In its search for a new Department Head, the Agricultural & Biological Engineering Department needed to look no further than within its own walls. An award-winning ABE researcher and educator, Dr. Bernie Engel was a logical choice.

Dr. Engel has served as Interim Department Head since last August, when former Department Head, Dr. Vince Bralts, accepted the position of Associate Dean of Resource Planning and Management in Purdue’s College of Engineering.

“I’ve had a year-long transition period that’s eased me into the job,” he said. “Now I face a department that has a fantastic potential, and the challenge to live up to that potential is what will make this a fun job.”

Dr. Engel first came to ABE in 1985 as a graduate student, and since then he has seen a lot of changes take place in the department. But perhaps the most exciting changes are just now beginning to surface.

Some of the biggest challenges facing Dr. Engel in his new position include fulfilling an unprecedented expectation for campus-wide collaboration efforts, finding creative solutions to the rapidly growing laboratory space demands, increasing the number of faculty to bolster already strong areas, and growing both undergraduate and graduate student enrollment numbers.

“This department is looked to from many other programs nationally, and we have to make sure we continue to lead,” he said. “The opportunities for growth are unimaginable, and I am eager to be a part of helping this great group become even better.”

Dr. Engel is also eager for the unique chance to continue his research programs while serving as Department Head. In his time as an ABE professor and researcher, Dr. Engel has attained national and international stature in the field of information systems, focusing on the use of geographic information systems, expert systems, artificial intelligence and simulation to study and control agricultural non-point source pollution of surface and ground water. He and his co-investigators have leveraged Purdue’s investment in this research, obtaining significant external support during the past 16 years.

Because some of his research will continue, Dr. Engel explains that he is excited not only because he will be able to further his programs but also because it will continue to increase national visibility of the department.

Dr. Engel isn’t always this visible, though. Each day after work, he quietly retreats to his small farm near Attica where his wife, Andrea, and their three children tend to cattle, goats and hay.

“Farming has always been in my life, but I would’ve never guessed I’d be where I am today,” he said with a chuckle. “But it would be tough to imagine anything different now. I could never duplicate my life with our growing farm and my role in two great colleges and one outstanding department.”
Greetings! As you saw on page 1, I am serving in a new role within the Department of Agricultural and Biological Engineering (ABE). I look forward to continuing to work with ABE students, staff and faculty as well as our alumni and friends as we pursue preeminence.

I’m fortunate to be part of one of the premier ABE programs and to follow in the footsteps of outstanding departmental leadership. Larry Huggins retired at the end of this past semester, and he and Lola are enjoying navigating the “Great Loop” aboard their boat (see page 9). We will certainly miss Larry’s and Lola’s leadership on campus. Vince Bralts has settled into his new role as Associate Dean in the College of Engineering.

ABE has recently completed an outstanding academic year. Our students at both the undergraduate and graduate levels excelled as we have come to expect. Some of the accomplishments of our students are highlighted on pages 13-17. The career opportunities for our graduating students continue to be exceptional. More jobs were available than graduating students, so if you know of prospective students please encourage them to consider Purdue ABE.

We celebrated the successes of several of our alumni and friends this spring. Gerald Powell was recognized as a Distinguished Agricultural Alumni (DAA); Scott Benko, Douglas Griffin, Stanley Morton, and Dr. Leroy Pickett were recognized as departmental outstanding alumni; and David Waits and Robert Marlow were recognized as departmental service award recipients. Additional details can be found on pages 4-6.

ABE has been fortunate in being able to continue to expand the excellent base of faculty within the department. Marshall Porterfield (page 8) joined us in January and Joseph Irudayaraj joined us mid semester, both further strengthening our biological engineering efforts. Joseph will be featured in the next newsletter. The efforts of the biological engineering faculty are featured in this newsletter on pages 10-11.

Our efforts in the biological engineering area are also providing an ABE presence in the Purdue Discovery Park. Discovery Park is providing new opportunities on campus for multidisciplinary research and engagement as well as unique facilities and capabilities. ABE will play a significant role in Discovery Park activities, and more of ABE’s involvement in these activities will be featured in future newsletters.

My priorities during this next year will be focused on our undergraduate programs and continued growth of our research efforts. The continued strengthening of educational programs and the growth of student enrollments will help ensure the long-term vitality of our program. ABE faculty are well positioned to continue to grow our research and graduate education efforts and to lead multidisciplinary efforts on campus.

Your continued support of our programs is essential in helping us attain our vision of preeminence - Purdue ABE will be the leading agricultural and biological engineering department by providing an environment that promotes professionalism, collaboration and the pursuit of academic excellence while valuing individual achievements.

If you are near West Lafayette, please stop by to say hello and to see all of the exciting things our students, staff and faculty are doing!

Sincerely

Bernard A. Engel
Department Head & Professor

P.S. Plans are underway for a fall event that will provide an opportunity to visit with students, staff, and faculty as well as new laboratory facilities. Look for a mailing in early September with additional details.
Gerald Powell Named Distinguished Agricultural Alumni

“Dream big, plan well, smile always and good things will happen.”

Gerald Powell heard these words as an undergraduate in the Agricultural & Biological Engineering Department, and he instantly knew the advice would never leave him. And with gratitude for this advice, and everything else that Purdue taught him, Powell became a devoted ABE alumnus after graduation.

For his many efforts at Purdue, Powell was recognized as one of the eight 2005 Distinguished Agricultural Alumni.

Powell received his Bachelor’s degree in Agricultural Mechanization from Purdue ABE in 1985 and then his executive MBA in Food and Agribusiness in 2001. Currently a Six Sigma Master Black Belt Trainer at Dow AgroSciences in Indianapolis, Powell looks back on his 20-year professional career and attributes much of his success to the strong foundation he received at Purdue.

“The teamwork and people skills that I learned from class projects and student activities have been invaluable to a diverse career in sales and marketing,” he said.

In his career, Powell’s company employs Six Sigma, which is a process of total quality management with the goal of near flawless business performance. Within Six Sigma Powell obtained in 2001 the title of Master Black Belt, which is a title bestowed on individuals who have mastered the highest level of technical and organizational proficiency and are able to provide technical leadership for the Six Sigma program.

But with equal commitment to that of his career, Powell dedicates himself to Purdue by supporting leadership among students and serving as a mentor in a variety of personal and professional capacities. He has served as a Dow AgroSciences (DAS) Purdue campus recruiter and continues to participate in several DAS interview panels each year. He frequently makes career-related presentations to the Agricultural & Biological Engineering Sophomore and Senior Seminars. Additionally, Powell is an active ABE alumnus, having served as a member of the department’s Development Committee for almost 10 years, a member of the Agricultural Systems Management Advisory Board for eight years, and he has participated in industry/departmental meetings to help the department develop its strategic plan in 2003. He was also selected as an Outstanding Alumni for the ABE Department in 2000.

Powell explained that his eagerness to support Purdue comes from his belief that Purdue needs connectivity and financial support to achieve its mission.

“Connectivity to future students and industry give it life and makes it relevant, grounded and sustainable,” he said. “I look forward to continuing my involvement in Purdue through speaking with classes on career opportunities, assisting with projects in need of industry input and financial support.”

The Agricultural & Biological Engineering Department congratulates W. Wayne Townsend, a 2005 Distinguished Agricultural Alumnus.

Townsend, who graduated from Purdue in 1951 with a agricultural sciences degree, has spent more than 50 years farming, 22 years in public office and 23 years serving the educational community. Mr. Townsend served on the Purdue Board of Trustees for 20 years, beginning his term in 1984 and stepping down in 2004.

Through the years, he has become a friend to ABE and supporter of the department as well as Dr. Gary Krutz.
Six alumni and friends were honored as recipients of the 2005 Outstanding ABE Alumni and Outstanding Service Awards during a reception celebration on April 21, 2005. These individuals have achieved significant professional, community, educational, and social accomplishments in agriculture, engineering and technology. We congratulate them on their accomplishments and thank them for their generous support and service to Purdue ABE.

Scott R. Benko
Agricultural Mechanization, B.S. 1982
ABE Outstanding Alumni Award

Scott and his wife own Haltom Equipment, a John Deere Lawn and Commercial dealership in Mooresville, IN. In 2004, the company’s sales exceeded $4 million.

Scott explains that he got into the John Deere business not because of its “get rich” possibilities but rather because of his longtime love for the tractors. Growing up on the farm, Scott’s life became intertwined with John Deere tractors.

“When I was at Purdue, I remember saying that I’d like to own my own dealership one day,” he said. “As of next April, I will be able to say that I’ve owned my business for 10 years.”

Before purchasing Haltom Equipment in 1996, Scott held a number of different positions. After graduating from Purdue, he went to work for the farm automation department of Illini Fs in Champaign, IL. Then in 1986, Scott took a sales position at Reynolds Farm Equipment in Fishers, IN. The dealership then moved him to the Lafayette store in 1988 as the store manager. During this time, Scott worked with the ABE Department by providing equipment, helping with classes and seminars, assisting professors and working with alumni. In 1992, Scott left Reynolds and Lafayette for an opportunity to become the store manager of Midland Implement in Greencastle, IN.

“When running the other dealers, you’re running it like it’s your own business, so I just thought, ‘why not reap the benefits?’” he said. “It’s been a great opportunity.”

In his free time, Scott enjoys spending time with his wife, Laura, and their two children, Aaron and Sarah. He is also a firefighter for the Mooresville Fire Department and a volunteer firefighter for the Brooklyn Fire Department. In addition to serving his local community, Scott stays involved with his alma mater as a member of the Agricultural Systems Management Advisory Board and as a guest speaker in seminar classes and at club meetings.

Both of Scott’s parents graduated from Purdue in 1950, and his father flew in from Florida to join him for the festivities.

W. Douglas Griffin
Agricultural Engineering, B.S. 1990
ABE Outstanding Alumni Award

Doug is the director of Sales and Marketing in the Challenger Division of AGCO Corp. in Duluth, GA. He is responsible for all North American products in the Challenger line, which includes tractors, combines, hay equipment and compact tractors.

At AGCO, Doug helped his division grow from five employees to more than 50 in less than two years. In 2004, AGCO was a $5.3 billion company.

Doug began working for AGCO when the Challenger Division was purchased from Caterpillar in 2002. Before this transition, Doug had worked for Caterpillar for 15 years. He began with the company as a co-op student at Purdue, in the Engineering Education Program. From there, Doug took various marketing roles for Caterpillar Ag Products in Dekalb, IL. He then became the district agricultural sales representative for the Dallas, Texas district in 1997. Another move came in 1999 when Doug returned to the Midwest as the district agricultural sales and product support manager in Peoria, IL. He later took on the roles of dealer development manager and
North American agricultural products sales manager. Doug’s final move came in 2002 when he took his current position in Georgia.

“I should know the job pretty well by now, but it’s surprising that I still learn things every day!” he said with a chuckle.

Doug points out that one of the interesting aspects of his job is that he has taken a technical degree and applied it to a sales and marketing role. This has been an important combination because it has uniquely enabled him to understand the technical side of his role.

“I’ve taken a mix of people skills, technical skills and sales skills and combined them into a management type of career,” he said. “When you put those things together, it’s a fantastic combination.”

Because his job includes quite a bit of traveling, Doug said he enjoys staying home on the weekend with his wife, Renee, and their three children. In addition to family time, he takes pleasure in home improvement projects and returning to the family farm in Indiana.

Stanley G. Morton
Agricultural Engineering, B.S. 1966
ABE Outstanding Alumni Award

Stanley Morton is the owner of Palmer Products, Inc., which manufactures Trac Vac commercial lawn care equipment. Though he oversees all aspects of the company, Morton is mainly involved with production.

The road to entrepreneurship began for Stan after college when he went to work for Even-Flo Silage Distributors as an engineer in equipment design. Stan quickly moved up the ladder of success and became a project engineer for Helix Corporation, where he developed feeders and garbage trucks. And not long after, Stan became the plant manager responsible for engineering at EZ Rake Inc., which builds lawn equipment. Stan’s final move, however, came abruptly when he and the general manager of EZ Rake decided to start their own business in 1975.

“With an engineering background and experience in the field, we started from scratch with design,” Stan said. “Back then, we just did a sketch, made a prototype, redid it a few times and went to production.”

And the rest was history. Now a nationwide company, Trac Vac has more than twenty models of lawn vacuum systems available, and more than 6,000 products are sold annually.

But no matter the success, Stan’s loyalty to the Department of Agricultural & Biological Engineering remains outstanding. Recognizing the importance of communication between the university and industry, Stan makes his facilities readily available for class tours.

“Students need to make sure they are aware of what’s happening in the field,” he said. “I think engineering has changed in that you don’t need to memorize as many engineering principles as much as recognizing how everything ties together.”

While many might expect Stan to be thinking about plans to retire, he is still more interested in plans for new products.

“I can’t see myself as part of the coffee crowd sitting at the cafe all morning,” he said with a chuckle. “I just like what I do – it’s rewarding.”

Dr. Leroy K. Pickett
Agricultural Engineering, Ph.D. 1969
ABE Outstanding Alumni Award


Prior to working for Case, Leroy taught and developed fluid power courses and a laboratory at Michigan State University. His greatest career satisfaction, however, came from modeling the behavior of the self-leveling combine which led to coordinating the design and development of the 1470 Axial-Flow International Harvester Hillside Combine. Leroy later served as a team leader for the Case International 2100 Series Axial-Flow Combine program.

Throughout his career, Leroy has been active in the American Society of Agricultural Engineers, where he served as a member of the Board of Directors representing the Power and Machinery Division and as the Technical Vice-President of the Society. Leroy received the ASAE Chicago Section Honored Member Award in 1992 and was recognized as an ASAE Fellow in 1998. He also chaired and served on numerous ASAE committees.

Since retiring, Leroy has enjoyed catching up on projects – such as scraping, washing and painting their home, “which still looks very nice!” Leroy also has become more involved in the church and community.

Because of a family exposure with mental illness, he has also devoted his time to the National Alliance for the Mentally Ill (NAMI) of DuPage County, IL. With NAMI DuPage, he has participated in the Religious Outreach Committee, and he has served on the Board of Directors from 2001 to 2004. Leroy currently chairs the United Methodist Church Northern Illinois Conference Mental Health Ministries Task Group. He is also serving in the missions area of the church, including the Missions Work Area in his local Church, the Conference Board of Global Ministries and serving as Board Member for the Marcy-Newberry Association, Inc.
2005 Outstanding ABE Service Award Recipients

David A. Waits
President, SST Development Group, Inc.
ABE Outstanding Service Award

David is the President and CEO of SST, a software development company focused on applying geographic information systems (GIS) technology to precision agriculture. Founded in 1994, SST provides information management tools to customers in 42 states, and 22 countries. More than 70 universities and community colleges worldwide use the company’s software for teaching and research. SST employs 36 employees who are headquartered in Stillwater, Oklahoma.

Upon creation of his company, Waits brought a unique approach to precision farming with his experience and knowledge in the fields of agriculture, geography and land management. He has 10 years’ experience as a farmer in southwestern Kansas and five years’ experience teaching university-level GIS and Remote Sensing as a professor at Oklahoma State University.

“My career path was a bit unorthodox in that I became a farmer first and then later went to college to learn the theory and principles of GIS to be applied to agriculture,” he said. “But if I hadn’t had the practical farming experience, I wouldn’t have known what would be useful.”

David and his staff at SST have certainly developed a useful product. SST offers various levels of software – whether it is SST FarmRite, SSToolbox, or SST Summit and SST Stratus – that allow farmers to manage every activity that is happening on their fields. Data is collected and managed on such events as what has been planted, what herbicides were applied, what crop scouting data has been observed and what the harvest yield is in every location.

“We need students to be exposed to the new techniques that are available in the industry,” he said. “The university improves their position in entering industry by showing them what’s on the cutting edge. We want to get students acquainted with the software, or even become proficient with it, so they can make the technology work in their careers.”

To support this belief, SST has provided licenses for SSToolbox, the premiere software for site-specific crop production management. This gift has enabled the ABE Department to teach the Technologies of Precision Agriculture course to hundreds of students, many of whom are now leaders in industry.

“We all know that Purdue is a leading university with regard to applying these new techniques in agriculture,” he said. “We’re very glad to help.”

Robert Marlow
Operations Manager, The Andersons, Inc.
ABE Outstanding Service Award

Bob is the operations manager of The Andersons Inc. in Delphi, IN. Founded in 1947, The Andersons is an agribusiness related company that deals with grain, agricultural fertilizers, corn cob processing and farm retail. With 14 grain facilities throughout Illinois, Indiana, Ohio and Michigan, the company has an estimated 3,000 employees. Though he has worked in its various locations, Bob has been with The Andersons for 35 years.

After developing a passion for agriculture while growing up on a farm in Ohio, Bob began exploring where the field might take him by accepting a part time position with The Andersons during his senior year of high school. Bob’s career began in the operations area, and quickly evolved. He has since worked for The Andersons in its services group, as a traveling plant engineer, a facility manager and now finally the operations manager.

“I look back on it, and I never really thought I’d be here all these years!” he said. “It’s just a great company to work for.”

In addition to enjoying his career, Bob enjoys finding ways to help others with his career. And for this, Bob is now recognized for his commitment to outstanding service to ABE’s students, faculty and stakeholders.

During his 13 years at The Andersons in Delphi, Bob has opened the facility to Purdue ABE through numerous tours and in the welcoming of graduate research. He also made the facility available to Purdue for a hands-on grain entrapment rescue workshop and safety video that is now internationally distributed.

Bob explained that although he enjoys working with Purdue ABE because of the relationships that have been built, the cooperation is also very beneficial to the grain industry.

“To me, the research is interesting because so little has changed in the industry through the years,” he said. “Now, though, we’re starting to make changes in our ability to control grain quality management.”

When he is not at work, Bob enjoys spending time with his wife of 23 years, Stephanie, and their three daughters. He also enjoys gardening and “lives to cook!”
Livestock producers have fearfully watched as the EPA has begun filing lawsuits in recent years against farms that do not comply with emission regulations included in laws such as the Clean Air Act.

Uncertain of how to measure – let alone regulate – emissions, however, producers had no choice but to hope they did not fall under the EPA’s radar. But thanks to the work of Dr. Al Heber, professor of Agricultural & Biological Engineering, the uncertainty will soon be over.

Dr. Heber is the lead researcher for a two-year air quality study required by the Animal Feeding Operation Consent Agreement. The National Air Emissions Monitoring Study will address air pollution coming from large farms, which has been the focus of an increasing number of citizen complaints and concerns about possible health problems.

The $9 million study draws on expertise from universities nationwide, and it represents swine, poultry and dairy farms in many of the different geographical locations throughout the United States.

To conduct the study, monitoring teams will be deployed to the selected farms, which have mobile labs fully equipped with gas analyzers, pollutant detectors, weather stations and other equipment to record data on air samples. Data will be continuously collected over the 24-month period of time, monitoring hydrogen sulfide, volatile organic compounds, particulate matter and ammonia in livestock housing as well as manure storage structures. Other data that might affect air emissions – such as climate, routine farm operations and the number and size of animals in the barn – will also be collected.

“It encompasses more universities, more states and more farms per state than any ag air quality project ever done,” Dr. Heber said. “It’s going to have a major impact on our knowledge of air emissions and the way air quality research is conducted in the future.”

Part of the difficulty with livestock air emissions in the past, he said, is that limited baseline data exists to help farmers or regulatory agencies determine which kinds and sizes of operations and types of management practices might produce emissions exceeding legal limits.

“A large factory can easily calculate how much they’re emitting, but these smaller farms just don’t know,” he said.

After the study is complete, however, the EPA will have enough data to develop methods for accurately estimating emissions from different types and sizes of animal feeding operations. For the first time, a clear-cut industry-funded emissions monitoring program will be in place.

Once such programs are established, livestock producers will be required to apply for air permits, install controls, implement required practices and generally come into compliance.

“In addition to everything else, this will put the ABE Department at the leading edge of livestock air emissions research,” Dr. Heber said. “If we do a good job, the opportunities it could create for us are quite remarkable.”

**Purdue Agricultural Air Quality Team**

Winner of the 2005 Purdue Agriculture Team Award

Claude Diehl, Agricultural & Biological Engineering
Rich Grant, Agronomy
Albert Heber, Agricultural & Biological Engineering
Dan Kelly, Animal Science
Teng Lim, Agricultural & Biological Engineering
Jiqin Ni, Agricultural & Biological Engineering
Scott Radcliffe, Animal Science
Brian Richert, Animal Science
Alan Sutton, Animal Science
Ching Ching Wu, Animal Disease & Diagnostic Laboratory
Neil Zimmerman, Health Sciences
ABE Welcomes New Faculty Member

D. Marshall Porterfield

Though the word “multidisciplinary” evokes anxiety for many academics, Dr. Marshall Porterfield couldn’t imagine approaching exploration in any other way.

This take on life began when Dr. Porterfield was just a boy, moving from coast to coast with his family, as often as his father’s job in the Navy required. Learning to roll with the skateboarding crowd one day and finessing a board with a group of surfers the next, Dr. Porterfield vividly remembers what it was like “to always be the new kid.”

“It was quite a time of contrast!” he said. “The experiences did a great job of teaching me to appreciate diversity in people, though.”

And this penchant for diversity is what began a path to success.

After high school, Dr. Porterfield attended the University of South Alabama and received his Bachelor’s degree in biology with a focus on cell biology. During this time, he conducted undergraduate research, had a paper published, and set himself up to begin his Ph.D. at Louisiana State University without ever earning a Master’s degree. In the 3 ½ years it took Dr. Porterfield to earn his Ph.D. in crop physiology, he also had a NASA fellowship at the Kennedy Space Center, where he studied plant responses and plant growth in microgravity.

Upon completion of his graduate work, Dr. Porterfield accepted a post-doctoral position at the Marine Biological Lab at Woodshole in Cape Cod, the oldest marine institute in the U.S. He was most recently employed at the University of Missouri Rolla as an assistant professor with a joint appointment with biological, electrical and computer engineering.

Awards & Promotions

ABE faculty members have been recognized and rewarded by the department, university and professional organizations for their teaching, research and professional accomplishments. Osvaldo Campanella was promoted to full professor and Heidi Diefes-Dux was promoted to the rank of associate professor. Heidi was also inducted as a fellow into the Purdue Teaching Academy.

Jenna Rickus is one of nine junior faculty to receive the 2005-2006 Teaching for Tomorrow Award. Teaching for Tomorrow matches senior faculty with junior faculty members who have shown potential for excellence in teaching. Richard Stroshine was awarded the NC-213 Andersons Research Award. The Andersons Cereals and Oilseeds Award of Excellence recognizes individuals who have made superior contributions to science and education related to grain quality.

Vince Bralts has been elected President-elect of the Institute of Biological Engineering and John Lumkes received the SAE Faculty Advisor Award. Dirk Maier completed the ESCOP/ACOP Leadership Development Program. 

Congratulations to all!
The ABE Department hosted a retirement celebration for Larry & Lola Huggins on May 7th. Larry recently retired as Associate Dean for Research Planning and Management for the College of Engineering. Prior to his position with the College of Engineering, Larry served as the ABE Department Head from 1981 to 1994. During Larry’s tenure as Department Head he brought in outstanding new faculty members, increased the size and quality of the graduate program, and improved undergraduate course offerings. He also presided over major upgrades to the department’s infrastructure.

What are Larry and Lola’s plans for retirement? A two year excursion on their boat, the Lola Marie, which began on May 26th. Larry and Lola will be traveling America’s Great Loop - a continuous waterway that circumnavigates the eastern portion of North America traveling along the Atlantic seaboard, across the Great Lakes, through the inland rivers, and around the Gulf of Mexico.

What type of retirement gift do you get for someone trading in their office for the Captain’s bridge? How about a personalized anchor?

Professors Harry Gibson and Mack Strickland have decided to ease their way into retirement. Harry began his partial retirement at the beginning of the spring 2005 semester. He will continue to teach ASM 345, ABE 490 and 545 during the fall semesters until his full retirement in June 2005. Harry spends his extra free time with his family and traveling.

Mack will be spending the next two summer and fall semesters getting in as much golf as possible. He will be returning to the classroom to teach ASM 231 and 570 for the spring semesters of 2006 and 2007. Mack’s official retirement will begin on June 30, 2007.

Harry & Mack both joined the department in 1979 and have made significant contributions to the Agricultural Systems Management and Agricultural Engineering programs.

ABE Outstanding Teachers & Counselor

Helpful...knowledgeable...entertaining...tactful...and...motivating. These are some of the adjectives used by ABE students to describe this years outstanding ABE teachers and ABE counselor. Congratulations to Dr. Don Jones, voted by the undergraduate students as the Outstanding ABE Agriculture Teacher and Dr. Gary Krutz, selected the Outstanding ABE Engineering Teacher. Dr. Martin Okos was voted the Outstanding ABE Counselor.
ABE Expands Biological Engineering Program and Embarks on a Venture into Discovery Park

The University and Department strategic plans “focus on developing engineering curricula that engages students, that demonstrates the relevance and significance of engineering to our world, and that prepares the next generation of students to contribute and thrive as 21st-century engineers.” Biology is a driving force in the new areas of engineering and our graduates need to be prepared for careers in the production and processing of food, fiber and renewable energy resources.

The department has hired new faculty to help expand our undergraduate curriculum and develop a new area of emphasis in biological engineering. These new endeavors will provide opportunities for ABE faculty and students to become involved in the emerging multidisciplinary projects on campus. As you read further you will discover how each faculty member is contributing to the efforts and how ABE is uniquely positioned to capitalize on our expertise in the application biology, engineering, and information technology in areas that are unique to the agriculture and food industries.

Dr. Michael R. Ladisch is the director of the Laboratory of Renewable Resources Engineering (LORRE) and Distinguished Professor of Agricultural and Biological Engineering. Dr. Ladisch’s research addresses fundamental topics in bioprocess engineering as it applies to bioproducts, biorecovery and bionanotechnology. The work that he carries out with teams of researchers – consisting of colleagues, graduate students and staff – is multi-disciplinary and multi-institutional. Specifically, Dr. Ladisch’s work addresses properties of proteins and living organisms at surfaces, rapid prototyping of microfluidic biosensors, bioseparations, and transformation of renewable resources into bioproducts.

Equally exciting for Dr. Ladisch is the number of opportunities for graduate and advanced studies in LORRE.

“After working in the lab, students take away a recognition of the many creative processes that go into research,” he said. “They also take away knowledge of the need for carrying out research in biotechnology in an interdisciplinary manner.”

Dr. Chang Lu, an assistant professor in ABE, focuses his research on the use of micro/nano scale devices and materials in the study of biological systems and for harnessing biological energy. He is particularly interested in designing novel schemes to manipulate single cells and single biomolecules on microchips. Such tools can fundamentally change the face of biosensing and bioanalysis research. His research group is also working in the area of how to effectively interface functional biosystems with inorganic electrode materials.

Dr. Nathan Mosier, an assistant professor in ABE, researches technologies that will improve the efficiency of liquid renewable fuels. While most fuels are currently produced from petroleum, Dr. Mosier is studying how raw materials, such as corn cobs, can be turned into the building blocks for fuels and an array of other products.

“Agriculture is diversifying, and one day it will be about much more than food production,” he said. “It will become the foundation for producing the raw materials that go into making chemicals, energy, plastics and medicine.”

With the help of graduate and undergraduate researchers, Dr. Mosier is helping Purdue lead the expansion of what the agricultural industry will do for the world.

“Purdue has a unique opportunity because of our capability to address problems, such as continued energy production, from all aspects,” he said. “Our work is important not only from the standpoint of ensuring enough energy for the world, but also because it gives power to the local growers.”

Dr. Marshall Porterfield joined the ABE department in January 2005 as an associate professor. In addition to researching biological sensors and their application, Dr. Porterfield will be working with Dr. Rickus on a new laboratory in Discovery Park. Together, these ABE professors will establish a venue where students and researchers with diverse backgrounds can come together to develop new tools and technologies for basic research.

Dr. Porterfield explains that the laboratory will facilitate outreach among many disciplines by providing the physical infrastructure to connect them all. Moreover, the collaboration will allow for the creation of new tools and the adaptation of existing tools to make new research possible. “You can’t study something if you can’t see it, measure it or sense it,” he said. “We will develop the new tools for discovery in the biological sciences.”

Visit http://discoverypark.e-enterprise.purdue.edu for more information on Discovery Park.
Dr. Jenna Rickus is an assistant professor in the Department of Agricultural & Biological Engineering, and she is the director of the new 5-year B.S./M.S. Biological Engineering program. Dr. Rickus also holds a joint appointment with Biomedical Engineering. While her work finds specific focus on controlling and mimicking cells as an engineered dynamic system, the practical implications of Dr. Rickus’ work span agricultural, biomedical, and food safety applications.

Because Purdue University is whole-heartedly investing in the emerging area of biological engineering, Dr. Rickus is confident that ABE will soon be a leader in the field. “These emerging research and education efforts stand upon a strong history of engineering strength at Purdue,” she said. “We have faculty members who were biological engineers long before such a title even existed! ABE is a natural home for this emerging discipline.”

Dr. Bernard Tao, a professor in ABE and the Indiana Soybean Board Named Professor in Soybean Utilization, is investigating the use of renewable biomaterials to create processes and products to replace petrochemicals. Dr. Tao’s research areas involve exploring the modification of carbohydrate enzymes and biochemical conversion of natural materials, such as soybeans, to make industrial products.

“Economic growth in the U.S. is closely tied to the development of innovative technologies, products and the development of human entrepreneurial talent,” he said. “One of the major economic drivers is currently the ever-rising costs for petroleum, which has spawned a keen interest in developing sustainable processes and materials to replace expensive petroleum-derived fuels and petrochemicals. Coupling this societal need with scientific advances in the life sciences and educational opportunities has become a foundation for the development of Biological Engineering as a new discipline.”

In addition to the research Dr. Tao conducts on renewable resource utilization, he also puts a high value on entrepreneurship experiences for undergraduate students. Dr. Tao runs an annual program for undergraduate teams to develop new products from proteins and oils in soybeans, which have resulted in three commercialized products, two patents, undergraduate cash awards of more than $60,000, and one new business.

**ABE & Discovery Park**

Discovery Park was established with a simple vision – create a combinational power greater than that of any individual strength. The specific “how to’s” of this ambition were unclear, but Purdue knew it wanted the park to serve as a catalyst for drawing faculty, staff and students together to reach into other disciplines and take Purdue to the cutting edge of academic work.

Seeing the opportunity to embark upon an endeavor that could bring innovation through multidisciplinary action, the Department of Agricultural & Biological Engineering knew it had to be involved.

And when Dr. Marshall Porterfield joined ABE as an associate professor in January 2005, a natural collaboration began to take shape between ABE and Discovery Park.

Dr. Porterfield began brainstorming with ABE’s Dr. Jenna Rickus, and the two quickly realized what their role would be.

Together, these professors will establish a venue where students and researchers with diverse backgrounds can come together to develop new tools and technologies for basic research.

Dr. Porterfield explains that the laboratory will facilitate outreach among many disciplines by providing the physical infrastructure to connect them all. Moreover, the collaboration will allow for the creation of new tools and the adaptation of existing tools to make new research possible.

(continued on page 18)
The 20th century saw revolutionary advances in biology, and such advances began driving and enabling a new field of engineering that is now called biological engineering.

A truly interdisciplinary field, biological engineering encompasses a broad range of areas varying from the nano to the global scales that all exist at the intersection of engineering and biological sciences. The future biological engineer will be expected to design, model, fabricate and even control living systems at the same level of detail that an electrical engineer designs electronic circuits.

"As engineers, our biological toolbox has recently exploded," said Dr. Jenna Rickus, an assistant professor of Agricultural & Biological Engineering. "Engineering solutions that utilize biological components and strategies are enabling novel solutions to problems of energy, biosecurity, agriculture, food safety, health and the environment."

But she explains that in light of the rapid growth of the biological sciences, academia has not yet achieved a steady production of biological engineers.

"Undergraduate and graduate programs are just now being created around the country, and it is important for Purdue to offer a biological engineering program to meet the needs of growing industries," said Dr. Rickus, director of a new five-year biological engineering integrated degree program in ABE.

The new integrated degree, Bachelor of Science / Master of Science program was created for students interested in biological engineering and advanced biotechnology, she said. Students will receive a B.S. degree in biological and food process engineering as well as an M.S. degree in a research area within biological engineering.

Dr. Rickus said one of the most exciting parts of the new program is that it will keep the Department of Agricultural & Biological Engineering ahead of this rapidly emerging field.

The plan of study integrates undergraduate research and laboratory experiences and is intended to prepare students for Ph.D.-level graduate studies or for research-oriented industry positions. Due to the early introduction of research into the undergraduate curriculum, the program can be completed in as few as five years.

Sara Layman (BFPE B.S. ’04, M.S. ’04), the first to complete the five-year program, explains that the opportunities it offers are most obvious in the roles one is prepared to take on after graduation.

"Research was probably the most exciting part of the program," Layman said. "Many students will work in a lab as undergraduates helping out professors or graduate students, but with this program the work you are doing is your own, even as a undergraduate. The professors are there to guide you and offer help, but the majority of the thought process and direction of the research is entirely up to you."

Layman, who went to work at Serim Research after graduation as its head scientist, said the program allowed her to enter the company at a higher level, and it also gave her a competitive advantage in her later application to Ph.D. programs.

"Interviewers from other schools liked the fact that I had already written a thesis and knew how to conduct solid research," she said. "They seemed genuinely impressed with Purdue’s program."

Dr. Rickus, Layman’s faculty adviser and now the program’s director, said she hopes the program will facilitate a path similar to Layman’s for many students in the years to come.

"My hope is that this emerging program will be a nucleation point for Purdue’s ABE Department to become the premier provider of biological engineers to industry and to academia," Dr. Rickus said.

Those interested in learning more about this new program should contact Dr. Rickus (rickus@purdue.edu), Professor Martin Okos (okos@purdue.edu) or Professor Nate Mosier (mosiern@purdue.edu).

Applications can be downloaded from: https://engineering.purdue.edu/ABE/Undergrad/be-dual-page.htm
While other kids her age were learning their ABCs, Liz Hilkert was more interested in learning about the world around her.

“From a young age, my dad taught me that you have to know where you are from first, before you can appreciate the rest of the world,” she said. “So we traveled a lot in the U.S. when I was a kid. When I was 13, I started sponsoring a child in Honduras and wrote to her in Spanish. It seems like I’ve always had an instinct to travel and understand as much as I can about the rest of the world.”

A May graduate in ABE/ENRE, Liz has visited Australia, Canada, Mexico, England and Scotland, all in search of global understanding. So when Dr. Rabi H. Mohtar, ABE associate professor, told Liz about an opportunity to visit North Africa and study its water supply problem, she couldn’t wait to get on board.

In January 2005, Liz traveled to Tunisia to attend an international workshop on watershed management in dry areas in Tunisia. The conference was co-organized and co-chaired by Professor Mohtar, Adriana Bruggman (ICARDA), and Mohammad Ovessar (IRS) as part of an on-going Purdue-Institute Region Arid (IRA) project on water management in dry areas. Funds to support this work come from the USDA/FAS. The International Center for Agricultural Research in Dry Areas (ICARDA) and IRA are Purdue’s partners in the project.

Purdue was represented at the conference by Dr. Riall Nolan, director of international programs; Dr. Bernie Engel, ABE department head; Dr. Kevin McNamara, professor of Agricultural Economics; and Dr. Mohtar.

Liz joined the team working to create a way to capture storm water and transport it to an underground aquifer with minimal maintenance.

Dr. Klein Ileleji, ABE assistant professor, said Liz’s participation in the workshop was important not only because of what Liz might contribute to the problem, but it was also important because it gave her an opportunity to implement her training in a different culture. “In today’s world, most organizations employ people with different backgrounds,” Dr. Ileleji said. “This experience will give her cultural training that would allow her to work in many different cultural communities.”

The project is currently in the design phase, and Liz said she is working on testing to simulate the actual structure to “make sure there isn’t some flaw I’ve overlooked.”

Fethi Abdeli, a Tunisian scientist, visited Purdue in February to work with Liz and support her in the design phase and to work on other modeling projects with Professor Mohtar. Liz is also working with teams in Tunisia who can give her input about how feasible the design will be in their area. The goal is that once testing is complete, one prototype well will be installed in Tunisia and monitored for a period of time. If the system proves itself economically viable, other wells will be installed in the watershed and other parts of Tunisia.

“Hopefully, the new well design will more effectively help the water supply stay sustainable for years to come so people can continue to use adequate amounts of drinking, irrigation and grazing water,” she said. “This will have a huge impact on their health, their livelihood.” An impact, Liz said, that she never could have made if she had not seen the country with her own eyes.

Most obviously, Liz said her time in Tunisia gave her a better appreciation for water-harvesting structures and an understanding of the challenges arid regions face in terms of the lack of scientific data. She also learned a lot about the indigenous people.

But perhaps the most important thing the trip taught her was not about other cultures but rather about herself.

“I came to realize that no matter where I work, I just want to make a direct impact in someone’s life at the end of the day,” Liz said. “Helping other people gives me a high when I can see the improvement, however small, in their lives. It makes all of the work worthwhile.”

Liz started her professional career with her goals in mind. Liz accepted a position as a career intern with the Natural Resources Conservation Service (NRCS) in California and will be working under a professional engineer on water quality and erosion control structures for Marin and Sonoma counties. Liz has also connected with a professional Engineers Without Borders group in San Francisco and will be working with them on a project in Tanzania.

For more information about our graduate program and research activities visit our website: www.purdue.edu/abe/grad
The ABE Quarter Scale Tractor team successfully competed in the 2005 ASAE Quarter Scale Tractor Student Design Competition in East Moline, Illinois on June 6 and 7. The team placed 4th overall topping twenty-five other collegiate teams from across the U.S. and Canada. In addition to ABE highest overall ranking in six years of competition, the team placed 3rd for their design and written design report.

This was Professor John Lumkes’ first year as faculty advisor for the team and he was very proud of the team’s performance and is already thinking of ways to improve for next year.

Spring Fest

Above: Kevin Eikenberry addressing graduates.

Right: T.J. Idlewine and Mike Keil

Sarah Amlung

Above: Professor Maier and Bullock
Agricultural & Biological Engineering Scholarships

- Michael Bournias, Sr. ABE, Warren, OH
- Chad Cepeda, Jr. BFPE/BCHM, LaPorte
- John Koehler, Jr. BFPE/BCHM, Ames, IA
- Elspeth Larson, Jr. BFPE/BCHM, Indianapolis
- Amy Penner, Sr. BFPE, Schaumburg, IL
- Chelsea Steele, Jr. BFPE/PHRM, South Bend
- Diana Tjahjono, Jr. BFPE, Indonesia
- Yunita Wijaya, Jr. BFPE, Indonesia

Bridgestone/Firestone Scholarship

- Greg Long, So. ABE, Clay City

Caterpillar Scholarships

- Scott Federer, So. ASM, Francesville
- John Mahrenholz, So. ABE, Poseyville
- Philip Wetzel, Jr. ABE, Indianapolis
- Adam Zeller, So. ASM, Noblesville

Eaton Scholarships

- Keith Harmeyer, Sr. ASM, Batesville
- Michael Holland, Sr. ME, Noblesville
- Jacob Misch, Sr. ASM, Wheatfield
- Christopher Torsell, Jr. ABE, San Pierre
- Philip Wetzel, Jr. ABE, Indianapolis
- Jess Yegerlehner, Jr. ASM, Clay City

GEAPS Hoosier Chapter Scholarship

- Ross Chapman, Jr. ASM, Bloomingdale

General Mills Scholarships

- Elspeth Larson, Jr. BFPE/BCHM, Indianapolis
- Amy Penner, Sr. BFPE, Schaumburg, IL
- John Schumm, Jr. BFPE/PHRM, Skokie, IL
- Jacqueline Velasco, Jr. BFPE, Highland

John B. Greiner Scholarships

- Anna Alsman, Sr. BFPE, Vincennes
- Jared Baird, Sr. BFPE/PHRM, Marysville
- Matthew Hurm, Sr. BFPE/PHRM, Rockport
- Katherine McCormick-Bush, Sr. BFPE/PHRM, Columbus
- Jessica Sloan, So. BFPE/PHRM, Skokie, IL

Ag Research Fund Scholarship

- Chad Cepeda, Jr. BFPE/BCHM, LaPorte
- Brittany Phillips, So. BFPE/PHRM, Monroe, WI
- Kathryn Hoff, Fr. BFPE/PHRM, Appleton, WI

G. W. Krutz Scholarship

- Brandon Bechtel, So. ABE, Lafayette

Parker Hannifin Scholarships

- Adam Conklin, So. ABE, Marengo
- Peter Rummel, So. ABE, Nappanee
- Jess Yegerlehner, Jr. ASM, Clay City

New Century Scholarships

- James Bartlett, Fr. ABE, Grand Island, FL
- Andy Berg, Fr. ABE, Ferdinand
- Craig Blough, Fr. ABE, Goshen, IN
- Kyle Brune, Fr. BFPE, Fountaintown
- Danielle Carpenter, Fr. BFPE/PHRM, Plainfield
- Benjamin Heber, So. ABE, Greenwood
- Ruth Hegarty, Fr. BFPE, Lafayette
- Keith Mears, Fr. ABE, Delphi
- Julie Morby, Fr. ABE, Lake Villa
- John Schumm, Fr. BFPE, Oro Valley, AZ
- Alice Wilson, Fr. BFPE, Mishawaka

Matthew & Lesa Reynolds Scholarships

- Jacqueline Velasco, Jr. BFPE, Highland

College of Agriculture - Outstanding Freshman

- James Bartlett, Fr. ABE, Grand Island, FL

Purdue Student Engineering Foundation Outstanding Senior & Graduate Student

- Keith Harmeyer, Sr. ABE, Batesville
- Maureen Beck, M.S. ABE, Dunlap, IL

Dept. of Foreign Language & Literatures Excellence in Teaching Award

- Jose M. Garcia, M.S. ABE, Columbia

Magoon Award Honoree

- Bradley Kaufman, M.S. ABE, Wabash

Celebration of Graduate Student Teaching Honoree

- Bradley Kaufman, M.S. ABE, Wabash

https://engineering.purdue.edu/ABE/Undergrad/scholarships.whtml
Mani-Pure Anyone?

A three-member, all freshman team took top honors in the Soybean Utilization Contest held recently in Indianapolis. The product, Mani-Pure, an all-natural, soy-based nail polish remover, nail conditioner and cuticle softener, now will undergo additional research to possibly be commercialized. Janice Patterson of the Indiana Soybean Board (seated) is given a Mani-Pure manicure by team members (standing from left) Susan Long (Foods & Nutrition), Courtney Howard (German/Sociology), and Ruth Hegarty (BFPE). The team was mentored by Professor Klein Ileleji, a new ABE Assistant Professor. Information on the 2005 contest can be found on the Agrinews website. http://www.agrinews-pubs.commain.asp?FromHome=1&TypeID=1&ArticleID=8355&SectionID=1&SubSectionID=262

The Purdue ABE Student Chapter of ASAE will host the 2006 ASAE Midwest Regional Rally in February 2006. Phil Wetzel (ABE Junior) and James Bartlett (ABE Freshman) will serve as co-chairs for the weekend event. The Rally will bring ASAE student members from 15 universities within the region to the West Lafayette campus. Activities for the weekend will include local industry tours, Purdue engineering school tours, a business meeting, and social event.

The students would also like to provide the opportunity for ABE alumni to talk with the group about their professional experiences. If you are interested in possibly speaking to the group please contact Phil (pwetzel@purdue.edu) or James (jcbartle@purdue.edu).

2005 Outstanding ABE Engineering Students

Maureen Beck was honored as the ABE Outstanding Graduate Engineering Student. Maureen studied Machine Systems Engineering and is now working for Caterpillar in Peoria, IL in the hydraulics testing area.

Keith Harmeyer was selected the ABE Outstanding Senior Engineering Student. Keith earned his B.S. in Machine Systems Engineering and will continue on to graduate school this fall.

James Bartlett (Fr. ABE), was recognized as the College of Agriculture 2005 Outstanding Freshman. James is concentrating his studies in the area of machine systems engineering. He is an active member of the American Society of Agriculture Engineers and ABE Quarter Scale Tractor Team.
Kevin Price (ABE B.S. 2000)

Anthony D’Angelo once advised to, “become a student of change. It is the only thing that will remain constant.” If Kevin Price learned nothing else in college, he learned this.

After graduating from ABE in Machine Systems in 2000, Kevin found himself in uncharted territory. Graduating, getting married, moving to Georgia, and beginning a career started the wheels of change.

Fortunately, Purdue helped Kevin become ready to handle anything that might come his way.

“ABE has provided me with the confidence that I am prepared for the world, as good, if not better, than a grad coming from any other school or program in the nation,” he said.

In his job at Yancey Power Systems, Kevin was responsible for a new division of the company called, Yancey Power Packaging. This group provides custom packaging solutions for generator and engine products, which includes weather protective and sound attenuated enclosures for generator sets, custom factory testing, and power systems development for Caterpillar Electric Power.

“I also spent part of my job managing the high profile projects, mainly for data centers, the Center for Disease Control and Southern Company Electric Power,” he said.

This role allowed Kevin to apply basic diesel and natural gas engine engineering everyday, as he designed for engine applications. Kevin also utilized mechanics of materials and machine design for the base and enclosure.

“I never did the same thing twice,” he said. “The North American power generation market is unique, and there are always new solutions to create. There are challenges with products, people and facilities everyday.”

Kevin attributes his success in managing the demands of his profession to the training he received in ABE.

“Purdue ABE has provided me with the engineering fundamentals that have allowed me to succeed in the company and in the industry,” he said. “ABE 330, 210, 405 and 450 all stand out in my mind as being major contributors to my success.”

So while other grads might view such industry challenges as daunting, they are the main reasons Kevin loves what he does. “I have the opportunity to mold the industry with one of my solutions and reach customers worldwide.”

Kevin recently made a career move and rejoined John Deere where he co-oped while he was an ABE student. He is working in the Engine Engineering Application Design group where his responsibilities include developing components and systems to meet marketing requirements on the 4045 & 6068 Tier 3 OEM engines. Kevin is working with a team to design, develop, and release all of these necessary components which will then be adopted into each of Deere’s internal applications as fit, Construction & Forestry or Ag Divisions.

Kevin says his new responsibilities are “a fun challenge as we are moving so quickly, and the engines are becoming very complicated due to emission requirements.”

Discovery Park (continued from pg. 11)

“You can’t study something if you can’t see it, measure it or sense it,” he said.

“We will develop the new tools for discovery in the biological sciences.”

Some of the projects Dr. Porterfield and Dr. Rickus hope to undertake include creating implantable, multifunctional probes for cancer research applications; crafting wireless sensor probes to monitor water quality; and developing sensors for plant hormones relating to a plant’s ability to bend toward light. “In addition to the opportunity for growth ABE will have in the area of biological sensing, the lab will provide students with a unique opportunity to be a part of the development of emerging tools and technologies,” Dr. Porterfield said.

“The area is evolving very quickly, and students will see that they can have a big impact in a short amount of time,” he said. “Students with very diverse backgrounds will now have a venue to come together under the umbrella of Ag and Biological Engineering. That’s exciting because we’re writing the rule book as we go.”

(continued)
**Class Notes**

**1950’s**

Robert DeGraff (AGEN B.S. ’58, M.S. ’60) has retired from a 21 year career with Werner Co. and 25 year career with International Harvester. He currently is “semi-retired” taking on some consulting jobs. Robert fondly remembers being a member of the ASAE student group who participated in the 1st Purdue Grand Prix race. He says they would have won if they hadn’t frequently run into the slower carts on the sharp turns.

**1960’s**

Harmon L. Towne (AGEN B.S. ’63) retired from Brock Mfg in January 2003 and moved to east Tennessee where he and his wife are enjoying their new home and retirement. He is as busy or busier now than when he worked. Harmon tries to play golf twice a week, is involved in the local Lion’s club and their fund-raising efforts as well as serving as a volunteer fire department first responder.

Harmon is also active in the local Purdue Alumni club and tries to attend one football game a year and watches one or two football and basketball games at a local sports bar. He also helps provide scholarships for local students attending Purdue.

**1970’s**

Eandro Mantovani (AGEN M.S. ’81, Ph.D. ’84) has recently accepted a new position within Embrapa, the Brazilian Agricultural Research Corporation. He is now Secretary of Management and Strategy working in the Strategic Management Unit-SGE at Embrapa’s Headquarters.

**1980’s**

Francisco Cucalon (AGEN B.S. ’82, M.S. ’83) wrote in to share memories of his years at Purdue and ABE. Francisco’s father passed away in March and he expressed that many fond memories of his father are linked to his years at Purdue. He reflected on happy times with classmates and teachers including Professors Krutz, Gibson, and Hinkle.

After graduation from Purdue Francisco went to Northwestern, earned his MBA and went to work for DeKalb-Pfizer Genetics (DPG). After six years with DPG he returned to Ecuador to work in the family business which involves the production of fresh bananas for export. In the early 90’s Francisco and his father formed the company Ecofrut which produces snacks from plantains and bananas. They are now the leading exporter of Plantain and Banana Chips in Ecuador.

**Discovery Park** (cont. from pg. 18)

Though several multidisciplinary efforts at Purdue have been unsuccessful in the past, Dr. Porterfield is confident in the optimistic future of this endeavor because of the unique collaboration in leadership.

Multidisciplinary efforts will not happen naturally, he said. “Rather, the driving force for such an undertaking must be in multidisciplinary individuals,” Dr. Porterfield said. “And that’s exactly what Jenna and I bring to the table. This won’t be easy, but we have the experience to make it work.”

**1990’s**

Kevin Kelley (ABE B.S. ’92, M.S. ’95) worked in industry for three years before joining the family farming operation. He married Amy Gabor Kelley on March 20, 2004. Amy is a 1998 graduate of Purdue and currently works for Smith Barney as a Senior Client Service Assistant.

Steve Cooprider (Ag Mech. B.S. ’96) is a Sr. Business Process specialist for General Dynamics Armament and Technical Products (Defense and Aerospace Industry) in Lincoln Nebraska. After graduation he went to work for Hormel Foods as a Quality and Process Control Engineer for 4-1/2 years then left to work for Ayaya/Connectivity Solutions as a Quality Assurance Engineer. He became part of the Six Sigma program and is currently Six Sigma Black Belt certified and involved with business process management and improvement. Steve and his wife Heather have two daughters ages nine and four.

**Classmate Lost & Found**

Robert DeGraff would like to hear from any 1955 - 1960 classmates. He can be contacted at 1137 Overton Court, Naperville, IL 60540, phone (630) 430-9049.

**Your News is Good News...**

Please share your accomplishments and activities, and remember to keep us updated with your current address and email. Your classmates and fellow alumni like to keep in touch by reading Class Notes.

Send your news to the ABE Newsletter Editor:
Melissa Davies
Purdue Univ. ABE Dept.
225 S. University Street
West Lafayette, IN 47907
or email to: daviesm@purdue.edu
## Your Opinion Counts

As editor of the ABE newsletter, I am always looking for new story ideas and ways to improve the publication. New technologies are changing the way we produce and distribute communication pieces as well as changing the way we access and read information. I would like hear your opinions on receiving electronic publications via email or perhaps receiving the newsletter once a year instead of the current schedule of fall and summer issues. Please contact me with your ideas and suggestions at daviesm@purdue.edu or (765) 494-8162.

Last September we started a new department publication, ABe-notes. This is a less formal bi-weekly piece that highlights department activities, faculty paper publications, grants awarded to faculty, and various other department announcements. ABe-notes has become a great source of department information and is now available for you to review on the ABE web site under News and Publications on the ABE home page. [https://engineering.purdue.edu/ABE/News/abe-notes_index.html](https://engineering.purdue.edu/ABE/News/abe-notes_index.html).

## Thank You for Supporting ABE

The ABE faculty, staff, and students would like to thank all of you who so generously support the department with your donations to the annual Telefund campaign. Gifts made to the Telefund are used to support funding for teaching lab equipment, student scholarships, student projects, and other department expenses that are not funded by other revenues. In this time of state budget cuts, your support has become instrumental in our efforts to maintain quality and excellence in academics, research and outreach.

Once again, thank you. If you would like to know more about department activities check us out on the Web.

[www.purdue.edu/abe](http://www.purdue.edu/abe)

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### Calendar

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<td>2005 Annual ASAE International Meeting, Tampa, FL.</td>
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<td>Purdue vs. Notre Dame</td>
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<td>Purdue Alumni &amp; Friends Complimentary Breakfast @ ASAE</td>
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<td>Purdue Alumni &amp; Friends Complimentary Breakfast @ ASAE</td>
<td>Purdue Day @ Indiana State Fair</td>
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<td>Fall Classes begin</td>
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<td>Purdue vs. Arizona (Away) 7 MST</td>
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<td>Farm Progress Show, Decatur, IL</td>
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<td>Purdue vs. Minnesota (Away) TBA</td>
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**Address Service Requested**