Alumni Reunion was held in Ann Arbor. Thirty-five PhD alumni and their guests joined current and former faculty in celebrating the past, present and future of Industrial and Operations Engineering at the University of Michigan. Throughout the weekend, alumni renewed friendships and expressed gratitude to the current and former faculty for making Michigan “a special place.”

The idea for a PhD alumni reunion was hatched in early spring by a group of alumni, headed by Don Chaffin and Jack Muckstadt, who felt that it was time for the alumni to form an active alumni organization. The goals of the organization would be to provide social and networking opportunities, and a means to inform alumni about the exciting things that are going on within the department and the opportunities to improve it in the future.

The reunion provided an excellent opportunity for alumni to reconnect. All 277 PhD alumni who were contacted were asked to send in a profile along with photos from the past and present. The resulting scrapbook is a remarkable compilation of personal and professional reflections by IOE PhD alumni.

On Friday, alumni and faculty gathered at the Campus Inn. Following a buffet lunch, the afternoon meeting began with a welcome by Jack Muckstadt ’66. All present were asked to tell about themselves, tell a story from their experiences as a student, and tell why they came to the reunion.

Alumni recalled the “bullpen” in the West Engineering Building (mice, bats, a ratty couch, a place to play cards even though an umbrella might be needed). Many alumni expressed affection and gratitude for the faculty who mentored them and sometimes served as surrogate parents. “We all owe a lot to some of the people here,” said Thom Hodgson ’70. Emeritus faculty who attended the reunion included Walt Hancock, Dan Teichroew, Dick Wilson and James Miller.

Alumni also reflected on the value of the education they received. “The kind of education that Industrial Engineering gave us was to open our minds to systems of all kinds,” said Hasan Sayani ’73.

Larry Seiford, the current chair of IOE, gave...
We are a solid department with high national recognition.

-Larry Seiford
forward and lead one of the particular initiatives that was suggested at the meeting, please let me know,” he wrote. “And, of course, if you have any other comments or suggestions about how we can continue to tap the spirit, enthusiasm, and commitment of our alumni, I’d love to hear them.”

The group reconvened at 6:30 p.m. for a cocktail reception followed by an elegant dinner in the Regency Ballroom of the Campus Inn. Alumni, faculty and guests were treated to a surprise performance by the UM Men’s Glee Club at the conclusion of the dinner.

On Saturday morning, alumni had the opportunity to meet with current PhD students who had prepared posters to highlight their research. The poster session took place on the third floor of the Robert H. Lurie Engineering Center on North Campus. Graduate students were energized by the interaction with alumni. “It is much more fun than sitting at a desk writing about my work,” said PhD candidate Ken Hung.

Following a “tailgate” brunch in Lurie, the group moved to the adjacent IOE Building. Watching on a big screen in the warmth of an IOE classroom, they cheered for the Maize and Blue as they battled Ohio State. Following the Ohio State game, the formal alumni festivities were concluded, but several informal dinners are rumored to have gone on for quite a while.

---

**Alumni Objectives:**

- Form an external advisory committee, to assist the department in long term strategic planning issues
- Promote the recruitment and retention of faculty, by alerting the department about potential new faculty candidates, and assisting new faculty hires who are interested in meeting people who could assist them in establishing their professional and research contacts
- Improve the graduate experience by offering to give guest lectures and mentoring select students
- Develop an alumni organization structure (which will include all alumni) to further enhance the quality of the department

---

Photos from the Alumni Weekend are posted on the IOE website: http://ioe.engin.umich.edu/alumni. All alumni are asked to update their personal information at http://ioe.engin.umich.edu/alumni/alumnilist.asp to facilitate the next steps in our attempt to improve our relations with alumni and friends of the department. And please let us know if you would like to become involved in helping us in this important endeavor.
Chair’s Message

Welcome

Welcome to the first edition of our newly designed departmental newsletter. Our plan is to replace the lengthy yearly publication you’ve been receiving with two shorter issues, which will come out twice a year. We’ve revamped the format to highlight specific key initiatives and activities that would be of interest to the majority of our readers rather than reviewing the activities of every program. We hope you like it!

Having just finished my third year as chair of IOE, I continue to be pleased and proud to be a member of this outstanding department of students, faculty, and staff. Through their joint efforts, both our undergraduate and graduate programs continue to be ranked number two in the nation. James Boomis, featured in this newsletter, is an outstanding example of the caliber of student enrolled in our programs. IOE has many award winning student leaders—the best and brightest of Michigan Engineers!

Our faculty continue to distinguish themselves in numerous arenas. Professor Robert Smith has been appointed the first Altarum/ERIM Russell D. O’Neal Professor of Engineering; Professor Yili Liu has been named an Arthur F. Thurnau Professor; Professor Monroe Keyserling was elected a Fellow of the American Industrial Hygiene Association. Many of our faculty are engaged in a variety of interdisciplinary research efforts with University of Michigan colleagues from both the Medical School and the Business School. Others continue to build strong ties to industry worldwide. The first year successes of our three new faculty, Professors Amy Cohn, Sebastian Fixson, and Dushyant Sharma are featured in this issue. And finally, we are pleased to welcome the two newest members of our faculty starting this fall, Professors Goker Aydin (Stanford) and Vlad Babich (Case Western), who will be featured in the next edition of this newsletter.

I am sad to report that Professor Emeritus Daniel Teichroew passed away on July 8, 2003 following a brief illness. Dan was a remarkable man who had a great impact on the discipline of software engineering and the automation of the software life cycle. Many of his colleagues consider him the “father” of CASE tools. It is apparent from the many letters and emails I have received, that his loss is deeply felt across our field.

On another note, you may be wondering how the economy is affecting our department, and particularly our students. I’m pleased to say that, despite the difficult job market, our students continue to be in demand. However, universities all across the country are facing the challenges of tough economic times, and the University of Michigan is no exception. Reduced state revenues have resulted in a budget reduction that will have real consequences. Since IOE continues to be a popular department of choice, with approximately 550 undergraduates and 210 graduate students from all over the world, staffing courses remains a continual challenge. Unfortunately, vacant faculty positions have been put on “hold” for the coming year. However, we recognize the need to preserve the core academic quality of our teaching and research missions, and we will continue to devote ourselves to maintaining the high standards in teaching, research, and service that you expect of us.

I close with a final note of appreciation to our dedicated staff who continue to support all areas of academic effort with professionalism, dedication, and good cheer. I’d particularly like to recognize Nancy Murray, editor of this newsletter, for her tireless efforts in this journalistic challenge.

This is your newsletter, and we’d love to hear from you. Please send your comments, suggestions, etc. to seiford@umich.edu.

Sincerely,

Lawrence M. Seiford
Chairman and Professor
Industrial and Operations Engineering
Featured Program

IOE and the Engineering Global Leadership Honors Program

IOE is proud to be a major participant in the College’s Engineering Global Leadership (EGL) honors program. Jim Bean (IOE professor and currently Associate Dean for Academic Affairs) established EGL ten years ago in order to address two perceived gaps in engineering education at that time: the inability of most professionals to either communicate across the engineering and business boundary or to operate comfortably in another culture.

The core curriculum of the EGL program addresses both of these gaps by combining a traditional engineering curriculum with “core” courses in the School of Business Administration and in the School of Literature, Science, and Arts or at foreign institutions. The former address leadership and organizational issues, and the latter expose students to the language, history and customs of a (student-selected) region of the world having competitive and engineering importance. The curriculum also requires students to complete a “synthesis” team project that places their learning in an industrial context, has them apply their technical knowledge in the field, and develop their teamwork skills.

Since EGL is an honors program, the admissions requirements are quite high and the added requirements are time-consuming, but the benefits are clear. The enthusiasm and accomplishments of the students are exemplary, and the program leads to two degrees after an average of five years at Michigan: a BSE in Industrial and Operations Engineering and an MSE in Industrial and Operations Engineering.

Employers recognize that EGL students are not typical master’s degree graduates, and that they do not fit into the traditional “engineering” job role. In response to this, some companies have created new positions and job rotation programs specifically for EGLs, to take advantage of their unique skills and talents.

Employers of EGL students include manufacturing companies such as Allied Signal, Cummins Engine Company, DaimlerChrysler Corporation, Dell Computer Corporation, Ford Motor Company, Intel Corporation and Lucent Technologies; and consulting firms such as A.T. Kearney, Bain Consulting, Boston Consulting Group, Diamond Technology Partners, McKinsey & Company and Price Waterhouse Coopers.

Twenty five percent of EGL 2002 graduates accepted manufacturing management positions, 75 percent joined consulting firms. The average starting salary for the 2002 EGL’s was $73,500 in manufacturing management and $58,700 in consulting.

Perhaps one of the most interesting and enjoyable features (from both student and faculty viewpoints) is the existence of the student-run EGL Honor Society. The organization has combined weekly social events (including what looks like an attempt to eat at every ethnic restaurant in Ann Arbor) with community service projects, informational sessions and research forums.

Because of IOE’s leadership in establishing and nurturing this honors program, it has attracted the attention of other departments. After admitting some ME students last year, there are plans to explore extending this exemplary honors program to all undergraduate students in the College of Engineering.

So once more IOE is at the forefront of educational innovations. Indeed, a number of you reading this must have been EGL graduates within the past 6 years - let’s hear from you and let us know how your experiences in EGL have helped you in your careers.

Stephen Pollock
EGL Program Director
Çinlar Receives 2002 Alumni Merit Award

Erhan Çinlar, 2002 IOE Alumni Merit Award winner, is congratulated by Stephen Director, Robert J. Vlasic Dean of Engineering, and Larry Seiford, chairman of IOE.

Erhan Çinlar is the Norman J. Sollenberger Professor of Engineering at Princeton University, and chair of the Department of Operations Research and Financial Engineering. He is best known for his work on probability models in manufacturing and telecommunications, and his extensive research in Markov processes and martingales.

Professor Çinlar earned bachelor’s degrees (’63) in both industrial engineering and mathematics, a master’s degree (’64) in mathematics, and a PhD (’65) in industrial engineering, all from the University of Michigan. After leaving Michigan, he went on to teach industrial engineering and management sciences at Northwestern University. In 1985, he joined the civil engineering and operations research faculty at Princeton University, serving as chair of the department from 1997 until 1999, when he became the chair of its newly created Department of Operations Research and Financial Engineering.

In recognition of his contributions to probability theory and its applications, the Institute of Mathematical Statistics elected Professor Çinlar a fellow in 1974. In 1992, the Turkish Council for Scientific and Technological Research recognized him with its Science Prize for his contributions to engineering and mathematics. He was elected to the International Statistical Society in 1993.

Throughout his career, he has held numerous leadership positions in the fields of operations research, probability and applied mathematics. In particular, he has served on the editorial boards of 11 scientific journals for a total of 137 work-years, and was the editor-in-chief of Mathematics of Operations Research, the premier research journal in its field, from 1987 to 1992.
Student Success Story

My name is James Boomis. As an Industrial & Operations Engineering master’s student, I am currently concentrating in Engineering Management. My experience at the University of Michigan has been excellent. It has been not only foundational, providing me with an education, but also a springboard to higher pursuits. Looking back to my first year of undergraduate studies, I never imagined that the next five years would afford me the opportunity to accomplish so much.

In March 2001, my mother underwent a successful liver transplant at University of Michigan Hospital. It was a tough time in my life, trying to balance my studies and also be supportive of my family. Because of my mother’s illness, I gained a strong interest for healthcare. In April 2001, I began working for the Program and Operations Analysis Department at University of Michigan Hospital and Health Centers. While there, I worked to improve the quality, timeliness, and costs of hospital processes. It was an excellent experience that allowed me to apply the principles that I was learning in class to real world problems of interest. I also grew professionally by interacting with clients and delivering presentations to the hospital’s senior management. I continued working for the hospital during my senior year and was the Graduate Student Instructor (GSI) for the IOE 481 senior design class, Practicum in Hospital Systems.

In the fall of 2000 I initiated into the Alpha Pi Mu National Industrial Engineering Honor Society, Michigan Chapter. I won “Initiate of the Year” honors and was elected society president for the 2002-2003 school year. As president, I tried to help students both academically and professionally, and encouraged social activities to bring together IOE students, faculty, and staff. In March 2003, I was honored with the Wyeth Allen Scholarship for dedication and success with Alpha Pi Mu.

It is said that wisdom comes with age and here is my advice to students beginning their academic careers. It is essential to develop a good sense of priority and balance between studies, exercise, healthful nutrition, sleep, and social activities. I think that a lot of students are either too focused on academics or not focused enough. They should strive to work hard in school, but also develop a good balance of interpersonal relationships, such as family and friends. I am convinced that college should be a time of adventure to experience positive new things and, thereby, grow as a person. What has helped my growth in all areas of my life is a solid foundation of family, my Catholic faith, true morality, personal responsibility and a dedication to excellence.

Name: James Boomis
Age: 23
Home Town: Plymouth, MI

Education:
BSE ’02/ MSE ’03 - Industrial & Operations Engineering/Engineering Management

Activities:
President – Alpha Pi Mu - Michigan Chapter, National Industrial Engineering Honor Society
Epeians – University of Michigan, College of Engineering Leadership Honor Society
Sigma Phi Epsilon Social Fraternity – Michigan Alpha Chapter
University of Michigan Engineering Consulting Club (MECC)
IOE Blueprint Newsletter Editor

Current Work:
Conducting quality improvement project for University of Michigan Hospital and Health Centers as part of the University of Michigan Six Sigma Black Belt Program.

Future Employment:
Faculty News

Yili Liu Receives Arthur F. Thurnau Professorship

Yili Liu, Associate Professor of Industrial and Operations Engineering, was among five faculty members named by the Board of Regents to the Arthur F. Thurnau Professorship, an award that recognizes and rewards faculty for outstanding contributions to undergraduate education. The term of the professorship is July 1, 2003-June 30, 2006.

Established by the regents in 1988, the professorships are named after Arthur F. Thurnau, a U-M student in 1902-04, and are supported by the Thurnau Charitable Trust, which was established through his will. Recipients receive a grant to support their teaching.

Liu has received many teaching awards, including the Industrial and Operations Engineering Outstanding Teacher Award in 1994; the Alpha Pi Mu Industrial and Operations Engineering Professor of the Year Award in 1995, 2000 and 2001; and the Outstanding Teacher Award in 1999 and 2001 from the CoE’s Society of Women Engineers/Society of Minority Engineering Students. In 2002, he was given the highly competitive Education Excellence Award from CoE for sustained excellence in curricular development, instruction and guidance at the undergraduate and graduate levels.

Robert Smith Named First Altarum/ERIM Russell D. O’Neal Professor of Engineering

Robert Smith has been appointed the first Altarum/ERIM Russell D. O’Neal Professor of Engineering, effective September 1, 2003. This endowed professorship was named to honor ERIM’s former vice chairman, Dr. Russell O’Neal. Named professorships are among the highest honors that the College of Engineering can bestow on a faculty member.

In his recommendation letter to the Regents, College of Engineering Dean Stephen Director stated that “Professor Smith’s distinguished career exemplifies the highest standards in all aspects of academic performance. His research and teaching will continue to contribute significantly to the excellent reputation of the College and the University.”

Monroe Keyserling Named Fellow

Monroe Keyserling has been recognized as a Fellow by the American Industrial Hygiene Association (AIHA) for “distinguished service and significant contributions towards protecting the health and safety of people in the workplace and the community, and in advancing the quality of the industrial hygiene profession.”

In Memorium

Daniel Teichroew, distinguished University of Michigan Professor Emeritus, beloved father and devoted grandfather, passed away peacefully July 8, 2003 following a brief illness. He will be remembered for his strong family values, keen sense of humor, his clarity and intellect, his tremendously supportive and generous nature with friends, associates and students, and the much loved dogs that shared his home.

Professionally, Dan will be remembered for his great intellect and his insight in the discipline of software engineering. In fact, he is regarded by many around the world as the father of software engineering having made great technical and intellectual contributions establishing and advancing the practice in the US and in such faraway places as Yugoslavia, China, Belgium, Korea, Russia and South Africa.
Amy Cohn
Assistant Professor

For Amy Cohn, optimization is a way of life. Whether it is planning her daily schedule or matching pilots to airplane flights, she sees “tiny pieces of a puzzle that all must fit together and all those pieces influence other things.”

With a PhD in Operations Research from MIT, and an undergraduate degree in Applied Math from Harvard, Cohn joined the faculty in 2002. Her research interests are in solving large-scale discrete optimization problems. She is currently focusing on modeling and solution techniques using binary variables that encompass multiple decisions. She has applied these ideas to applications in airline planning, manufacturing, and supply chain logistics. Cohn received a CRLT grant to develop a new large-scale optimization course, which she hopes

Sebastian Fixson
Assistant Professor

In the fall of 2002, Sebastian Fixson joined the IOE faculty as an Assistant Professor. He received his PhD in Technology, Management, and Policy earlier that year from the Massachusetts Institute of Technology. Prior to his work at MIT, he taught for two years at the Technical University of Berlin in the Department of Logistics. He holds a degree in Mechanical Engineering from the University of Karlsruhe in his native Germany.

Fixson conducts research in the field of Engineering Management and Concurrent Engineering. His current projects include the investigation of the role of modularity in design and production, the development of technical cost modeling methods, and the study of how technology developments

Dushyant Sharma
Assistant Professor

Dushyant Sharma looks at logistics and scheduling problems and thinks in algorithms.

Sharma joined the faculty in the fall of 2002, after receiving his PhD in Operations Research from MIT. His undergraduate degree was in Computer Science, which he earned in Kanpur, India. His research interests are in modeling and algorithm development for discrete optimization. He is currently focusing on developing and analyzing local search based techniques for solving combinatorial optimization problems. He has applied these techniques to solve problems in airline and railroad planning, manufacturing, and telecommunication network design.

Sharma became interested in Operations Research while taking an under-
**Fixson**

CONTINUED FROM PAGE 9

interact with organizational design and management.

Both his Mechanical Engineering and his interdisciplinary education have shaped his research interest. “I like working with tangible things, and with things that are complex.” Cars, for example, have been a major focus. “The automobile is a very complex product, whose development and production require the involvement of many different organizations along a complex supply chain.” To ensure this chain functions effectively and efficiently is a real challenge. He points to the product launch as a critical test. “Errors that show up here typically have roots in misunderstandings or poor decisions far upstream.” To trace the emergence of these errors and to develop remedies is one of his research areas.

While teaching IOE 201 “Economic Decision Making” in the fall of 2002, Fixson worked on developing a new syllabus for IOE 523 “Comparative Technology Management” which he taught in winter 2003. He redesigned the graduate course to help students to approach technology management from multiple perspectives: the course now covers long-term technological developments, technological competition among firms, and innovation and product development issues within firms. Fixson has also incorporated some of his research on product architecture and its cost implications into this course.

The considerable reputation of the University of Michigan contributed to his decision to join the IOE Department. But beyond that he felt that the atmosphere in the department was friendly and professional. “I have not been disappointed. The faculty here has been very supportive.” He adds, “The support staff members are extraordinary.”

---

**Cohn**

CONTINUED FROM PAGE 9

will merge education and research at an earlier stage.

Operations Research attracted Cohn because of the limitless areas where it could be applied. The principles of efficiency and interconnectedness could improve the delivery of all kinds of services such as healthcare, finance, education, even water supply. “If it is a system, it needs optimization.”

Cohn chose Ann Arbor because of the access to many areas of research at the University of Michigan, and a sense that the IOE department was a place where she could optimize her work and family life. “We have felt welcomed and included by everyone from the dean to the office staff,” said Cohn.

---

**Sharma**

CONTINUED FROM PAGE 9

graduate course in math modeling that included a study of traffic lights. “In OR we are dealing with real problems, not the abstract problems in computer science.”

His future research interests are in the area of creating real time decision support systems. “Routing logistics is a big area. The problems of real time decision-making are very complicated. The challenge is how to make immediate decisions when the data is continuously changing.”

The decision to join the IOE department at the University of Michigan was an easy one for Sharma. “The department is very strong in optimization and my wife and I wanted to be in a small town rather than a big city.” He has found the IOE department to be “very collegial, a fun place.”
Special Honors

Rackham Recognizes Outstanding Graduate Students

IOE PhD Candidate, Yong Chen, has been awarded the prestigious Rackham Predoctoral Fellowship for 2003.

Outstanding GSI Award from Rackham was awarded to Jennifer Karlin for 2003.

NSF Fellowship

Kristi E. Schmidt received a NSF Graduate Fellowship for 2003.

Melinda Davey received honorable mention from the NSF Graduate Research Fellowship Program.

IOE Scholarship Winners for 2003

Accenture Scholarship
Bradley Belsky
Anne Halfmann

Wythe Allen Scholarship
James Boomis
Michael Ciulis
Aimee Constantine
Julio Medal
Tom Oldakowski
Paula Fleur Smit

Walton Hancock Scholarship
Veronica Chin
Johanna Lichtmann
Mahshid Pirzadeh
Sandra Turnbull

Clyde Johnson Scholarship
Christine Cha
Marc Berman
Eric Battjes
Michael Kwaiser
Michael Ciulis
Sandra Turnbull
Bradley Belsky
Johanna Lichtmann
Mahshid Pirzadeh
Pedro Vaz
James Boomis
Robert Wilson
Sarah Mansuri

CoE Recognizes IOEs Among Student Leaders and Best

The Arlen R. Hellwarth Award
Aimee Constantine

Distinguished Leadership Award
Bradley Belsky

Distinguished Leadership Award
David Ostreicher

The Charles F. Barth Prize
Veronica Chin

Tau Beta Pi Award
Bradley Belsky
Ben Wong

IOE Undergraduate Distinguished Achievement Award
Mahshid Pirzadeh

IOE Graduate Distinguished Achievement Award
Theodore Lambert III

Research Mentor Award

Omer Tsimhoni received the Research Mentor Award in July 2003. The award was created by the CoE Graduate Student Advisory Committee and the Office of the Associate Dean for Graduate Student Education.
Inspired by one of the initiatives suggested at the PhD Reunion, “to improve the graduate experience,” Sheryl Ulin ’90 hosted a brunch in her home for female PhD students. Graduate students got the opportunity to meet and share experiences with successful women PhDs.

Celebrate and Connect!

The Michigan Engineering Alumni Weekend will be held October 16-18, 2003. In addition to attending the traditional class reunions, alumni events and the tailgate and game, alumni will also help celebrate the College Sesquicentennial. For more information and to register online, go to www.engin.umich.edu/alumni.