



GENERAL ENGINEERING NEWSLETTER

Department of General Engineering, University of Illinois at Urbana-Champaign

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Pleck Receives First NCGA MicroCADD Academic Award

The National Computer Graphics Association has honored **Prof. Michael Pleck**, GE Department, with the 1990 MicroCADD Academic Award.

This award is bestowed upon the individual from the academic community who has demonstrated outstanding leadership in the development and promotion of computer graphics within the microCADD field.

Pleck was cited for his significant pioneering efforts in the use of microcomputer-based computer-aided design drafting (microCADD) in the General Engineering MicroCADD Laboratory, which he founded in 1984 as a part of IBM-UIUC Project EXCEL. It was noted the Lab is the foundation for a highly successful, large-scale, and integrated instructional program (G.E. 103).

In addition, **Pleck** was credited with having exerted a strong and positive influence on the use of microCADD in engineering design graphics education nationally.

Pleck received his award in Anaheim, California, on March 20 at the NCGA '90 conference. It was one of three MicroCADD Achievement Awards offered for the first time this year by NCGA.

Hold Streeter, Martin Retirement Dinners

Prof. Harrison Streeter, a member of the General Engineering faculty since 1956, is retiring effective August, 1990.

A dinner-roast was held on May 3 by faculty and friends at the Round Barn Center.

Prof. Streeter received a BS in 1949, LLB in 1951, BS (ME) in 1962 and MS (ME) in 1965, all from UIUC and a PhD in 1967 from U. of Iowa.

After conducting a general practice of law in Kankakee 1951-56, he joined the GE department as an instructor in 1956. He became an assistant professor in 1966 and associate professor in 1971. He was awarded the College Stanley Pierce Award for faculty-student relations in 1988.

Prof. Streeter has taught classes in engineering law and legal problems in engineering design.

A retirement dinner for **Prof. Gordon E. Martin** was held March 30 at the Levis Faculty Center.

He retired on Aug. 20, 1989, after being on the GE faculty since 1953.

His retirement was announced in the Fall 1989 Newsletter.

Prof. Juraj Medanic Will Participate in IFAC World Congress

Dr. Juraj V. Medanic, professor of General Engineering for the past six years, is co-authoring two scholarly papers to be given at the 11th World Congress of the International Federation on Automatic Control (IFAC) in Estonia this summer.

It is a single honor to be selected for a spot on the program of the very prestigious organization which meets every three years, and unusual to present two papers at the same meeting.

Prof. Medanic comes from the Mihailo Pupin Institute, Belgrade, Yugoslavia, where he was a senior scientist in the Systems Analysis Division of the Automation Laboratory and adjunct professor at the University of Belgrade.

At that University, he taught graduate level courses on optimal control theory, differential games and control of large-scale systems with multiple objectives.

In the GE department, he teaches "Analysis of Dynamic Systems" (GE 222) and "Simulation of Dynamic Systems" (GE 491) where he has been a member of the faculty since 1983. He has a joint appointment with the Coordinated Science Laboratory and the Department of Electrical and Computer Engineering. He also is a member of the Beckman Institute Staff.

Medanic has served as principal investigator of more than half a million dollars in research grants. Among them are sponsors such as Joint Services Electronic Program, Department of Energy, Sundstrand Corp., Air Force Office of Scientific Research and Jet Propulsion Laboratory.

His area of research is robust multivariable control systems. He approaches his studies in three areas: theoretical development in control systems, development of design methodologies, and advance control applications through cooperation with industry.

He has managed industry-sponsored research and development in systems-application, particularly to water resources and power systems. Also he has supervised large-scale systems theory research in design of low-order dynamic regulators and development of methods for structural decomposition of dynamic systems.

Specifically, Sundstrand Corp., the U.S. Air Force and Department of Energy have both sponsored and picked up on developments.

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From the Department Head



In the past year, there have been many actions taken, both at the campus level and the department level that will affect the education of our undergraduate students in the next decade. The University of Illinois at Urbana-Champaign Campus Senate passed a sweeping new set of general education requirements last year which should be implemented within the next year for incoming students in the Fall of 1991 at the latest. The requirements include:

1) *English Composition*. Each student will fulfill a two-part requirement: the first level course requirement may be met by satisfactory completion of an approved course in rhetoric, speech communication, or English as an international language. The second composition course requirement may be met by satisfactory completion of a course taken in any component of the undergraduate program so long as the course requires sufficient writing to be approved and designated as satisfying the demands of the second level composition requirement.

2) *Quantitative Reasoning*. This requirement may be fulfilled by courses in mathematics, computer science, statistics, or formal logic.

3) *Foreign Language*. Each student will obtain credit at the third college semester level or satisfactorily complete the third secondary school year of one foreign language.

4) *Natural Sciences and Technology*. Each student will satisfactorily complete at least nine credit hours of approved course work in Natural Sciences and Technology.

5) *Humanities and the Arts*. Each student will satisfactorily complete at least nine credit hours of approved course work in Humanities and the Arts.

6) *Social and Behavioral Sciences*. Each student will satisfactorily complete at least nine credit hours of approved course work in the Social and Behavioral Sciences.

7) *Cultural Studies*. Each student will obtain credit for two courses approved for satisfaction of the Cultural Studies requirement. One of these must be approved and designated as concentrating on western culture and one on either non-western culture or American subcultures and minority groups. These courses may fulfill other curricular requirements.

These new requirements expand the current social science and humanities requirements in the engineering program by the addition of the cultural studies requirements and the foreign language requirements. It is our hope that all of our entering freshmen will have had foreign language in high school and we strongly encourage them to continue their foreign language training

College Student Group Honors GE Faculty

Five faculty members from the Department of General Engineering have been designated Outstanding Advisors by the College Dean's Student Advisory Committee.

The honorees are: Profs. **James V. Carnahan**, **Wayne J. Davis**, **David C. O'Bryant**, **Mark G. Strauss** and **Deborah L. Thurston**.

They were honored on April 3 at the Advisors Award Banquet at the University Inn. **Prof. Harrison Streeter** was the speaker at the banquet. His topic was "Engineering Education—Preparation for Real Life?"

Knights of St. Pat Honor GE Students

Three students from the Department of General Engineering were named 1990 Knights of St. Pat.

They were: **Elizabeth Auer**, Park Ridge, Il.; **Stephanie Connolly**, Deerfield, Il.; and **John Marchelya**, Glen Ellyn, Il.

The students were honored at the annual St. Pat's Ball, March 3, in the Illini Rooms, Illini Union.

while in the University. Clearly we are in an international economy and, in my opinion, language skill is going to be of prime importance for all engineers who will be practicing in the 21st century.

Within the Department we have been re-examining the core of the General Engineering curriculum; no firm decisions have yet been made on a curriculum revision. I wish to report to you that the departmental curriculum committee has been meeting weekly throughout this academic year and has engaged the entire faculty in a timely and thoughtful discussion of the fundamental bases of our educational program. Clearly, the disciplinary makeup of the Department has changed in the last 20 years and the needs of the engineer in the 21st century may be somewhat different than the educational needs of the engineer preparing for practice in the late 20th century. We hope to have the wisdom to choose correctly when we set out to revamp our curriculum in this next year. There are many forces influencing the direction of the curriculum; at the department level, at the college level as it affects the first two years in the curriculum, and at the university level as it affects the general education requirements. I would appreciate hearing from you regarding the good points and the bad points of your engineering education and areas that you feel need more focus and less focus in a new curriculum for the General Engineering of the 21st century.

It is with both a sense of regret and happiness that I must recognize that our long-time colleague, **Harry Streeter**, is retiring at the end of this semester. Harry's wit, gentility, and probity as a teacher, professional, and friend will be sorely missed in the Department. He plans to take it easy and to do a fair amount of traveling for the first few years of his retirement, and we wish good health and happiness to Harry and Imie as they approach these retirement years—and we are all happy that they are able to do this.

Thomas J. Conry
Professor and Head

GE Department Exhibits Win Open House Awards

Four exhibits by GE students were cited during the annual Engineering Open House March 4-5. Theme for this year's event was "Dare to Discover."

A project, "Tour de ISGE," combining mechanical and electrical disciplines received a third place award in the "Just for Fun" category. A computer program generated an obstacle course for two fixed bikes. Students coordinating the exhibit were **Brian Gile**, **Deepen Modi**, **Barb Timbers** and **Peter Mui**.

Another exhibit designed by **Bill McGrath**, a sophomore, was a support strut for the Champaign Mass Transit System. It was beneficial to handicapped riders boarding and getting off the buses. The design which will be implemented by Mass Transit in Jan. 1991 was given a third place in Research in a Given Field—Undergraduate.

A project presenting a simulation model for a proposed flexible manufacturing system to be implemented at the US Army Arsenal at Rock Island, Il., was awarded a fourth place. Its category was Research in a Given Field—Graduate and was presented by **Eric Hedlund**.

Jamie Gravgaard and **Chris Johnson** were in charge of the final exhibit highlighting recent technological developments in Real Time Monte Carlo simulation. It placed fifth in the category, Presentation of Research.

Eugene Del Fiacco of ISGE was the department Open House chairman.

Prof. Medanic (Continued from page 1)

Researchers from General Electric have applied his methods to wind turbines, heat exchangers and voltage regulators. The Japan Power Network will employ the solution from these developments to control of their system.

Researchers from Boeing have shown interest with a case study and **Prof. Medanic** is presently collaborating with Ford Motor Co. on applications in control system for autos.

Medanic is a member of a strong control group in the Coordinated Science Laboratory, perhaps the premier group in the world. Its research covers all aspects of control theory and design methodology. His own emphasis is on decentralized control of large-scale systems, reliable control and robust control of continuous and discrete systems including application to electro-mechanical systems and space structures.

Medanic is presently supervising six doctoral students.

Coming to the UI as a visitor for the first time in 1966 for a 3-year stint, **Medanic** followed the advice of a Yugoslavian colleague with Illinois ties. He returned in 1976 for another three years and returned this time in 1983.

"I now feel this is my second home. There is no place like it to match the library, computer facilities, laboratories and learned colleagues," he says. "The total environment is outstanding."

Medanic is a member of IFAC Committee for Theory; and associate editor, IFAC Journal Automatica and IEEE Transactions on Automatic Control.

General Engineering Will Be Playing Soon At A Location Near You

In an effort to spread the word about helping small to mid-sized Illinois industry, a series of regional CEO seminars are being held. Starting in Fall, 1989, seminars have been held in Rockford, Peoria, and the Quad Cities. Spring 1990 brings G.E. to St. Charles and Schaumburg.

The format for the program includes an introduction by **William Dick**, Director of Corporate Programs who provides some insight into the size and mission of the College. **Professor Roland Ruhl** and **Rodney Hugelmann**, as well as **Research Engineer Harry Wildblood**, provide examples of department design activity at all levels: graduate, undergraduate and technology audit.

The old adage goes, "Ask a man who knows one!", is applied to these programs. In the fall series **Roger Lundstrom**, President of Century Tool and Manufacturing Co. of Cherry Valley, Illinois, addressed the Rockford group on how his Technology Audit was helping his company.

In the spring meeting **Jim Purdin**, Executive Vice President of Amerock Co. in Rockford, has volunteered to address industry on the success of his recently completed Technology Assessment.

Prof. Ruhl notes that industry has responded at all levels: "Amerock came to the Rockford CEO meeting and decided to sponsor. Their project was so successful that **Jim Purdin** and another company engineer have volunteered to address the next seminars and thereby keep the ball rolling!"

"Spring 1990 has brought yet another record enrollment for GE 242," notes **Prof. Hugelmann**. "Twenty-three projects are ongoing and that number is limited by faculty size."

Thirteen projects were from "new" companies who saw the quality of our work at a CEO meeting and wanted to start their association with UIUC-GE through the GE 242 program." A fourteenth project was a follow-on from a company that had completed a Technology Audit.

"Twenty years ago when GE started seeking industry support for a capstone senior design course, it was a novelty. Now all ABET accredited schools must offer one. The competition for industry support is definitely getting much stronger for several reasons, including the above. However, with the ability to offer a full menu of programs to industry, including Tech Audit, graduate and undergraduate projects and the efficiency of addressing 15-20 key decision makers in a single day and finally the quality of our programs, students and faculty all combine to allow successful and significant industry support," notes **Prof. Ruhl**.

Manufacturing software and software support are becoming more and more important to Illinois industry, and the Technology Audit is keeping on. Currently the Technology Audit Program has purchased Manuplan and Slam and Slam System to more effectively provide service to industry in spotting opportunities for improvement and proving out proposed process changes before capital expenditure.

Gamma Epsilon Names Co-Recipients for 1990 Distinguished Alum Award

The 17th annual Gamma Epsilon Distinguished Alumni Award has been shared this year by **Kathryn Davis**, '74, New York City, and **Leroy E. Kendricks, Jr.**, '77, Champaign.

Recipient of the honor each year is selected for both outstanding accomplishments in one's profession and continuing contributions to the Department and/or College of Engineering.

Plaques were presented to the honorees at the annual GE Honors Banquet April 19 by **Scott Cousins**, Northbrook, president of Gamma Epsilon.

Davis was graduated from the U. of I. with a BS in GE in 1974 and received a MS (CE) in 1975. She was awarded a MBA in 1986 from Harvard Business School.

From 1979-83, **Davis** was project manager and geotechnical engineer for CH2M Hill Northwest, Inc., Seattle, Wa. In 1983 and 1984 she was manager of technical services for American Society of Civil Engineers, NYC.

The co-recipient was Strategic Planner and Business Manager of Beals and Thomas, Inc., Westborough, Ma., and was Senior Vice President, Fogel and Associates, Inc., NYC, 1986-87.

From 1987-88, she was President of Engineering Management Consultants, NYC.

In February, 1988, **Davis** joined Merritt and Harris, Inc., NYC, as Vice President for Marketing and Planning. The firm is a nationwide construction consultant which monitors new construction and renovation for commercial lenders and performs engineering due diligence for institutional investors.

She is a registered professional engineer in the State of Washington and a member of Tau Beta Pi and Gamma Epsilon.

Kendricks received his BS from UIUC in 1977. He is President and CEO of Integrated Controls and Computer Systems, Inc., Champaign.

A native of Chicago and graduate of Chicago Lindblom Technical high school, he joined the firm of Clark, Dietz and Associates, Champaign, in 1975 as a part-time engineering design technician in the electrical department.

Upon graduation, **Kendricks** became a design engineer for the firm. He advanced through several major positions within the company and was eventually responsible for a staff of 14.

He put together a capable and motivated staff and formed his present company.

As President and CEO, **Kendricks** is responsible for development of new business, planning the direction of the company and general administration of the business. In the past 19 months, the firm has expanded from a staff of 6 in Champaign to a staff of 15, split between Champaign and Cedar Rapids, Ia.

He is a registered professional engineer in Illinois, Indiana, Maryland and Florida. He is a member of the Illinois Society of General Engineers, the Illinois Society of Professional Engineers and the board of directors of the GE Alumni Association.



Panic Stop Test Project Attracts State Attention

Recently completed work by **Prof. Roland Ruhl** and students **Neil Rosenblum**, GE '89, **Jonas Kelioutis**, GE '89, and **Tony Cerda**, GE '89, has received some notoriety. The Illinois Concrete Council sponsored work requiring real life testing of domestic American sedans on both concrete and asphalt road surfaces. Skid tests were conducted on selected road surfaces in Rockford, Springfield, and Urbana.

"We had great confidence in the skill of our students but prudence dictated that we retain a professional race driver to complete the highway speed (60 MPH) panic stop on wet rutted pavement," **Prof. Ruhl** notes.

The study confirmed that washboarding both wet and dry can cause significant lengthening of panic stopping distance. Likewise, rutting will cause significant lengthening of stopping distance wet, but not dry.

Prof. Ruhl presented his results before the Select Committee on Bridges and Highways of the Illinois House of Representatives in Marion in February. WMAQ (NBC) Channel 5 in Chicago filmed the student tests near Springfield and interviewed **Prof. Ruhl** in Marion. A short special was run by NBC as part of the investigative reporter Dick Kay's sequence on road maintenance in the state.

Ruhl notes that this project is the third in a series of projects involving skid testing of vehicles. A previous study resulted in a recent publication by **Prof. L. D. Metz** and **Prof. Ruhl** on "Skidmark Signatures of ABS-Equipped Passenger Cars." Presented at the SAE International Congress and Exposition in February, 1990, and also published in "Accident Reconstruction: Human, Vehicle and Environmental Factors," SAE Special Publication 814.

Prof. Scott Burns

A paper, "Graphical Representation of Design Optimization Processes," presented by **Prof. Scott Burns** at the National Science Foundation Design and Manufacturing Grantees Conference, Jan. 8-12, Tempe, Az., has been accepted for publication in the conference's proceedings.

Prof. Scott Burns has received a \$15,000 National Science Foundation grant entitled "Research Experiences for Undergraduates."

Present Department Honors on April 19 At Awards Banquet

The annual General Engineering Department Awards Banquet was held on April 19 at University Inn in Champaign.

Jointly sponsored by Gamma Epsilon and the Department, awards were presented to students, a faculty member and two alumni.

The Edward S. Fraser Award for the outstanding GE senior scholar went to **Stephanie Ann Connolly**, Deerfield. She received \$200 cash and a plaque and her name will be added to a permanent wall plaque in the Transportation Building.

Joseph Macro, Schaumburg, was recipient of the Randolph P. Hoelscher Award. The \$100 grant and certificate is given to the outstanding junior student based on scholarship, leadership promise, activities and cultural development.

This year Gamma Epsilon selected two GE graduates for the Distinguished Alumni Award. **Kathryn N. Davis**, New York City, and **Leroy E. Kendricks, Jr.**, Champaign, share the 1990 award. (Details appear in a separate item.)

Prof. Scott A. Burns was presented the Outstanding Professor Award. The recipient is determined by Gamma Epsilon and receives \$500 and a plaque.

The Jerry S. Dobrovolny Leadership Scholarship went to **John Marchelya**, Glen Ellyn. Criteria for the newest department award is demonstrated by outstanding qualities as evidenced by such activities as participation in student professional societies, campus organizations, academic scholarship, faculty-student senate, off-campus organizations, legislative initiative or any other recognized efforts.

Peter Webster received the William A. Chittenden Award as the most outstanding Master of Science graduate student in General Engineering. It includes a certificate and \$1,000 in cash.

Other awards were:

—Herbert J. Sprengel Award: \$100 to **Joseph Lohmer**, Mattoon, for a balsawood project.

—Ingersoll-Rand Award: \$500 cash awarded to two students, **Laura Ann Antonacci**, Hampshire, and **Kimberly A. Duckett**, LaGrange, for leadership potential, academic excellence and professional promise.

—Bernt O. Larson Project Design Award (for 1989 calendar year): \$150 each to **John Kozel**, Flossmoor; **Tim Stuart**, Homewood; **Mike Snyder**, Medford Lakes, N.J.; and **Greg Vydra**, Chicago, for their design, "Production Control System."

Second place of \$75 each to **Kenneth K. Raczek**, Grayslake, Il., **Traci E. Wenzel**, Lansing, Il., and **Kenneth A. Zarembski**, Hanover Park, Il.

Stephanie Connolly has been designated as a Bronze Tablet Scholar. Her 5.0 grade-point average places her in the top three per cent of all University graduates.

Other honors for GE faculty and students appear elsewhere in this issue.

Prof. Scott A. Burns Receives Everitt Award

For the second consecutive year a GE faculty member has been named to receive the Everitt Award for Teaching Excellence by the College of Engineering.

Prof. Scott A. Burns received \$1,000 and a plaque at the 26th Annual Engineering Awards Convocation on April 20. In 1989 the honor went to **Prof. James V. Carnahan** of GE.

The prestigious award was established in 1968 upon the retirement of the late Dean William L. Everitt from contributions by his friends.

The citation read at the ceremony follows:

"Excellence in teaching implies certain personal characteristics and behaviors that are exhibited by the professor—respect for students, generation of enthusiasm, knowledge of subject and communications skills. Scott Burns, assistant professor of general engineering, exhibits all of these characteristics. He sets very high standards for his courses, which the students are expected to achieve and his interest in his students encourages them to excel. A Presidential Young Investigator, he has a broad and deep knowledge in structures, finite-element methods, shape optimization, chaos and fractals, and computer systems. As one of the best communicators in his department, he is able to bring his valuable research strengths to his students to enrich their educational experiences."

GE Senior Receives Annual Pierce Award

John Marchelya, Glen Ellyn, a senior in the department of General Engineering and president of the Engineering Council, has been awarded the Stanley H. Pierce Student Award by the College of Engineering.

The award was first presented in 1969 and consists of an engraved silver bowl and a check. It was presented at the Annual Engineering Awards Convocation on April 20.

The honor annually is given to the undergraduate student who is deemed to have "done the most to develop empathetic student-faculty cooperation."

The 1989 Pierce award went to **Louis J. Wozniak**, also a GE student.

Leadership Roles

Several GE students have leadership roles in College of Engineering premier organizations.

They include:

1989-90 Engineering Council: **John Marchelya**, senior, president; **Jason Struthers**, sophomore, personnel vice president; **Bill Buttimer**, senior, awards vice president; and **Kelsey Milman**, junior, SITE chairman.

1990-91—**Jason Struthers**, sophomore, executive vice president; **Kelsey Milman**, junior, personnel vice president; **Tiffany Harrisch**, sophomore, administrative vice president; and **Michael Loudon**, freshman, secretary-treasurer.

1989-90 Tau Beta Pi: **Stephanie Connolly**, senior, recording secretary; and **Joe Macro**, junior, special projects chairman.

1990-91—**Joe Macro**, junior, treasurer; and **Jeff Underoth**, sophomore, general secretary.

Faculty Notes

Prof. Mark Strauss

Prof. Mark Strauss has presented a paper, "Rehabilitation Engineering at the University of Illinois," at the 1989 American Society of Engineering Educators Annual Conference. He also gave a paper, "The Development of an Instrumented Wheel to Determine the Handrim Forces during Wheelchair Propulsion," at the annual winter meeting of the American Society of Mechanical Engineers. He has written a chapter in the National Science Foundation 1989 Engineering Senior Design Projects to Aid the Disabled, edited by John D. Enderle.

New funding in the amount of \$15,000 from the Veterans Administration and \$4,280 from the UIUC Bioengineering has been granted to **Prof. Mark Strauss**.

Prof. Mark Strauss will be chairman of the session, Rehabilitation Engineering Education Future Needs, at the American Society of Engineering Educators Conference this June. He also has assisted the Illinois Department of Rehabilitation Services to obtain more than \$1.5 million from the U.S. Department of Education to increase the level of independence and quality of life of people with disabilities in the State of Illinois by the use of technology.

Prof. Louis Wozniak

Prof. Louis Wozniak presented a paper, "A Graphical Approach to Hydrogenerator Governor Tuning," Feb. 1990, at the IEEE Power Engineering Society annual Winter meeting. The paper also has been accepted for publication in IEEE Transactions on Energy Conversion.

A paper, "Control Synthesis for an Impulse Turbine: The Bradley Lake Project," by **Prof. Louis Wozniak** and **F. Collier** has been accepted for the IEEE Power Engineering Society 1990 Summer Meeting.

Prof. Louis Wozniak, **F. Collier** and **J. Foster** will present, "Digital Simulation of an Impulse Turbine: The Bradley Lake Project," at the IEEE Power Engineering Society. The paper also has been accepted for publication in IEEE Transactions on Energy Conversion.

Prof. Manssour Moeinzadeh

A joint paper co-authored by **Prof. Manssour Moeinzadeh** and **Prof. Mark Strauss**, "The Development of an Instrumented Wheel to Determine the Handrim Forces During Wheelchair Propulsion," was presented at the 1989 ASME Winter Meeting in San Francisco.

Prof. Moeinzadeh had the following three papers published in scientific journals:

—"Non-linear Finite Element Analysis of a Frame Stiffened with Tension Members," *Journal of Computers and Structures* (co-authored with **Mary Ann Widing**);

—"Aerodynamic Positioning and Performance in Wheelchair Racing," *The Adapted Physical Activity Quarterly* (co-authored with **Hedrick Wang** and **Adrian**); and

—"Finite Element Modelling of a Tennis Racket with Variable String Patterns and Tension," *International Journal of Sports Biomechanics* (co-authored with **Mary Ann Widing**).

Prof. David C. O'Bryant

Prof. David C. O'Bryant presented an invited paper, "Engineering Education Update," to the Technical Design Associates annual meeting Oct. 16, 1989, in Portland, Or. He serves on the TDA board of directors.

History Made at GE Initiation Banquet

For the first time ever, a brother and sister were inducted simultaneously into Gamma Epsilon, General Engineering honorary.

Lisa Marie and **Scott J. Novasel** of Tinley Park, were among the 33 initiates honored at the annual banquet held Nov. 9, 1989.

The others were:

Cynthia K. Agemura, Skokie; **Greg A. Blunier**, Pontiac; **Dave Briglio**, Barrington; **Bruce Allen Davis**, Chillicothe; **Brian C. Gile**, Rockford; **James M. Gravgard**, Bushnell; **Kim Marie Hanlon**, Long Grove; **Christopher B. Johnston**, LaGrange;

Thomas Calvin Kane, Palos Park; **John Z. Kosowski**, Urbana; **Robert J. Lancaster**, Rossville; **Joseph Michael Lohmar**, Mattoon; **Michael P. Lomonaco**, Wheaton; **John Christian Marchelya**, Glen Ellyn; **Paul W. Mochel**, LaGrange; **Julie Nochumson**, Buffalo Grove;

Scott Patrick Orr, Naperville; **Henry George Osterkamp**, Evanston; **Julie A. Reyer**, Palatine; **Jay Adam Saltzman**, Northbrook; **Drew Donald Saunders**, Lake Forest; **William H. Scherer**, Pekin; **Joseph Milan Schwarz**, Deerfield; **Mark Edward Simek**, Glen Ellyn;

James R. Taylor, Decatur; **Stacia A. Trout**, Sherman; **Julie A. Upper**, Quincy; **Irynne T. Vallejo**, Skokie; **Mark James Vilcek**, Tinley Park; **David S. Voorhees**, Besenville; and **Douglas L. Waco**, River Forest.

The 1989-90 officers are: President, **Scott B. Cousins**, Northbrook; vice president, **Linda M. Gogola**, Oak Forest; secretary, **Elizabeth Hausler**, Plano; and treasurer, **Gregory Davis**, Belleville.

Lincoln Arc Welding Cites GE Students

A senior project team in General Engineering has received a merit award in the 1989 Student Engineering Design Competition of the Lincoln Arc Welding Foundation.

The \$250 award was won by **John Kozel**, Flossmoor; **Tim Stuart**, Homewood; **Mike Snyder**, Medford Lakes, N.J.; and **Greg Vydra**, Chicago, for their 242 Project: "Production Control System."

Prof. S. Daniel Thompson was faculty advisor.

During the past 19 years, GE students have received 24 awards from Lincoln Arc Welding.

Prof. Mark Spong

A paper, "Parameter Estimation Using Nonlinear Observer Theory," will be presented by **Prof. Mark Spong** during the American Control Conference May 23-25 in San Diego.

Prof. Mark Spong will be in Mexico City May 26-June 17 as part of a research project with **Prof. Romeo Ortega** on Adaptive Control of Robots.

Prof. Mark Spong was invited to attend a seminar on Adaptive Control of Robots at Yale University March 22.



THE STUDENTS' VIEW

From the Illinois Society of General Engineers

Summary Issue No. 90-1

April, 1990

Honeywell, Microswitch Division at ISGE Meeting

Mr. Robert Bicking, product development manager with Honeywell Microswitch division of Freeport, Illinois addressed the Society at its February 13 general meeting. Mr. Bicking, an electrical engineer from U. of Minnesota, gave an overview of the design process followed by the case history describing the development over the last seven years of a flow sensor. The micro size sensing element measures .04 sq. in. Mr. Bicking stressed the necessity of good technical dialogue and a multi-disciplinary approach to engineering design.

With two children at U. of I., Steve, a senior in General Engineering and Sue, a sophomore in Electrical, Mr. Bicking describes himself as tuition poor. He was accompanied by his wife Elaine.

Engineering in Pharmaceutical Companies

Dave Swalve, I.S.G.E.'s November guest speaker, focused on the multidisciplinary nature of pharmaceutical companies. These companies are part of a research-driven, 60 billion dollar business.

The pharmaceutical industry is particularly advanced in lab automation for repetitive testing and for control of contamination. Computer vision, robotics and dedicated automation are components of fully computerized testing.

Project engineers are responsible for all facets of the product, including costing and budgets. Manufacturing engineering and process analysis is a third major segment of the pharmaceutical industry's need for engineers.

Mr. Swalve is a Project Engineer with Eli Lilly and Company of Indianapolis.

Eli Lilly

I.S.G.E. and I.I.E. organized a trip to Eli Lilly Headquarters in Indianapolis on February 20th. About fifteen students took a bus down to Lilly and toured two of its production sites. Eli Lilly is a world-wide pharmaceutical producer with many subsidiaries ranging from agricultural chemicals to advanced technology medical equipment. Students were treated to a brunch, shown a multi-media overview production of Lilly products and goals, given various tours in small groups by Lilly employees, and introduced to Lilly placement objectives. The trip proved to be useful both in terms of job search and industry education.



E.O.H. News

This year's Engineering Open House "Dare to Discover" was held March 3rd and 4th across the Engineering Quad. The General Engineering Department had an impressive display of exhibits of the various research topics performed throughout the department. These exhibits included a 3-D AutoCad display, a computer integrated bicycle obstacle course, an Inertia software demonstration, computer simulated manufacturing display, and a project describing the design of a guard rail for MTD bus chair lifts. Awards were received in the following categories—"Just For the Fun of It" for the bike race, "Research by an Undergraduate Student" for the MTD guard rail design and "Research by a Graduate Student" for the manufacturing simulation display. Congratulations to all those who worked so hard for these awards and to Gene Del Fiocco for pulling together our department's exhibits.

Advice to Prospective ISGE Officers

Candidacy to public office implies a commitment of time and energy on your part and an expectation on the part of the constituency. You should consider your obligation that of a 3-5 hour course with equivalent priorities in your schedule. If you don't deliver, it will be quite obvious. If your grades are most important to you, devote your time to them, not to an activity. You may have great ideas—you just can't expect others to follow thru. It has to be you.

Why, then, run for the I.S.G.E. position? It is because you are interested in learning how to make people systems function. It is because you want to learn to be an organizer and a motivator. It is because you need a laboratory for your administration education. In short, it is because you must develop skills necessary to live up to that resume entry that cites you as a past officer of I.S.G.E.

ISGE Welcomes Alum

"Working for a Small Company—A Career Option" was addressed by **Leroy Kendricks**, (B.S.G.E., 1978), of Integrated Controls and Computer Systems, I.C.C.S., a Champaign based controls firm. Mr. Kendricks pointed out that the 'easy getting' of jobs for University of Illinois engineers is not a dear blessing. In reality it deprives them of the experience which would be valuable to them on follow-up career changes. He urges graduates to take the dominant role in job searches by learning about the company interviewing and specifically about the position being offered.

Accompanying Mr. Kendricks was **Jan (Mueller) Lilly**, (M.S.G.E., 1989), whose relocation from Sundstrand brought her to I.C.C.S. Jan's message was clear: "Above all be happy at what you are doing—you'll be better at it."

Over the past three years, I.C.C.S. has hired six General Engineering students on a part time basis. Two of the six full time engineers are also graduates of General Engineering.



Yes, I want to become an

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ALUMNI NOTES

1943 Raymond M. Standahak, MS (ME) '51, Case Institute of Technology, was recipient of the Air Breathing Propulsion Award, July 11, at the Engine Controls and Diagnostics Technology Conference. Standahak is president, RMS Consultants Limited, Alexandria, VA.

1950 Samuel Dean Abrecht is president of the Abrecht Well Drilling, Ohio, IL. The firm drills all sizes of water wells throughout the United States and overseas.

1953 Harold J. Slaughter of Omaha, NE has retired as a senior engineer with AT&T Co. (formerly Western Electric Co.) after 36 years service.

1961 Richard K. Van Weelden, MS(EE) '71, ITT, is engineering manager of Fidelt Tone, Inc., Arlington Heights, setting up new laboratory for characterizing and modeling semiconductors. He resides in Matteson, IL.

1967 James E. Freed, MS '69 and MBA '74, NIU, is Director of Manufacturing Operations, Rockford Power Train, Rockford.

1968 George P. Friedrichs is manager, Contract Engineering, Control Components Inc., Rancho Santa Margarita, CA. The department custom engineers critical service control valves for the power, refinery and oil/gas production industries.

James S. Schmohe, (MS (TAM) '70, has moved to West Chester, OH, from Fairfield, OH.

1974 Tom Keel Fleming has been named President of Sawkill Valley Builders, Inc., Milford, PA. The firm does general construction in the Poconos and surrounding areas of New Jersey, New York, Pennsylvania, Rhode Island and Connecticut.

Thomas H. Nicol, MS (ME) '83, U. of Okla., has been promoted to group leader, Technical Support/Engineering, Fermi National Accelerator Laboratory, Batavia, IL. The group is responsible for the design and analysis of superconducting accelerator magnets for superconducting super collider and Fermilab upgrades.

Steven J. Smiley, MBA, '80, U.W., Milwaukee, has been named vice president of operations, ASI Technologies, Inc., Milwaukee, WI. He resides at Mequon, WI.

1976 William Scott Bennett, MS (EE) '78, has been promoted to lead engineer for the attitude control subsystem of Martin Marietta, Denver, CO. He resides at Englewood, CO.

Gary Alexander Hettler has been named safety engineer, U.S. Dept. of Energy, Paducah, KY. He has recently moved from Anaheim, CA, to Benton, KY.

John F. Meggesin, MBA '85, Illinois Benedictine College, has accepted a position as Vice President of Sales and Marketing at Borg Instruments Inc., Delavan, WI. The firm is a subsidiary of Diehl GMBH, Nuernberg, W. Germany. He resides in Naperville, IL.

Thomas W. Tobin, JD '80, Pace U., announces the birth of a second child, Hayley Ai, in Tokyo, Japan. He is managing partner of Wilson, Elser, Moskowitz, Edelman and Dicker in Tokyo.

Mark A. White, MBA '79, Washington U., has been employed as regional manager, Arch Mineral Corp., Big Stone, VA. He previously managed a 2 mm TPY Surface mine in Southern Illinois. In his new assignment he will start up several mining operations. He resides in Kingsport, TN.

1977 John Baruch of Arlington Heights, IL, is business manager of PCA, Ekco Products, Kaiser Packaging, Northbrook, IL.

James H. Christensen has been promoted to engineering specialist, Baxter Healthcare Corp., Round Lake, IL. He is responsible for operations and technical support for the engineering computer center and campus-wide network of 300 work stations. The Christensens, who live at Palatine, IL recently had a second child.

Terry W. Ditsch, MBA '83, DePaul U., was promoted to manager of Technical Publications and Training, Komatsu-Dresser Co., Libertyville, IL. He is a resident of Elmhurst, IL.

Judith V. Swinnerton, MBA '85, U. of Colorado, is Manager—Data Network Design, U.S. West Communications, Denver, CO.

Thomas S. Zych has been named President, Titus Division of Philips Industries, Inc., Richardson, TX. The Zychs who reside in Plano, TX, announce the birth of twins as their second and third children.

1978 Barbara Doheny Franciose, MS (EE) '81, Marquette U., is manager, Digital X-ray Engineering, Siemens Gammasonics. A resident of Elk Grove, she announces the recent birth of her fourth child.

Richard W. Frewert, MBA '81, U. of Chicago, has accepted a position as senior consultant with Oracle Corp., Belmont, CA. He resides in Foster City, CA and was formerly with Andersen Consulting at Sacramento, CA.

David W. McCune, New Lenox, IL, was recently promoted to Project Engineering Supervisor, Mobil Oil Corp., Joliet, IL. He announces the birth of their first child during the summer.

Roger D. Reem, MBA '83, WIU, has been promoted to corporate proposal manager for Mason & Hauger—Silas Mason Co., Inc., Lexington, KY. He has been with the firm since 1978 in Burlington, IA. He also reports he was married on December 23.

Cathy L. Ward has been promoted to National Sales Manager, Fire and Security, Commercial Building Group, Honeywell, Inc. She has relocated from San Francisco to Minneapolis.

1979 Jay Richard Goldberg, MS (Bioengineering) '80, U. of Michigan; MS (Engineering Management) '86, Northwestern U., is R&D Group Leader, Surgitek. He resides in Libertyville, IL.

Ruben Caballero Miramoutes is an Associate Gas Utilization Engineer, Peoples Gas Light & Coke Co., Chicago.

1980 Gary Allen Gluck is a Residential Product Specialist, Square D Company, N. Hollywood, CA. He is a resident of Palmdale, CA.

Susan Elizabeth Kenney has started her own firm, the Human Excellence Enterprise in Newport, NSW, Australia. After eight years with IBM, Kenney writes: "I quit to start my firm which presents consulting and seminars about business image. My engineering degree gives me

an understanding of the physical world and now my work uses that knowledge to relate to the non-physical world." She was formerly located in Austin, TX.

1981 James D. Anfield, MBA '85, DePaul U., has been named Program Manager, Strategic Planning COVIA (The Computer Reservations System Company of United Airlines).

Jean A. Manning Phillips has accepted a position as engineering coordinator with Cobb Mechanical Contractors, Inc., Colorado Springs, CO.

John A. Shouder, MS (GE) '88, has been named Development Associate, Oak Ridge National Laboratory, Oak Ridge, TN. He is manager of the IC engineer-driven heat pump program, sponsored by the U.S. Dept. of Energy. Goal of the program is to develop residential and commercial heat pumps powered by natural gas.

Sharon Marie West, MS (GE) '83, has been appointed Service Manager, Operations process Analysis, Illinois Bell Telephone, Chicago. She recently completed a 10-month internship at Bell Northern Research in Raleigh, N.C. West presented a paper on her work, "Operations Process Modeling Methodology," at the 1990 IEEE Network Operations and Management Symposium in San Diego, CA. She resides in Downers Grove, IL.

1982 Martha L. Anderson is employed by CAD/CAM Engineering, Indianapolis, IN.

Michael K. Biarnesen is employed as Section Head, Production Planning, Pharmaceutical Products Division, Abbott Laboratories. A resident of Grayslake, IL, he announces the birth of a first child.

Paul Victor Fryling, MBA '88, U. of Wisconsin-M, is a financial analyst, Amex Life Assurance, San Rafael, CA.

James D. Kanabay, Jr. has been assigned as an Instructor Bombardier in B-52 G/H, Castle AFB, CA.

David M. Kipari, MBA '84, has been promoted to Product Planning Manager, Motorola, Inc., Schaumburg, IL. He resides in Wheeling, IL.

1983 Douglas B. Franz has accepted a new position as Senior Product Specialist for Honeywell, Inc., Building Controls Division, Albuquerque, NM. He is responsible for defining new product requirements and developing product support materials for direct digital HVAC and building automation controls.

Keith Ronald King, MS (GE) '83, has received a 3-year assignment in Scotland by TRW. He announces the birth of a daughter this past summer.

Jill A. Koepke has been appointed Marketing Manager of SLM Instruments, Inc., Urbana, IL. She recently gave birth to a daughter.

James D. Newman, MBA '88, Northwestern U., has been named senior associate consultant with Richard Metzler and Associates, Northbrook, IL. He resides in Chicago.

Kelly W. Shoemaker, MBA '85, U. of So. Mississippi, has accepted a new position as Sales Engineer with Allen Bradley Co., Fairborn, OH. He previously was employed by General Electric.

1984 Scott Eiler who is employed by Electronic Data Systems Corp., Troy, MI, was on the UIUC campus recently. He was recruiting GE students for possible employment by his company.

Dwight Conrad Hausell has been granted a GM Scholarship and is studying for a MBA at Stanford Univ. He is employed as an Account Manager for Delco Remy, a division of GM.

Ann Chappell Kinder has been named Facilities Coordinator, Martin-Marietta, Sunnyvale, CA.

Kevin W. Krak has accepted a position as Construction Project Manager for TOTS "R" Us, Stockton, CA.

David L. Lukens was promoted to Senior Service Engineer for Combustion Engineering, Kansas Power and Light, Topeka, KS.

Mari Kay Waler Scott has accepted a position as General Foreman—Paint Production, GM Truck & Bus—Moraine Assembly, Dayton, OH. She formerly was employed at Pontiac, MI.

1985 Paul G. Stewart has relocated from New Jersey to accept a position as District Manager by Johnson Controls, Indianapolis. He now resides in Greencastle, IN.

1986 Thomas W. Fifer has accepted a position in Embassy Task Group Division with Srendrup Corp. as operations and maintenance specialist in Arlington, VA. He resides in Alexandria, VA.

Jennifer I. Ratliff Halstead is District Service Manager, Mitsubishi Motor Sales of America, Cypress, CA. She is a resident of Long Beach, CA.

Lawrence M. Kaplan has accepted a position as senior clerk for Judge Plager, U.S. Court of Appeals for the Federal Court, Washington, D.C. He lives in Arlington, VA.

Robert A. Link, ME (Systems Engineering) '88, U. of Va., has been named President, Manufacturing Systems Engineer, CIM Associates Inc., Madison, VA. A resident of Afton, VA, he announces the birth of his first child.

Pamela R. Miller has joined R. W. Beck and Associates as an engineer in the Seattle Consulting Office. She resides in Seattle, WA.

Tamara Ross Munk is a mechanical engineer, Advanced Technology, Inc., Arlington, VA. A resident of Washington, D.C. she recently passed the Virginia Fundamentals of Engineering Training Exam.

Henry Daniel Savino has accepted a position as structural design engineer, The Boeing Co., Seattle. He resides in Des Moines, WA.

Chris A. Weber, Hendersonville, N.C., is Processing Manager of Seneca Foods Corp., Mountain Home, NC.

1987 James D. Dickinson has moved from Wichita, KS to Torrance, CA. He is a Design Engineer, Northrop Corp., Hawthorne, CA.

Greg D. Kyburz has accepted a position as Midrange Systems-Software Specialist, IBM, Chicago. He resides in Naperville, IL.

John Mitola and Karin Ulstrup (GE) '88 were recently married. They now live in Chicago.

1989 Henry E. Cramer has been named a Design Engineer with Ralph Hahn & Associates, Inc., Springfield, IL.

Troy Robert Pawelko, Evanston, IL, is a Staff Consultant, Andersen Consulting, Chicago.

Jim Chris Stamatopoulos who is a resident of Wood Dale, IL has accepted a position as Division Engineer Commonwealth Edison, Bolingbrook, IL.