GREETINGS

Hello to our many alumni and friends of the Department of Agricultural and Biosystems Engineering at Iowa State University. It is with pleasure that we send you news from the ABE department.

We are proud to be able to report that the department is a busy, vibrant place where learning and discovery are exciting and challenging to students, staff, and faculty. Since our last newsletter, we have made great strides in renovating several laboratories and making other improvements in Davidson Hall to provide a better learning environment for our growing student population. Enrollments for our two undergraduate programs continue to increase. Our ag engineering program has 115 students and there are 140 students in the ag systems technology program. These numbers have been growing steadily since our graduates have been receiving excellent employment opportunities for exciting careers upon graduation. Nothing like success to sell a program!

In this newsletter, you will have an opportunity to meet some of our newest faculty, see some of our improvements to Davidson Hall, and read about several other successes. However, before I leave you with the idea that everything is great, I need to let you know that our program continues to need help from our alumni and friends to remain a strong leader in agricultural engineering. Even though we have been able to scrape together some renovation funds, we are only putting off the inevitable. We will need a new building or facility soon. You may have heard about our move into the National Swine Research and Information Center in recent news releases. It is true that some of our faculty, staff, and graduate students, working on projects involving swine environmental issues, will be occupying significant laboratory space in this new building. This will give us some temporary space relief but will also create some departmental administrative problems when part of the faculty is split away from Davidson Hall.

Our space problems for the department will probably not be solved with anything less than a new building. We have been on a long-term planning list for many years. However, we continue to be superceded by projects with high political profile and those with significant private funding sources in hand to supplement any state support for capital construction. We will need to develop political and financial support to get a new building for this department on the ISU campus. In addition, we need financial support for scholarships to attract and assist many good, deserving students who have financial restraints during their college years.

The ABE department is on the go and is truly one of the educational and research leaders in the nation in both agricultural engineering and agricultural systems technology. You can be proud of the accomplishments of the department—from the new information being generated to solve agricultural engineering problems to the success of our students and the success we have as a department when competing on the national scene. We can and will get better with time as a result of our commitment and leadership to "Become the Best." I hope you find the information in this newsletter exciting and satisfying. Please keep in touch with us and let us know of any news you have so other alums and friends know what you are doing. We welcome you to drop by the department anytime you are in the Ames area. I think you will like what you see!
Research being conducted at ABE’s new Livestock Environment Building Research Center (LEBRC), located on the east edge of the Agronomy and Agricultural Engineering Research Center west of Ames, is using a three-pronged approach to answer questions about livestock waste management and associated odor issues. Currently on the grounds are the Manure Treatment and Bio-Dispersion Lab supervised by Assistant Professor Tom Richard, the Air Dispersion Lab supervised by Associate Professor Steve Hof, and the Odor Abatement Lab under the direction of Professor Dwaine Bundy.

New options for manure treatment, energy recovery, and composting are being studied in the Manure Treatment and Bio-dispersion Lab. For solid manure handling systems such as dairy and hoop-house swine set-ups, efforts focus on improving drying and volume reduction as well as increasing product consistency. For higher moisture materials such as swine manure solids and many food and biotechnology byproduct streams, the emphasis is on using the composting process for drying and reducing bulking amendment requirements.

Steve Hof’s Air Dispersion Lab was placed in service in the summer of 1997. Associate Professor Jay Harmon and Professor Duane Mangold assisted in the development of this facility, which is a full-scale testing chamber designed to evaluate commercial livestock ventilation systems in a simulated swine production arrangement. This set-up is one of only two in the world, the other being located in Denmark. Heaters simulate heat production from pigs and can be adjusted to reflect varying animal weights. Simulated lighting, water lines, feed lines, and feeders aid in providing a realistic environment. Fans, injectors, and controllers are simultaneously tested and monitored to assess how well they control temperature and airspeed in each of the six 8-ft-by-20-ft pens. The arrangement is flexible enough to test many types of systems. Evaluations are done for air distribution, flow pattern, and air speed as well as uniformity of temperature, ventilation rates, and energy consumption. Besides giving feedback to manufacturers, the research will also be used to develop standards for ventilation systems. Further details can be found at <www.ae.iastate.edu/research.htm>.

Professor Bundy’s Odor Abatement Lab offers several testing procedures to waste management companies who manufacture, develop, and distribute manure additives for odor control. A product can be tested for its odor reduction capability and also for its ability to digest nutrients and its pumpability. Measurements of hydrogen sulfide are taken by a Jerome Hydrogen Sulfide Analyzer, ammonia by Gastec tubes, odor by dynamic olfactometry in the Olfactometry Lab located in Davidson Hall, and several other compounds through mass spectrometry. Chemical analysis also provides more information about pH, COD, volatile fatty acids, suspended solids, and volatile solids.

At this time, the LEBRC is only partially occupied. As additional funds become available to complete the facility, research at this new laboratory complex will expand to help satisfy the intense demand for answers to agriculture’s waste management challenges.
UKRAINIAN AG EDUCATION REFORM
by Program Assistant Sue Ziegenbusch

Iowa State University has been actively involved in a partnership with the National Agricultural University of Ukraine (NAUU) that began with student exchanges. As the social, political, and economic scenes changed in the Ukraine, the need for agricultural education reforms became apparent. Because of Iowa State’s international experience and the already established ties, NAUU approached Iowa State to assist in the reform process.

ABE’s Carl Anderson was one of seven faculty members who spearheaded the effort that eventually required the combined talents of 23 Iowa State and 39 NAUU faculty and staff. Anderson worked specifically with two departments at NAUU, one involved with mechanization of agriculture and one focused on electrification and automation of agriculture. These two departments teach material that is most closely associated with the traditional areas of both power and machinery and electrification and processing at Iowa State. Through their shared knowledge, a new educational plan was created for American-style BS and MS degree programs.

Twenty-five countries sent representatives to a conference in Kiev in September 1998 that featured the new plan. It was at this time that the International Consortium for Agricultural Education was established to unify agricultural programs worldwide and to provide for faculty and student exchanges. The key universities involved were ISU, NAUU, and Humboldt University of Berlin. ISU President Martin Jischke is serving as the consortium’s first president.

The Kiev conference was held in conjunction with the celebration of the 100th anniversary of NAUU. At ceremonies conducted there, several ISU faculty members became honorary professors at NAUU, with Anderson receiving an honorary professorship in NAUU’s Department of Mechanization of Agriculture.

ISRAEL TRIP OF CARL BERN
by Program Assistant Sue Ziegenbusch

In late May and June of 1998, Carl Bern visited Israel as a participant in the International Research Grants Program sponsored by the College of Agriculture. He was a guest of Dr. Nachman Paster of the Volcani Center outside Tel Aviv. Bern visited corn import and storage facilities throughout Israel and worked with Dr. Paster and ABE Professor Charles Hurburgh to prepare a research proposal submitted to the U.S.—Israel Binational Agricultural Research and Development Fund.

Israel imports all of its corn, most of which comes from the United States. Spoilage occurs frequently after the corn has arrived and been placed in storage. The study proposed by Bern, Paster, and Hurburgh will look at ways to predict and eliminate those spoilage problems.

INTERNET ACCESS
by Program Assistant Sue Ziegenbusch

Going visit ABE at the Web! There, you will be updated on current research, teaching developments in the department, changes in faculty due for upcoming events, and extension information about Iowa State University’s agricultural operations. There are also many links to other Iowa State University departments and services.

The site address is: [http://www.abe.iastate.edu](http://www.abe.iastate.edu).

CHECK US OUT!
AE HONORS PROGRAM

by Professor Carl Bern

The Honors Program at Iowa State provides an opportunity for high-ability undergraduate students to enhance their educational experience by planning their own course of study, completing an independent study project, enrolling in Honors courses and seminars, and other activities. Honors students must maintain a grade point average of at least a 3.35. Agricultural engineering ranks second in the College of Engineering in the percentage of Honors students (4.2%).

All Honors students present posters describing their independent study projects at Honors poster sessions each semester. Two recent posters by agricultural engineering students are noted below.

Fall '98 grad Jay Fallick worked with Associate Professor Bill Batchelor's research group. His project, "Coupling Soybeans Cyst Nematode Damage to CROPVRO-Soybeans," won second place in the College of Engineering Fall '98 Honors Poster Competition.

Senior Robert Cogdill's Honors project, "Modeling Effects of Splits on Soybean Deterioration," was awarded second place in the Spring '99 competition. As noted in a later article, Cogdill won the 1998 ASAE K. K. Barnes competition with his presentation on this project.

ADMINISTRATIVE APPOINTMENT

by Program Assistant Sue Ziegenbusch

Ramesh Kanwar, ABE professor in water and environment, has been appointed to a three-year term as assistant director of the Iowa Agriculture and Home Economics Experiment Station. In this capacity, Dr. Kanwar is responsible for administration of research projects in the experiment station, serves as an administrative advisor for national and regional projects, and manages administrative programs on minority graduate student assistantships and faculty research exchange programs with 1890 (historically black land-grant) and 1994 (tribal) schools. He also develops new initiatives with the World Bank on international grants and scientific exchange programs with other countries, coordinates the ISU-Indian Council of Agricultural Research work plans under the NATP World Bank Project, and works on other special projects of the experiment station.
ALUMNI UPDATES

1970s

David L. D. Smith, MSAE '78, PhD '81, of Pulloxhill, Bedford, United Kingdom, is a senior business manager for the Silicon Research Institute. His current responsibility is to secure research funding.

1980s

Brent J. Dorman, BSAE '81, MSME '81 Case Western Reserve, of Yokohama, Japan, is the managing director of Nihon Timken K.K. for the Timken Company, Canton, Ohio. He served as the general manager of Timken de Mexico for four years. He and his wife Virgene, are parents of two daughters.

Raymond L. Huhnke, PhD '80, was elected to the grade of Fellow of ASAE in 1998.

Baxter Parris, BS AgMech '81, of Appomattox, Virginia, is a power house operator for the Virginia Fibre Corporation. He has three children.

R. Nicholas Gubser, BS AgMech '84, of Jacksonville, Florida, is the regional sales manager for Westway Trading Corporation. He and his wife, Amy, have one son.

Glen Turner, BS AgMech '87, of Springfield, Illinois, is a territory manager for Wilfroam L.L.C. Glen has become a certified crop advisor. He and his wife, Sarah, have a daughter and a son.

William E. Willey, BSAE '85, MSAE '87, of Gowrie, Iowa, has returned to operate the family farm. He is also doing some part-time structural engineering. He and his wife, Mary Anne Dixon, MSAE '87, have two boys.

AST EMPLOYMENT OPPORTUNITIES

by Professor Duane Mangold

In 1998–99 there were 30 agricultural systems technology (AST) graduates, and employment opportunities continued their positive trend. Companies hiring AST graduates include Ag Chem Equipment Company, Ag Leader Technology, Almaco, Bunge Corporation, Cargill, Case Corporation, Caterpillar Inc., Deere & Company, Flexicoil, Growmark Inc., and Sukup Manufacturing Company.

Most positions involve technology management. Job titles include technical service representative, district sales manager, production supervisor, precision agriculture specialist, structures specialist, test technician, customer support specialist, and elevator manager trainee. Starting salaries ranged from $26,000 to $41,000 per year.

Several graduates returned to production agriculture with their family farming operations.

Deere & Company

Flexicoil

Growmark Inc.

Sukup Manufacturing Company
STUART BIRRELL
Stuart Birrell joined the ABE faculty as an assistant professor in November 1998. He received his Ph.D. in agricultural engineering from the University of Illinois, Urbana, in 1995. His areas of expertise include precision agriculture, sensors, and mechatronics. Along with various research responsibilities, Dr. Birrell teaches AE and AST classes in power and machinery design and management.

JENNI BRIGGS
Jenni Briggs joined the ABE faculty as an assistant professor in January 1999 after completing her Ph.D. in agricultural and biological engineering from Purdue University. As a member of the ABE faculty, she is teaching undergraduate and graduate classes in food process engineering. Her research involves food and value-added processing with an emphasis in rheology.

GRAEME QUICK
Graeme Quick joined the ABE faculty in December 1997 as an adjunct professor and leader of the power and machinery section. He received his Ph.D. in agricultural engineering from Iowa State University in 1972 and returned from his native Australia to accept this faculty position. He teaches classes in farm power and machinery management, machine systems, and senior design. Graeme also oversees research projects involving farm equipment, machinery, and industrial applications.

TOM RICHARD
Tom Richard, a 1997 graduate of Cornell University, joined the ABE faculty in February 1997 as an assistant professor. His research explores new options for biological treatment of manure as well as food and biotechnology byproduct streams. He teaches classes related to bioprocessing of agricultural byproducts.
SCHOLARSHIPS
by Associate Professor Bill Batchelor

Ag engineering and ag systems technology undergraduates compete for scholarships offered by the colleges of engineering and agriculture, respectively. Students in both programs compete for ABE departmental scholarships.

For the 1998–99 year, the award total came to $43,814. Seven upper-class students received $20,414 in various college-administered awards. An additional $8,000 was awarded by the department to sixteen incoming freshmen and to students holding continuing scholarships.

Thanks to all of you who have contributed to our scholarship fund! We are continually striving for progressive growth so that we can recognize even more deserving students. The department is attracting a large number of students who are deserving and who would be helped considerably by scholarships to assist them during their course of study. If you would care to become a part of this effort, please contact me for details (515/294-9906, bbatch@iastate.edu).

---

KEEP US CURRENT!

Please clip out and return, so we can be updated on alumni happenings.

Name ____________________________

Home Address ____________________________

City ____________________________ State ____________ Zip ____________

Home Phone (____) ____________ Work Phone (____) ____________ E-mail ____________

Business Title/Position ____________

Company/Institution ____________

Address ____________________________

City ____________________________ State ____________ Zip ____________

Year(s) Graduated ________ Degree(s) Received ____________

Career activities, professional honors, family information, other

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

Comments

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

Send to: Department of Agricultural and Biosystems Engineering, Iowa State University, 100 Davidson Hall, Ames, Iowa 50011
Fax to: 515/294-6633
E-mail to: sziegenb@iastate.edu
1998 was an outstanding year for the Agricultural Systems Technology (AST) Club. Just as the enrollment in the AST curriculum increased significantly, so did the number of active participants in the AST Club. Average attendance at club meetings soared to over 42 members a meeting—nearly double that of two years ago!

An initiative taken in 1998 was the development of the club’s web page, which contains listings of officers and committee chairs, an events schedule, and a links page to those companies who have supported the AST Club in the past. Though the page is still in development, the club hopes to have the site up and running in high gear sometime in 1999. The web site is <http://www.public.iastate.edu/~stu_org/AST/homepage.html>.

Early April brought warmer weather and the annual AST Club’s Lawnmower Service Days. This is the club’s only fundraiser and once again there was an excellent turnout of both lawnmowers and members to service them. Members earned nearly $1,700 to support club activities throughout the year.

VEISHEA, the student-run celebration of Iowa State University, was the main feature of spring for the ISU campus. Once again the AST Club’s agricultural machinery display on the south lawn of Davidson Hall was one of the highlights of the celebration. This year’s equipment included a variety of wheeled and track tractors, a combine, field equipment, and chemical applicators. The AST Club also had two entries in the VEISHEA parade. In total, the club had a display worth nearly $1,000,000, all organized by Jared Johnson, AST Club special events coordinator.

April also brought national ASAE recognition to one of the club’s members. Josh Olson, 1998 AST Club secretary, was awarded a National ASAE Student Honor Award for his excellence in the classroom, in the club, and in society.

The Mid-Central Conference of ASAE was held April 24 and 25, 1998, in St. Joseph, Missouri. The ISU AST Club was very successful at this conference, winning the Ag-Mech Club of the Year, the Ag-Mech Bowling Trophy, and the Student Mile Award. Howard Butler represented the AST Club in the student paper competition (see page 16). The club also took home the top prize for its report on activities of the past year.

National Ag Week was observed in September. The AST Club took advantage of the opportunity to display the latest in technology on the central campus lawn south of the Bell Tower. Many Iowa Staters, both young and old, stopped by the display to see how far ag technology has come.

When possible, the club tries to have a guest from the ag industry speak to members about their experiences in their careers, their thoughts on the future of ag, and what members should do to prepare themselves for the career market. This year’s speakers were from a wide variety of backgrounds including animal health, equipment, international marketing, and entrepreneurial ventures. This diversity really helps to broaden members’ thoughts about the ag industry and exposes them to career possibilities some might not have considered.

Finally, in order to see the latest in technology and network with people in industry (not to mention take a break from class), the AST Club took two major industry tours in the fall. Stops included Morton Buildings, Ag Chem Equipment, Unverferth Manufacturing, Caterpillar, DMI Equipment, Kinze Manufacturing, and the John Deere Pavilion.

Yes, 1998 was an outstanding year for the AST Club. But the future is even brighter with record numbers of students interested in the program and an outstanding young officer team ready to lead the club into the 21st century!