Purdue & ABE Reaching for “The Next Level”

In August of 2000 Martin Jischke became the new president of Purdue University. As part of his mandate from the Board of Trustees he organized a new strategic planning initiative, whose purpose would be to develop a set of goals and plans to take the University to the next level of excellence.

Over the past year a committee of university faculty, staff and administrators has developed a strategic plan for the University. The title of the new strategic plan is “The Next Level: Preeminence.” The document defines the mission of the University in society, and describes the roles of Discovery, Learning and Engagement.

To achieve these goals, the University and ABE Department will be going through a period of significant change. Emphasis will be placed on improving the University’s role in economic development as well as expanding teaching and research at the University. New areas for investment have been identified as nanotechnology, biological sciences, information systems and management. Current plans call for as many as 200 new faculty members to be added to the rolls over the next five years.

The Schools of Engineering and Agriculture are both engaging in a similar planning process. Bernie Engel is leading the strategic planning process for the ABE Department. We believe the Department is uniquely positioned to benefit from these new initiatives and priorities.
Dear Alumni and Friends:

The fall of 2001 has been quite eventful. In September, we dedicated the new engine dynamometer laboratory during the Industrial Roundtable. Also in September we celebrated Homecoming and Parents Day. It was great to see all of the parents, alumni and friends return to visit the department and campus. In addition, as you can see from our lead article, we have been hard at work preparing for external reviews, meeting with alumni and developing a new strategic plan. Purdue ABE continues to be ranked high in the national polls of best departments. With your continued support and the success of our graduates we aspire to become the best.

There are several new faces in the Purdue administration: Martin Jischke as President, Linda Frost-Mason as Provost and Linda Katehi as Dean of Engineering. Each of these individuals has great visions for helping Purdue move to the next level. We plan to work closely with them in the coming months to make sure ABE is part of their plan.

In the fall we completed two program reviews. The first was the ABET (Accreditation Board for Engineering and Technology) review of our engineering programs. The second was a review of our Agricultural Systems Management program by the ASAE. Kamyar Haghighi and Ganesan Narsimhan helped put the ABET reviews together and Mack Strickland and Dan Ess helped us with the ASAE review. The outcomes of the reviews were generally positive although we will not know the final results of the ABET reviews until later this spring.

In July Gary Krutz was honored as an ASAE Fellow. This honor is given to less than 2% of ASAE members based on their membership in the Society and their contributions to education and research in the Machine Systems area. In October Mike Ladisch received the AIChE award for outstanding research and teaching in the Food, Pharmaceutical and Bioengineering area. This award is sponsored by Merck and Company and was presented during the annual meeting of the AIChE meeting in Reno, NV.

The Department is currently looking for a Biological Engineer. The person filling this position will help us with teaching and research in the biological engineering area. The focus of their program will be to help us define and produce new products and processes that improve the economic viability of agriculture and the quality of life for consumers. We are expecting the person coming into this position to stimulate many new ideas and help us contribute to the new biological revolution in the agriculture industry.

As always, please feel free to drop by to see us if you are in the West Lafayette area. We will be happy to arrange a tour of the Department so that you can view first-hand the improvements that have taken place over the past several years.

Sincerely,

Vincent F. Bralts
Professor and Department Head

Our Mission:
“To prepare students, citizens, and industry for the future through innovative education and extension outreach programs, and the discovery of knowledge.”
Linda P. Katehi, associate dean for academic affairs in the University of Michigan College of Engineering, has been named dean of Purdue’s Schools of Engineering. Purdue Provost Sally Frost-Mason announced the appointment, effective January 1, 2002.

“We are excited that Linda Katehi has joined Purdue as dean of the Schools of Engineering,” Frost-Mason said. “She brings not only impeccable academic and administrative credentials but also an enthusiasm and vigor that will pay rich dividends to the Purdue family.”

Katehi (kuh-TAY-hee) received her doctorate and master’s degrees in electrical engineering from the University of California, Los Angeles. She earned her bachelor’s degree in electrical engineering from the National Technical University of Athens, Greece.

Katehi says, “The position of dean of engineering at Purdue provides an exciting opportunity to lead a strong engineering program into a future of academic excellence, visionary research and memorable teaching and learning experiences for the students. During the search process, I came to understand that Purdue aims at assuming a leadership position in the present environment of economic, technological and social change. I view this as a challenge and an opportunity.”

ABE Alumni and Industrial Advisory Boards

Alumni were invited to campus this fall to help us with our ABET accreditation and strategic planning efforts. Bernie Engel accepted the responsibility of leading the strategic planning effort in the ABE Department. The purpose of our planning is to identify opportunities and priorities for the future through consultation with faculty, staff, students and alumni.

The Food Focus Group met in October to develop new educational objectives for the Food Process Engineering program. Developing new FPE educational objectives was recommended by the fall ABET review team. In addition, discussions focused on future opportunities to expand the program to include bioprocess, biochemical or biological engineering. The group was successful, and since their meetings on campus they have continued their discussions via the internet.

In November a combined group of ABE Alumni & Industrial Advisory Board members met to discuss ABE’s accreditation reviews and help with the strategic planning. We asked this group to review our strategic plan draft and help us determine what curriculum changes and/or additions would be necessary for the Department to become preeminent in each field. The group felt that in some areas ABE had already achieved a level of preeminence; these areas were Food Process Engineering, Agricultural Systems Management, and the ABE graduate programs. However, in the area of Biological Engineering ABE still has some work to do.

The meetings were a great success. Faculty and alumni had a chance to interact, exchange ideas, and share success stories. In the future there will be a regular exchange of ideas with similar groups as we move ABE to the next level.
In September the Department completed several accreditation reviews. The Accreditation Board for Engineering and Technology (ABET) conducted a review of the Agricultural & Biological Engineering and Food Process Engineering programs. Our ABE review was conducted along with other programs in the Schools of Engineering. ABET accreditation is essential for students interested in taking the Engineering Fundamentals exam as the first step toward becoming licensed engineers.

For the Agricultural Systems Management program, the review is conducted by the ASAE P-206 Committee. The ASM program was evaluated based on materials presented to the committee and a decision to confirm the outcomes was taken. Purdue ABE is a leader in defining ASM programs around the country and continues to be among the best.

The implementation of the “outcomes based assessment” process has been an important component of all the program reviews. Outcomes Based Assessments focus on how well our graduates function once they graduate instead of how many science and laboratory courses were taken. This assessment process includes sending questionnaires to alumni and their employers. Over the past two years we have surveyed employers and generally received excellent reviews on our graduates. We believe the continuous feedback on the success of our graduates will make our programs even stronger.

The official word on the ABET reviews will not be available until late spring, but indications are that all program reviews were successful. We would like to thank all of our alumni and employers who participated in the new assessment process.

### ABE Program Outcomes

Graduates of this program will demonstrate:

**I. Basic Engineering Skills**
1. an understanding of the agricultural & biological engineering profession and practice;
2. the ability to understand and apply knowledge of mathematics, science, and engineering;
3. an understanding of, and the ability to, identify, formulate, model and solve problems for engineering systems;
4. the ability to design a system, component or process to meet desired needs in the area of food process engineering;
5. the ability to design and/or conduct experiments and analyze and interpret data;
6. effective use of appropriate techniques, skills, and state-of-the-art engineering tools necessary for engineering practice;

**II. Professional and Personal Skills**
7. an understanding of the global and societal impact of engineering practice, research and discovery;
8. a knowledge of contemporary issues;
9. appropriate and effective writing, speaking, and listening skills;
10. the ability to function on, and contribute effectively to, a multi-disciplinary team;
11. the ability to understand and practice ethical responsibilities in personal and professional life;
12. an appreciation for the value of life-long learning to maintain “life-balance” and achieve maximum potential.

### FPE Program Outcomes

Graduates of this program will demonstrate:

**I. Basic Engineering Skills**
1. an understanding of the fundamental principles of mathematics and science;
2. an understanding of food process engineering principles;
3. the ability to design and/or conduct experiments to analyze food systems and processes;
4. an understanding of, and the ability to, identify, formulate, model and solve problems for food process engineering systems;
5. the ability to design a system or a process to meet desired needs in the area of food process engineering;
6. effective use of appropriate techniques skills, and state-of-the-art engineering tools necessary for engineering practice;

**II. Professional and Personal Skills**
7. an understanding of the global and societal impact of engineering practice research and discovery;
8. a knowledge of contemporary issues;
9. appropriate and effective writing, speaking, and listening skills;
10. the ability to function on, and contribute effectively to, a multi-disciplinary team;
11. the ability to understand and practice ethical responsibilities in personal and professional life;
12. an appreciation for the value of life-long learning to maintain “life-balance” and achieve maximum potential.

### ASM Program Outcomes

Graduates of this program will demonstrate:

1. the ability to understand and apply the basic principles of mathematics, science, technology, management, and economics to agricultural systems;
2. the ability to identify agricultural systems problems, locate relevant information, develop and analyze possible alternatives, and formulate and implement solutions;
3. the ability to effectively use economic principles, scientific technologies, techniques, and skills necessary to manage agricultural systems;
4. the ability to recognize and define agricultural systems problems and the impact of their proposed technological solutions in an international and societal context.
5. the ability to understand and participate in performance evaluations, collect, analyze and interpret the data, and communicate the results.
6. the ability to demonstrate appropriate listening, speaking, writing, presentation, and interpersonal skills needed to interact and communicate effectively.
7. the ability to function with, and contribute effectively to, multi-disciplinary teams.
8. the ability to understand professional and ethical responsibilities and put them into practice.
Gary Krutz Honored As ASAE Fellow

The American Society of Agricultural Engineers (ASAE) named Gary W. Krutz, PE, a Fellow of the Society. Krutz was inducted at a ceremony held July 31 during the 2001 ASAE Annual International Meeting held in Sacramento, California.

Professor Krutz was honored for his outstanding contributions as an educator and researcher. He was recognized as an outstanding engineering educator of mobile power units and equipment used in production agriculture. His research interests involve traditional farm machinery automation along with the development of non-contact electronic sensors to assure food quality.

Only about two percent of the active members of ASAE have achieved the grade of Fellow. To be considered, an individual must demonstrate unusual professional distinction, with outstanding qualifications and experience in the field of Agricultural Engineering. Other requirements include 20 years or more profession or teaching of engineering and 20 years or more membership in ASAE.

Congratulations Gary!

Michael Ladisch Receives 2001 Food, Pharmaceuticals & Bioengineering Award

The American Institute of Chemical Engineers (AIChe) selected Michael R. Ladisch to receive the 2001 Food, Pharmaceutical and Bioengineering Award. This award is sponsored by Merck and Company and was presented for his outstanding contributions in the bioseparations area. The award was presented as part of the Food, Pharmaceutical and Bioengineering plenary session at the AIChe Annual Meeting in Reno, NV in November 2001. As part of the awards program Mike was asked to present a keynote address on the topic of Bioseparations. An abstract of his presentation is shown in the box to the right.

Ladisch is a Distinguished Professor in Agricultural and Biological Engineering and is the Director of the Laboratory On Renewable Resources Engineering (LORRE). He is renowned for his impact on the fuel alcohol industry where he demonstrated that corn used to produce ethanol through fermentation could also be used to dry the ethanol in the final states of the process. His research has significantly impacted the viability of the fuel alcohol industry. More recently his research has focused on the bioseparations using chromatography to purify biotherapeutic molecules, drugs and sugars.

Summary of Dr. Ladisch’s presentation:

Knowledge of the genetic basis of biological functioning continues to grow at an astronomical rate, as do challenges and opportunities of applying this knowledge to the production of therapeutic compounds, specialty biochemicals, functional food ingredients, environmentally friendly biocatalysts, and new bioproducts from renewable resources. While genetic engineering of living organisms transforms the science of genomics into treatments for cancer, diabetes, and heart disease, or products for industry and agriculture, the science and technology of bioseparations are the key to delivering these products in a purified form suitable for use by people. The methods, theory, and materials that reduce the science of bioseparations to practice, whether in the laboratory or the plant, are the subject of bioseparations engineering.
## ABE Students Earn Scholarships

### Purdue School of Agriculture Scholarships

<table>
<thead>
<tr>
<th>Scholarship Award of Excellence</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron M. Brame</td>
<td>Fr.</td>
<td>ABE</td>
<td>Huntington</td>
</tr>
<tr>
<td>Matthew G. Coulter</td>
<td>Fr.</td>
<td>ASM</td>
<td>Wheatfield</td>
</tr>
<tr>
<td>John T. Davis</td>
<td>Fr.</td>
<td>ASM</td>
<td>Depauw</td>
</tr>
<tr>
<td>Diane N. Fink</td>
<td>Fr.</td>
<td>ABE</td>
<td>Roxana, IL</td>
</tr>
<tr>
<td>Jacob L. Misch</td>
<td>Fr.</td>
<td>ASM</td>
<td>Wheatfield</td>
</tr>
<tr>
<td>Neil D. Moseley</td>
<td>Fr.</td>
<td>ABE</td>
<td>Clarks Hills</td>
</tr>
<tr>
<td>Brian M. Costigan</td>
<td>Jr.</td>
<td>FPE</td>
<td>Cincinnati, OH</td>
</tr>
<tr>
<td>Julie A. Crech</td>
<td>Jr.</td>
<td>FPE</td>
<td>Dayton, OH</td>
</tr>
<tr>
<td>Merysia Enggalhardjo</td>
<td>Jr.</td>
<td>FPE</td>
<td>Indonesia</td>
</tr>
<tr>
<td>Sahand Faghihi</td>
<td>Jr.</td>
<td>FPE</td>
<td>West Lafayette</td>
</tr>
<tr>
<td>Kylenz A. Kaiser</td>
<td>Jr.</td>
<td>FPE</td>
<td>Cedar Grove</td>
</tr>
<tr>
<td>Leah B. Maxwell</td>
<td>Jr.</td>
<td>FPE</td>
<td>Francesville</td>
</tr>
</tbody>
</table>

### Junior Scholarship

<table>
<thead>
<tr>
<th>Matthew W. Eckerle</th>
<th>Sr.</th>
<th>ABE</th>
<th>Columbus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carl J. Rivir</td>
<td>Sr.</td>
<td>ABE</td>
<td>LaOtto</td>
</tr>
<tr>
<td>Robert L. Schlipf</td>
<td>Sr.</td>
<td>ABE</td>
<td>Milford</td>
</tr>
<tr>
<td>Amanda Hume Stewart</td>
<td>Sr.</td>
<td>FPE</td>
<td>Winslow</td>
</tr>
<tr>
<td>Matthew J. Wright</td>
<td>Sr.</td>
<td>ASM</td>
<td>New Castle</td>
</tr>
</tbody>
</table>

### Senior Scholarship

<table>
<thead>
<tr>
<th>Matthew W. Eckerle</th>
<th>Sr.</th>
<th>ABE</th>
<th>Columbus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carl J. Rivir</td>
<td>Sr.</td>
<td>ABE</td>
<td>LaOtto</td>
</tr>
<tr>
<td>Robert L. Schlipf</td>
<td>Sr.</td>
<td>ABE</td>
<td>Milford</td>
</tr>
<tr>
<td>Amanda Hume Stewart</td>
<td>Sr.</td>
<td>FPE</td>
<td>Winslow</td>
</tr>
<tr>
<td>Matthew J. Wright</td>
<td>Sr.</td>
<td>ASM</td>
<td>New Castle</td>
</tr>
</tbody>
</table>

### Agricultural Research Fund Scholarship

Matthew W. Eckerle                                  Sr. ABE Columbus

### Chicago Farmers Scholarship

Carl J. Rivir                                       Sr. ABE LaOtto

### Farm Credit Services Senior Scholarship

Markelle J. Grossman                                Sr. FPE Wolcottville

### Fred M. Fraser Memorial Agriculture Scholarship

<table>
<thead>
<tr>
<th>Brian M. Bauman</th>
<th>So.</th>
<th>ASM</th>
<th>Rochester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leah B. Maxwell</td>
<td>Jr.</td>
<td>FPE</td>
<td>Francesville</td>
</tr>
</tbody>
</table>

### Leonard B. Clore Scholarship

Michael W. Herlitz                                    Sr. ABE Valparaiso
| Richard A. Hoeing                                   | Sr.            | ABE            | Westport       |

### Lewis Runkle Scholarship

Ryan A. Cook                                         So. ABE Trafalgar

### Michigan Milk Producers Scholarship

Adam E. Sederlund                                    Jr. ABE Charlotte, MI

### Milligan Agricultural Scholarship

Scott W. Strickland                                  Jr. ASM West Lafayette

### Richard D. & Emma F. Schweikhardt Memorial Scholarship

Matthew J. Wright                                    Sr. ABE Frankton

### Richard & Jeanne Ward Merit Scholarship

Jeremy T. Mosbaugh                                   Fr. ASM Crawfordsville

### Southern States Cooperative Scholarship

Donald A. Shoemaker                                  Jr. ASM Vallonia

### Walter Pugsley Scholarship

Matthew J. Wright                                    Sr. ASM New Castle

### 2001 Award Program for the Advancement of Arc Welded Design, Engineering & Fabrication

<table>
<thead>
<tr>
<th>Daniel Sellers</th>
<th>Sr.</th>
<th>ABE</th>
<th>Bourbon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nathan Schoonover</td>
<td>Sr.</td>
<td>ABE</td>
<td>Oakland City</td>
</tr>
<tr>
<td>Daniel Pitstick</td>
<td>Sr.</td>
<td>ABE</td>
<td>Rensselaer</td>
</tr>
</tbody>
</table>

### American Association of Cereal Chemists - Bill Doty Memorial Fund

Joshua D. Reid                                       Grad FPE West Lafayette

### Instrument Society of America (ISA) Scholarship

Jason Brown                                          Grad ABE Pendleton

### Outstanding Graduate Student Assistants Teaching Awards

Scott R. Wiens                                       Grad ABE Carmel

### Purdue Doctoral Fellowships

Joshua D. Reid                                       Grad FPE West Lafayette

### Note to readers: These scholarships were awarded in the fall 2001 semester. Over $70,000 in scholarships are awarded to ABE students each year. A dditional ABE A lumni, E ngineering and Corporate scholar- ships will be awarded in the spring semester. If you are interested in contributing to a scholarship fund, please contact Melissa Davies at 765-494-1188 or email daviesm@ecn.purdue.edu.
The new Environmental Quality Lab teaching laboratory is located in ABE 101 and consists of a fully functional soil and water laboratory and lecture area. The laboratory was well utilized during its opening semester (Fall 2001). Students enrolled in ABE 325, Soil & Water Resource Engineering, FNR 581, Environmental Impact Assessment, and EAS 313, Applied Geomorphology, completed extensive water quality assessment activities that included sampling and analyses for nutrients, bacteria, pH, and dissolved solids for the Indian Creek Watershed. Students learned the principles and procedures of ion chromatography, bacterial culturing by membrane filtration, and the use of ion specific probes. They then combined the data they generated with GIS land use data to identify potential impacts to water quality. By collecting water samples, documenting details of the sample sites, analyzing samples in the laboratory, and interpreting the results, students gained a “complete picture” understanding of water quality assessment. Several students went on to conduct undergraduate research in this area. The laboratory is currently used by undergraduate research students in Agricultural & Biological Engineering, Agronomy, Civil Engineering, and Biological Sciences. Each student receives one-on-one instruction from Elizabeth Warnemuende and Rabi Mohtar, in order to develop proficiency in his or her specific areas of interest. The diversity of laboratory users enables students to exchange expertise and to build the interdisciplinary background and collaborative skills critical to effective performance in any environmental career.
We were there!

A B E academic programs display

Patriotic display during thrashing demonstration

Bill Field talking to farmers

V i cL etchenberg (Dean of Agriculture) and Indiana’s Lt. Governor Joe Kernan standing at the entrance of the Boiler Mazer during opening ceremonies.

Visitor’s entering the Boiler Mazer.

Field demonstration of a Deere track combine.

Purdue staff members release the Purdue helium filled balloon at the end of the show. Staff members were (l to r) Jane Hofmann, Jess Lowenberg-D eBoer, Mack Strickland, Lisa Schumm, and Greg Blumhoff. (Photo courtesy of Tom Campbell.)

Aerial view of Boiler Mazer corn maize. (Photo courtesy of Tom Campbell.)

Bill Frederick (A G E N BS’74, M S ’76) Product Specialist for New Holland, Inc.
ASM Graduates

Jason P. Brown, Prairie Creek
Wesley Cornelius, Washington
Darin Heet, Plymouth
Elgin Martin, Bargersville
Thomas Scagnoli, Logansport
Kerry Trambaugh, English

FPE Graduates

Cinnamon Brown, Benton Harbor, MI
Erica Clerc, Elkhart
Markelle Grossman, Wolcottville
Ricardo Henriquez, Panama
Amanda Zeltner, Granger

December Graduates

ABE Graduates

Joseph Gepfert, New Haven
Peter Reinhart, Portland
Nathan Schoonover, Oakland City
Rahul Sinha, West Lafayette
Michael W. Smith, Bloomington
Matthew Wenger, Bluffton
Jesse Wright, Frankton

Ricardo Henriquez's entire family came to celebrate.

Matt Wenger spends time with his parents before the ceremonies begin.
One of the fastest-growing fields in the horse industry today is therapeutic riding and driving. **THE CHAPS (Therapy, Health and Education through Children and Horses As PartnerS)** is a nationally accredited horseback riding program for special needs children.

"Therapeutic riding can help improve muscle tone and head, neck and body control, as well as fine and gross motor skills," says THE CHAPS director Melinda Wiggins. "The bond that the kids have with the horses is amazing. Those who don’t connect with people really come alive once they’re on the horse."

THE CHAPS program started in 1993 and serves a nine county area in northeast Indiana with group lessons, a school-affiliated program, driving program, and a 4-H program in White County. More than 100 volunteers, about 70 percent of whom are Purdue students, help run the program. The Breaking New Ground Resource Center, directed by Bill Field, sponsors THE CHAPS program in partnership with the veterinary school’s Center for the Human-Animal Bond, and the Camp Tecumseh Community Project.

Farming is a physically demanding occupation. Can you imagine trying to farm with a disability such as an amputation, paralysis or visual impairment? This is a reality for more than a half million U.S. farmers and other agricultural workers, with approximately 10,000 new disabling injuries or illnesses occurring each year.

Purdue’s Breaking New Ground Resource Center has been helping disabled farmers since 1979, when a farmer with a severe spinal cord injury called ABE for help. Several engineering students traveled to the farmer’s home and devised a lift that helped him get into his tractor.

Today the program has grown and expanded to 18 states and has become the most extensive program in the country for aiding disabled farmers. The Toolbox, a resource catalog of assistive technology for disabled farmers, was first published by the Breaking New Ground Resource Center 15 years ago. A third publication was recently released featuring over 500 items ranging from tractor lifts and hitching devices to power gates.

Breaking New Ground has also expanded to work in conjunction with the Southern Indiana Center for Independent Living, performing service projects to educate farmers on the available technology for disabled workers. Anyone interested in more information can visit the Center’s web site at http://pasture.ecn.purdue.edu/ABE/Extension/BNG.

Bill Field has been a leader in working with farmers and the community in rural health and safety for over 25 years. Breaking New Ground and THE CHAPS are two programs that are a result of Bill’s dedication to and hard work on behalf of all farmers.

**Breaking New Ground**

On November 27, 2001, president of the Marquis Foundation, Lisa Kockert (right), presented THE CHAPS a check in the amount of $8,000 to Aissa Slayton (left), Community Relations Coordinator for THE CHAPS. The Marquis Foundation provides one time support for local organizations that foster programs and initiatives that enhance the quality of life for people living and working in the Greater Lafayette community.
Under the guidance of Professor Gary Krutz, ABE students have built an industrial riding lawn mower that uses water instead of petroleum in all of its hydraulic systems, including power steering, power brakes, and transmission. Jacobsen, a division of Textron Inc., Racine, WI, donated a 31-hp, front-wheel-drive mower for the project, which has three sets of gang mowers that raise and lower hydraulically.

The new mower reportedly performs as well as those using petroleum-based hydraulic fluid but is more environmentally friendly.

According to Krutz, water hydraulic systems are practical only in vehicles using high-pressure systems, typically heavy equipment for construction, agriculture, forestry, and mining. Water hydraulics are also quite costly, but that could change as more applications are discovered.

The students’ research focuses on hydrostatic bearings for cars or industrial and agricultural equipment. The mower uses distilled and deionized water to remove any electrical charges that could cause corrosion.

Also needed to head off corrosion are tighter fittings and higher quality parts made from ceramic, fiber-reinforced plastic, or stainless steel.

The investment in perfecting such parts could be well worth it. An engine that uses direct gearing is 95% efficient, one that uses hydraulic systems is 60% efficient. Using water instead of petroleum could boost efficiency as much as 10% due to water’s lower viscosity. “That doesn’t sound like much, but it would mean a savings of 500 million gallons of gasoline in the U.S. each year,” says Krutz.

For many years Bernie Tao has been encouraging his students to do innovative research in the bio-based materials area. Bernie has used the Soybean Utilization Contest here at Purdue to encourage ABE students to find new uses for soybeans. With his encouragement students have gained valuable experience in taking an idea from conception to final product. Recently, students under his direction have developed innovative products such as NuSoy Gel (a gelatin product), SoySnaps (a new soy-fortified cracker), and Soy Heating Fuel (a mixture of soybean oil and regular fuel oil). In each of these cases students and faculty have applied for patents and will see their ideas in the marketplace.

In the fall Bernie will take this concept to the “next level” based on a $1,200,000 research grant sponsored by the United States Department of Agriculture (USDA), to develop, transfer and market new bio-based products. Tao will lead a multi-state team to develop value-added products and processes using soybeans as the primary biological material. New products such as a protein-based polyurethane foam component, oil-based biodegradable aviation de-icer, fatty acid ester solvent/glycerol, and soy oil-based heating fuel will be considered. New information on the required bioprocessing as well as economic and marketing feasibility will be developed. An important long-term impact of this project will be to enhance the development of community based small-scale processing facilities to provide processing capacity for future low-volume, high-value agricultural crops, such as IP (Identity Preserved) soybeans or genetically modified crops for specific industrial or pharmaceutical products.

Under the guidance of Professor Gary Krutz, ABE students have built an industrial riding lawn mower that uses water instead of petroleum in all of its hydraulic systems, including power steering, power brakes, and transmission. Jacobsen, a division of Textron Inc., Racine, WI, donated a 31-hp, front-wheel-drive mower for the project, which has three sets of gang mowers that raise and lower hydraulically.

The new mower reportedly performs as well as those using petroleum-based hydraulic fluid but is more environmentally friendly.

According to Krutz, water hydraulic systems are practical only in vehicles using high-pressure systems, typically heavy equipment for construction, agriculture, forestry, and mining. Water hydraulics are also quite costly, but that could change as more applications are discovered.

The students’ research focuses on hydrostatic bearings for cars or industrial and agricultural equipment. The mower uses distilled and deionized water to remove any electrical charges that could cause corrosion.

Also needed to head off corrosion are tighter fittings and higher quality parts made from ceramic, fiber-reinforced plastic, or stainless steel.

The investment in perfecting such parts could be well worth it. An engine that uses direct gearing is 95% efficient, one that uses hydraulic systems is 60% efficient. Using water instead of petroleum could boost efficiency as much as 10% due to water’s lower viscosity. “That doesn’t sound like much, but it would mean a savings of 500 million gallons of gasoline in the U.S. each year,” says Krutz.

For many years Bernie Tao has been encouraging his students to do innovative research in the bio-based materials area. Bernie has used the Soybean Utilization Contest here at Purdue to encourage ABE students to find new uses for soybeans. With his encouragement students have gained valuable experience in taking an idea from conception to final product. Recently, students under his direction have developed innovative products such as NuSoy Gel (a gelatin product), SoySnaps (a new soy-fortified cracker), and Soy Heating Fuel (a mixture of soybean oil and regular fuel oil). In each of these cases students and faculty have applied for patents and will see their ideas in the marketplace.

In the fall Bernie will take this concept to the “next level” based on a $1,200,000 research grant sponsored by the United States Department of Agriculture (USDA), to develop, transfer and market new bio-based products. Tao will lead a multi-state team to develop value-added products and processes using soybeans as the primary biological material. New products such as a protein-based polyurethane foam component, oil-based biodegradable aviation de-icer, fatty acid ester solvent/glycerol, and soy oil-based heating fuel will be considered. New information on the required bioprocessing as well as economic and marketing feasibility will be developed. An important long-term impact of this project will be to enhance the development of community based small-scale processing facilities to provide processing capacity for future low-volume, high-value agricultural crops, such as IP (Identity Preserved) soybeans or genetically modified crops for specific industrial or pharmaceutical products.

Under the guidance of Professor Gary Krutz, ABE students have built an industrial riding lawn mower that uses water instead of petroleum in all of its hydraulic systems, including power steering, power brakes, and transmission. Jacobsen, a division of Textron Inc., Racine, WI, donated a 31-hp, front-wheel-drive mower for the project, which has three sets of gang mowers that raise and lower hydraulically.

The new mower reportedly performs as well as those using petroleum-based hydraulic fluid but is more environmentally friendly.

According to Krutz, water hydraulic systems are practical only in vehicles using high-pressure systems, typically heavy equipment for construction, agriculture, forestry, and mining. Water hydraulics are also quite costly, but that could change as more applications are discovered.

The students’ research focuses on hydrostatic bearings for cars or industrial and agricultural equipment. The mower uses distilled and deionized water to remove any electrical charges that could cause corrosion.

Also needed to head off corrosion are tighter fittings and higher quality parts made from ceramic, fiber-reinforced plastic, or stainless steel.

The investment in perfecting such parts could be well worth it. An engine that uses direct gearing is 95% efficient, one that uses hydraulic systems is 60% efficient. Using water instead of petroleum could boost efficiency as much as 10% due to water’s lower viscosity. “That doesn’t sound like much, but it would mean a savings of 500 million gallons of gasoline in the U.S. each year,” says Krutz.

For many years Bernie Tao has been encouraging his students to do innovative research in the bio-based materials area. Bernie has used the Soybean Utilization Contest here at Purdue to encourage ABE students to find new uses for soybeans. With his encouragement students have gained valuable experience in taking an idea from conception to final product. Recently, students under his direction have developed innovative products such as NuSoy Gel (a gelatin product), SoySnaps (a new soy-fortified cracker), and Soy Heating Fuel (a mixture of soybean oil and regular fuel oil). In each of these cases students and faculty have applied for patents and will see their ideas in the marketplace.

In the fall Bernie will take this concept to the “next level” based on a $1,200,000 research grant sponsored by the United States Department of Agriculture (USDA), to develop, transfer and market new bio-based products. Tao will lead a multi-state team to develop value-added products and processes using soybeans as the primary biological material. New products such as a protein-based polyurethane foam component, oil-based biodegradable aviation de-icer, fatty acid ester solvent/glycerol, and soy oil-based heating fuel will be considered. New information on the required bioprocessing as well as economic and marketing feasibility will be developed. An important long-term impact of this project will be to enhance the development of community based small-scale processing facilities to provide processing capacity for future low-volume, high-value agricultural crops, such as IP (Identity Preserved) soybeans or genetically modified crops for specific industrial or pharmaceutical products.

Under the guidance of Professor Gary Krutz, ABE students have built an industrial riding lawn mower that uses water instead of petroleum in all of its hydraulic systems, including power steering, power brakes, and transmission. Jacobsen, a division of Textron Inc., Racine, WI, donated a 31-hp, front-wheel-drive mower for the project, which has three sets of gang mowers that raise and lower hydraulically.

The new mower reportedly performs as well as those using petroleum-based hydraulic fluid but is more environmentally friendly.

According to Krutz, water hydraulic systems are practical only in vehicles using high-pressure systems, typically heavy equipment for construction, agriculture, forestry, and mining. Water hydraulics are also quite costly, but that could change as more applications are discovered.

The students’ research focuses on hydrostatic bearings for cars or industrial and agricultural equipment. The mower uses distilled and deionized water to remove any electrical charges that could cause corrosion.

Also needed to head off corrosion are tighter fittings and higher quality parts made from ceramic, fiber-reinforced plastic, or stainless steel.

The investment in perfecting such parts could be well worth it. An engine that uses direct gearing is 95% efficient, one that uses hydraulic systems is 60% efficient. Using water instead of petroleum could boost efficiency as much as 10% due to water’s lower viscosity. “That doesn’t sound like much, but it would mean a savings of 500 million gallons of gasoline in the U.S. each year,” says Krutz.
**ABE receives grant to fund interdisciplinary fluid power Lab**

A new fluid power technology lab will be established at Purdue as the first funded project from an endowment to enhance fluid-power education.

The late Otto J. Maha left the $5 million endowment to Purdue to strengthen existing educational efforts in fluid power. Currently the Schools of Agriculture, Technology and Engineering have fluid power programs.

The ABE lab project will receive over $340,000 from the endowment over the next four years. In addition to the grant money, those developing the lab will seek industry support and donations to help equip the facility. The lab will focus on the latest innovations in fluid power and allow for the testing and modeling of hydraulic components.

Receiving the award for the project are ABE faculty members Hartono Sumali and Gary Krutz, and MET faculty members Jan Lugowski and Steven Widmer. The interdisciplinary effort comes as a result of similar proposals for the educational lab offered by the faculty of both departments. The award was approved by an advisory board that oversees the endowment.

Otto Maha was considered a pioneer in fluid power, and was instrumental in developing standards for the fluid power industry. He was employed by the Parker Hannifin Corporation of Cleveland, OH for 50 years and died November 10, 1999.

**Matthew & Lesa Reynolds Undergraduate Scholarship Endowed**

In January 2000 Matthew Reynolds (AGEN BS ‘83) decided to establish a scholarship fund. The fund was Matt’s way to help ABE students and thank the University. Matt said, “my career success is based on the excellent and broad-based education I received at Purdue.” Matt is an Executive Engineer for Diamler Chrysler in Detroit, MI. He is responsible for assessing and implementing technology in new vehicles to enhance safety features such as night vision, GPS location/maps, collision avoidance and improved tractability.

The **Matthew and Lesa Reynolds Scholarship** is fully endowed and will be awarded for the first time in the 2002. The annual merit-based scholarship is for undergraduates in Agricultural & Biological Engineering.

The Reynolds’ took advantage of Diamler/Chrysler’s matching gift program in building the $20,000 endowment over a period of three years. If you are interested in establishing a scholarship endowment please contact June Lang in the Ag Development Office at 765-494-8672. Ask your employer’s Human Resource office about their matching gift program and how you can increase your charitable giving.

**Telefund**

Thank you for your support! Over 250 of you resonded to our telefund contributing over $21,000. These funds will be used to purchase new laboratory equipment, to help fund student travel expenses to attend national meetings, and to help fund student recruitment scholarships.

This year our calling campaign started in November. We hope this schedule change (previous calling was held in January) will help you plan future year-end charitable giving.

The telefund is conducted by nearly 200 Purdue students who love Purdue and enjoy connecting with alumni. Not only does the Telefund help us in our fundraising efforts, but it gives us an opportunity to hear from you and keep your university records current.

The next time you receive a call on behalf of ABE, please take a moment to chat with the student to find out what is new in the department and update your personal information. And remember, gifts of any amount make a difference to future ABE alumni.

**Boilermakers Helping Boilermakers**

Volunteers are needed for the **Alumni Bank**, a resource of Boilermakers helping Boilermakers. Using the email venue, undecided students connect with alumni in a given occupational category to discuss questions they may have regarding the their profession. Students access the Alumni Bank through SSINFO, Student Services INFormation Online.

Interested alumni should contact Ken Coleman, kcoleman@purdue.edu, Academic Advisor, Undergraduate Studies, for more information.
The Changing Faces of ABE

Daniel C. Taylor
Academic Coordinator

Dan Taylor joined our department in July as Academic Coordinator. This is a new administrative/professional position that combines the activities of graduate and undergraduate student services, student recruitment, scholarships, and academic programs. Dan’s name may be somewhat familiar to you as he was the Business Manager for ABE and Food Science prior to accepting this position.

Dan received a Bachelor of Science from Purdue in Agricultural Economics in 1988, and went on to get a Masters Degree from Cornell University, in 1991. Prior to coming to Purdue, Dan was a commercial loan officer in New York and then moved back “home” to work for a local bank in the Frankfort area. Dan is originally from West Lafayette and lives with his wife (Audette) and three children (Jacob, David, and Sarah) in Rossville. Dan enjoys spending time with his family, doing various projects around their farm, and in his free time he does some woodworking with his father.

Wilfred Vermerris
Metabolic Engineering

Dr. Wilfred Vermerris was recently hired as an Assistant Professor by the Purdue Agronomy Department with a joint appointment in ABE. Vermerris received his Master of Science degree with “highest honors” in Bio-molecular Engineering from Wageningen Agricultural University in the Netherlands in 1993. He followed with a PhD in Genetics from North Carolina State University in 1999. His research interests lie in the study of metabolic pathways that can enhance the agronomic value of crops. His approach is to use genetics, molecular biology and chemistry to re-engineer the plant to produce a specific product. He is looking at the biosynthesis of the cell wall polymer lignin as well as other phenylpropanoids in maize and sorghum. Changing these compounds is expected to improve the digestibility of forage crops, and may also have positive effects on the production of bio-ethanol from plant residues. Engineering comes into play once he understands the biochemical processes for lignin production and he figures out how to turn the system off or on depending on the desired outcome. His work is targeted toward the development of a new wave of “Designer Crops” which will involve working with faculty in the ABE Department as well as in the schools of Engineering and Agriculture to accomplish his goals.

Wilfred is accompanied by his wife Dr. Lauren McIntyre, an Assistant Professor in Computational Genomics and Agronomy and their 1-1/2 year old daughter Deirdre. We welcome them all to the Purdue ABE faculty and family.

Sam Parsons Retires As Professor Emeritus

June 30, 2001 Sam retired after 27 years with ABE and the Purdue Agriculture Extension Office. Sam is a native of Indiana and graduated from Purdue with a BS in Agricultural Engineering in 1961. After graduation Sam went to work as a design engineer for Cummins Engine Co. until 1963 when he decided to continue his education at Cornell where he earned his Masters in 1964. He began his career with ABE in 1975 after completing his Ph.D. at Michigan State University.

Sam started as an Extension Machine Specialist traveling throughout Indiana helping farmers and promoting new technology. During his tenure with ABE Sam has authored or contributed to over 140 magazine articles, and 45 extension publications. In 1986 Sam was honored with the Sharvelle Award as Distinguished Extension Specialists. He was recently recognized with the PUCESA Career Award for his work with global positioning systems, geographic information systems and remote sensing and developing an interdepartmental research and Extension education effort working with site-specific farming and big-package haymaking equipment.

Working with colleagues, Sam started the nation’s first On-Farm Computer Use Conference and Trade Show, and has been involved with setting up precision farming conferences and info Ag conferences.

Sam didn’t really retire until after the 2001 Farm Progress Show. He was very involved in planning and planting of the Boiler Mazer corn maize featured at the show.

A personal note from the editor: Sam has been an editor for this newsletter since its inception and has been a great resource for me in the past year. His attention to detail, editing skills and ABE historical knowledge will be missed.

Thank you Sam.

(Wilfred Vermerris, cont.)
In 1989 the government of Mauritania in West Africa arbitrarily expelled more than 100,000 citizens, forcing them to leave their homes at gunpoint, cross the river into Senegal, and become refugees. I was working at the time in Senegal, just across the border from Mauritania, where we were stunned to suddenly have tens of thousands of refugees in an already poor region. Fortunately, by that time I had been in Senegal more than four years, and spoke the local language (Pulaar) pretty well. Although my “real job” was with small-scale irrigation for cooperative vegetable gardens, I spent most of 1989 working with refugees, helping organize the distribution of food aid and limited materials for shelter, and the digging of latrines.

Early in 2001 I received an email from someone working with refugees in Indianapolis, telling me that a new refugee family had arrived who only spoke Pulaar. Could I help translate for them? Astonishingly, who only spoke Pulaar. Could I help translate for them? Astonishingly, this refugee family was one of those that had been expelled at gunpoint

My first conversation with the Sy family was by telephone, and when I said “No Mbadda?” I could tell the great relief in their voices, that someone spoke their language. (Even though my Pulaar is rusty, they seem to appreciate it!) Helping them learn to function in the U.S. is a challenge - they need to understand American money, stores (they were utterly astounded by the wealth on display at the local K-mart), schools, the bus system, and speaking, reading, and writing English. None of them, including the parents and their 15-year-old son, have ever been to school. Only Idrissa, the father, can read and write a little - and only in Pulaar. They have questions about everything. (“Is Indiana the coldest place on earth, or is there somewhere colder?”) We all feel it’s a small miracle to have found each other in Indiana after all these years and across all those miles. Later in the summer another family from the same village joined them in Indianapolis, so now there are at least 15 people who speak their language.

Each time I go to Indianapolis to talk and explain more mysteries of American life to them I am amazed by this Africa-Indiana connection. Who would have thought knowing Pulaar would be so useful in Indiana, 12 years after I left Senegal?

Class Notes

1950's

The Ag Engineering Class of 1953 is planning a 50th reunion for Gala Week 2003. Any classmates or professors interested should contact Gary Krutz (faculty contact) at krutz@ecn.purdue.edu or John Chenoweth at jncnc@ecnecn.com

1960's

C. Gene Haugh, AGEN PhD ’64, recently received the Carl-Heinrich-Dencker honorary award 2001 of the Vereinzur Förderung der Landtechnik Bonn. This is the first time the annual award has been presented to a non-German. The honor was given to Gene to recognize his contributions to the German-American partnership in research and teaching and his cooperation with the department of Agricultural Engineering at RFWU Bonn in the field of physical properties of biological materials. Gene is a professor of Biological Systems Engineering at Virginia Tech and a Fellow of AASAE.

David Dull, AGEN BS ’79, and wife Cindy have moved from West Lafayette to a high-rise condo overlooking Wrigley Field on Lakeshore Drive in Chicago, IL. In December 2000 David accepted the position of President of Hanna Cylinders. Hanna manufactures hydraulic and pneumatic cylinders for mostly industrial applications.

1970's
**Class Notes (cont.)**

William Frederick, AgMech BS ’74, AGEN MS ’76, returned to the West Lafayette area in September to work at the 2001 Farm Progress Show. Bill is a Product Specialist for New Holland Equipment, Inc. in New Holland, PA.

Larry Loehr, Ag Mech BS ’71, has spent the past three years as DuPont’s Global Marketing Manager leading the global launch of DuPont’s new A vant and Steward indoxacarb insecticides. Larry has traveled to more than 50 countries during this time including a trip with his wife Molly to cheer for the Boilers in the 2001 Rose Bowl.

John Schueller, AGEN MS ’79, PhD ’93, was just promoted to Professor of Mechanical Engineering with an affiliate position with Agricultural and Biological Engineering at the University of Florida.

Dennis Stuerzenberger, Ag Mech BS ’79, his wife of 21 years, Linda, and 3 children are living near Ft. Wayne on their small farm. Dennis and Linda are anticipating the possibility that their oldest child may attend Purdue in the fall of 2002. Dennis is Director of Product Development for PHD, Inc.

Vince Sweat, AGEN PhD ’72, retired from the Agricultural Engineering department at Texas A&M on September 1, 2001.

**1980’s**

Vane Clayton, Ag Mech BS ’81, was appointed President of TROY Group, Inc., a wireless subsidiary of TROY SCD in February 2001. TROY Group focuses on selling software and hardware solutions for two new short range, unregulated wireless technologies, BlueTooth and 802.11b. Vane is currently living in Newport Beach, CA and returns to campus for most Homecoming celebrations. He also returns to the family farm in northern Indiana each year to help his family with planting and harvesting.

Thomas Everett, AGEN BS ’85, transferred from Eli Lilly and Company Tippecaneo Labs to Lilly’s Elanco division in Indianapolis in 1999 and moved his wife and two children to Brownsburg, IN.

Rodney Huffman, AGEN PhD ’89, received the 2000 ASAE Standards Developer Recognition Award for his contribution in revisions of SS25.2JAN01, Soil and Water Terminology. He also initiated a Web-based committee comment and balloting arrangement. Rodney is an associate professor at North Carolina State University.

**1990’s**

Gerald Powell, Ag Mech BS ’85, AG MBA ’01, Gerald received his MBA in August 2001 from the eMBA program here at Purdue. Gerald is taking on a different role with DowAgro as Six Sigma Master Black Belt for the Americas. Gerald will “learn… then teach, coach and coordinate a team of 25-30 Black Belts doing projects in the US, Latin American and South America.” Six Sigma is the newest chapter in the Quality and Process improvement that General Electric has made famous.

Kent Robertson, FPE / BioChem BS ’89, earned his MBA degree from the University of Iowa in July 2000. Kent and his wife Kim have recently relocated to St. Louis, MO, where he is working for Pharmacia as a manufacturing manager in biopharmaceuticals.

**1990’s**

Amber (Andersen) Benner, FPE BS ’96, and husband Brett are living in Evansville where Amber is working as a senior process engineer for Mead Johnson. They are expecting the arrival of a little girl on December 24, 2001. Mom, dad, and big brother will be celebrating a very special present this year.

Jason Furrer, AGEN BS ’92, received an ASAE AE 50 Oustanding Innovations award for his Air Probe automatic soil sampler. Jason is the owner of Furrer FAB Designs in Reynolds.

Ellen Gooden, FPE BS ’91, and husband Michael recently welcomed the arrival of their first baby, daughter Cameron. Ellen is working for M&M/Mars as a Brand Manager for ice cream snacks.

Karl Hay, AGEN BS ’95, and his wife Andrea are living in Avon, where Karl is a Cylinder Application Engineer for Parker Hannifin Corporation. Karl was back on campus this fall representing Parker at the Industrial Roundtable.

Karen (Davis) Huttsell, ABE BS ’99, was married on June 30, 2001 to Benjamin Huttsell (ME ’00). Karen and Ben are living in the Cincinnati, OH, area where Karen continues to work for Siemens Building Technologies in design/sales engineering.

Chad Kasprzak, AGEN BS ’94, MS ’96, recently accepted the position of Director of Product Support for Coastal Equipment Systems, Inc. Chad relocated to Jacksonville, FL, at the end of November.

Thomas Lindenman, AGEN BS ’93, and wife Katy celebrated the 1st birthday of their triplet daughters (Ginny, Hannah & MaryKate) on June 27, 2001. The girls live with their parents in Elkhart where dad is Engineering Manager for REESE Products in the heavy-duty towing group.

Kevin McKee, AgMech BS ’90, was recently promoted to Field Operations Manager & Site Safety Specialist at Centralia, IL Soybean Production Facility for Monsanto’s newest constructed seed production plant. Kevin oversees all aspects of the plant’s 5.5 million union product, along with coordinating the plant’s safety programs with machine safety systems.

W. Mark McVea, AGEN PhD ’95, is working as Chief Technical Officer for KBE +, Inc., a consulting and IT firm. They develop system solutions for clients in the power train industry. Mark lives in upstate NewYork with his wife Teresa and two daughters.

Steve Smetana, AGEN BS ’93, is living in Novi, MI where he works as an Applications Engineer for Ford Power Products.

Amanda Venturin, FPE BS ’98, recently became engaged to Patrick Kocher and is planning an April 2002 wedding. She is living in Evanston, IL and working as an Associate Engineer for Kraft Foods (Philadelphia brand).

Mike Zink, ABE BS ’97, MS ’99 stopped by ABE to say hello to Professor Gibson. After completing his Masters degree Mike went to work for GM’s Locomotive Division and has spent the last two years traveling around the country for GM. His traveling schedule has slowed down and he is now living and working in Arkansas.

Eric Bortner, ABE BS ’00, is now working for John Deere in Silvis, IL. Eric is working in Product Development for Harvester Works.

Eric Bystrom, ABE BS ’99, MS ’00, is working for Caterpillar in the Building Construction Products Division in Clayton, NC. He is a member of the small wheel loaders hydraulics team.

Megan Sullivan, ABE BS ’00, has taken a position with August Mack Environmental in Indianapolis, IN, working as a field engineer “complete with hard hat and steel toed boots”.

**2000’s**
## Calendar

<table>
<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>7</td>
<td>Spring semester begins</td>
</tr>
<tr>
<td>February</td>
<td>2</td>
<td>Ag Alumni Fish Fry</td>
</tr>
<tr>
<td>March</td>
<td>11-15</td>
<td>Spring Break</td>
</tr>
<tr>
<td>April</td>
<td>7</td>
<td>Engineering Banquet &amp; Ball</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Honors Convocation</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>ABE Banquet</td>
</tr>
<tr>
<td></td>
<td>18-21</td>
<td>Gala Week</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Grand Prix</td>
</tr>
<tr>
<td>May</td>
<td>10-12</td>
<td>Spring Commencement</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Engineering 8:00 pm</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Agriculture 2:30 pm</td>
</tr>
<tr>
<td>June</td>
<td>22-25</td>
<td>ASAE Annual Conference</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nashville TN</td>
</tr>
<tr>
<td>July</td>
<td>29-31</td>
<td>ASAE-CIGR Congress</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Annual International Meeting - Chicago IL</td>
</tr>
<tr>
<td>August</td>
<td>19</td>
<td>Fall semester begins</td>
</tr>
</tbody>
</table>

---

**25 Years - The Class of 1976**  
**Where are They?**

If you can identify any of the individuals in this photo, including yourself, please contact Melissa Davies at 765-494-1188 or email, daviesm@ecn.purdue.edu, and we will send you a token of our appreciation.