

# Agricultural and Biosystems Engineering Department

NORTH DAKOTA STATE UNIVERSITY FARGO, ND

# Newsletter

[HTTP://WWW.AGENG.NDSU.NODAK.EDU](http://www.ageng.ndsu.nodak.edu)

JUNE, 2003

## Department Chair's Comments



As many of you know, I have been associated with NDSU for virtually all of my adult life, beginning as a student in 1955 (then NDAC). My appointment as a faculty member began in January of 1966. I have served as a department chair since January 1991. These newsletter comments will be my last in the role of Chair. My retirement from NDSU and my current position occurred May 31, 2003.

Much has changed in these last 37 years of my faculty-life. Personally, I believe, the biggest driver of change has been the computer and the associated information and communication technology that has taken place. I began "hauling" punched cards by the tray-full to an IBM 1620 in my first year (1966) as an assistant professor. By the late 1970s we were using the Apple II. Floppy drives, word processing, spreadsheets, etc. soon followed. Satellites, sensors, GPS and GIS technology have transformed the way we communicate, travel, and "farm." Nantotechnology developments are appearing today with amazing future possibilities for applications to engineering for biological systems.

Agricultural Engineering and its associated Mechanized Agriculture discipline has also substantially changed over these 37 years. Developments of more biologically based programs has steadily taken place since the late 1980s. In our case, the Mechanized Agriculture name and curriculum was changed to Agricultural Systems Management in 1992. Our engineering program name and curriculum changed to Agricultural and Biosystems Engineering in 1996. In 2003, we began offering a Ph.D. degree in Agricultural and Biosystems Engineering.

In my term as chair, our collective departmental focus has been on the mission of developing and extending knowledge in engineering and technology (via teaching, research, and extension) that advances the productivity of agricultural production, the processing and utilization of biological materials, and the sustainability of environmental resources management.

I am immensely proud of our students as they graduate each December and May with the tools to compete with their peers anywhere in the world. A major change since my early faculty years is the high percentage of our students that do one or more co-op or internship placements during their educational process. These placements have become tremendously valuable in today's job market.

I have much enjoyed my work of these many years and I am very appreciative of the opportunities I have had to contribute to the department's mission. I am immensely proud of our department's faculty and staff and the dedication each has given to our programs. It has been my privilege to work for them these last several years. I have much appreciated their continuing support.

Professor Leslie Backer is the department's new interim Chair. Having worked with Les for these many years, I know he will do everything he can to take the department into exciting and productive future directions.

It has also been my privilege to meet with and greet many alumni, former faculty, and friends that have visited in my years as Chair. Your support, advice, and counsel have been greatly appreciated. Please continue to stay in touch.

### Newsletter Committee:

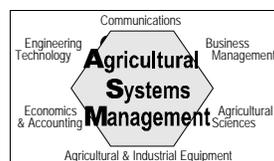
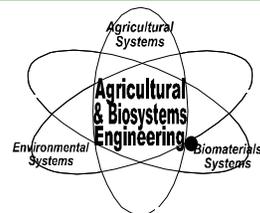
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# ABEN Completes Comprehensive Review

In March, our Department participated in a Comprehensive Program Review by the USDA Cooperative State Research, Education and Extension Service (CSREES). Seven panel members reviewed our programs, representing CSREES, university administrators (NDSU, Univ. of Nebraska, and Univ. of Wisconsin), and the State Board of Agricultural Research and Education of ND.

The principal review objective was to obtain guidance/recommendations from the CSREES Review Team regarding the department's planning and future direction for its teaching, research, and extension programs in the early 21<sup>st</sup> century. Some of the teaching program issues presented to and discussed with the Team included: curriculum transitions that address the continuing growth of biological science components in the ABEN discipline and the transitions that will broaden the department's student clientele base.

Department research and extension issue presentations and discussions included: growth of external resources to support the department's Ph.D. program and the future faculty needs given the expected retirements in the next 5-8 years.

Additional issues included: the planning and funding support for new/improved physical facilities of the department, and the future programmatic partnerships/relationships to be developed by the department.

## Teaching Highlights

### Elton Solseng Leads ASM Program in Teaching

Elton Solseng was recognized for his teaching service at the agriculture faculty and staff recognition and awards program February 27, 2003 at the NDSU Alumni Center. Elton joined the staff at NDSU in 1972 and was a technician and associate in Agricultural Engineering before starting his teaching career in 1976. His course load, which comprises over half the credit hours available in the Agricultural Systems Management program, includes a broad range of topics from machinery to hydraulics to electrical and electronics applications and use. He has taught over 2500 students in lecture and laboratory classes and has assisted with classes involving another 1400 students. He also has been involved in the research work of nearly every student who has earned an advanced degree in the department since about 1972. In addition to his formal classroom/lab instruction, he has been an adviser or co-adviser to numerous student organizations such as the Agricultural Systems Management Club and FarmHouse Fraternity.

### Leslie Backer Receives Excellence in Advising Award

Leslie Backer received the William J. and Angelyn A. Austin Advising Award for Excellence at an agriculture faculty and staff awards program February 27, 2003. Les joined the NDSU faculty as an assistant professor in 1976, advancing to associate professor in 1990. He routinely advises 35 to 45 undergraduate students in Agricultural Systems Management and Agricultural and Biosystems Engineering. He has also served as major advisor for M.S. students in the Agricultural and Biosystems Engineering program. Les coordinates efforts to place students in cooperative education positions and develops relationships to enhance placement opportunities for graduates. He has served on the college advising committee for ten years, helped develop the college advising handbook and advising evaluation instrument and has provided training for advisers. His advising abilities with students have long given him the reputation of the most sought after adviser in the department. He has always taken great interest in the welfare of the department's students.

### Suranjan Panigrahi Teaches Data Base Mining at ASAE 2002 Meeting in Chicago

Suranjan Panigrahi was the lead presenter of a one-day continuing professional development workshop entitled, "Fundamentals of Database Management and Data Mining Techniques for Agricultural Applications. Sponsored by ASAE (the Society of Engineering in Agricultural, Food and Biological Systems) the workshop was offered on July 28, 2002 during the Annual International ASAE conference in Chicago, IL. Dr. Pabitra Dash, a faculty member from Mayville State University, ND, was also a co-presenter at this workshop. The training focused on computer technology trends, database management systems, and data-mining techniques including neural networks and their use for selected applications in agriculture.

## Faculty, Staff & Student Recognition/Honors

### Leslie Backer

William J. and Angelyn A. Austin Advising Award for Excellence  
 - College of Agriculture, Food Systems and Natural Resources Faculty/Staff Awards  
 Dean's Award, Excellence in Teaching 2002  
 - College of Engineering and Architecture

### Ken Hellevang

Elected chair of the ASAE International Meetings Committee-responsible for organization & execution of the annual meeting with 141 technical sessions

### Tom Scherer

NDSU Extension Services Recognition  
 —15 years of service

### Elton Solseng

2003 Honorary Minnesota FFA Degree  
 - Minnesota FFA Association

### Jana Seaborn

NDSU Employee Recognition  
 —5 years of service award

### Kristi Tostenson

NDSU Employee Recognition  
 —10 years of service award

### Yunling Zheng, Ph.D. candidate

Graduate Researcher of the Year  
 College of Engineering and Architecture  
 AOCS Honored Student Award, 2003,  
 American Oil Chemists' Society  
 - Yunling is in her 3rd year of the Engineering Ph.D. program. She is researching the processing of flaxseed for edible applications.

### Joshua Dukart, ABEN undergraduate

2002-2003 Who's Who Among Students in American Universities and Colleges award.  
 - Joshua graduated May 2003 in ABEN. He is from Hazen, ND.

### Erika Hodgson, ABEN undergraduate

2002 William J. Adams Jr. and Marjiane E. Adams Scholarship—ASAE  
 - Erika graduated May 2003 in ABEN with an Agricultural Systems-Power and Machinery option. She is from Wyndmere, ND.

### Kurtis Riffey, ASM undergraduate

2002-2003 Who's Who Among Students in American Universities and Colleges award  
 - Kurtis graduated May 2003 in ASM in the Dealership Management Specialization. He is from Bismarck, ND.

# Research Highlights

## Department Graduates Four Ph.D. Candidates



### Thomas Bon

*Development of a Mechanical Broccoli Harvester, Analysis & Optimization of Selected Subsystems*

Tom Bon completed his Ph.D. program in ABEN May, 2003. His research consisted of developing an operational mechanical broccoli harvester to eliminate the need for field workers on the ground. Three broccoli harvester prototypes were developed

and tested, the second and third prototypes were improvements on the previous units. A working single-pass harvester was developed and field tested. It achieved harvest rates to 5.4 ac/da assuming a ground speed of 2 mph, a row spacing of 3 ft, and six hours of harvester operation per day. The harvester caused no major damage to the heads and florets. The hydraulic systems were optimized to minimize hydraulic system power requirements. Equations were developed from node-to-node analysis of the hydraulic schematic diagram of the system.

Tom's research on the mechanical broccoli harvester has been the basis for undergraduate senior design teams. He also presented a research paper, "Instrumentation and Measurements (ABEN 482)," at the 2001 ASAE annual international meeting in Sacramento, CA.

Tom will continue as Senior Lecturer in the Agricultural and Biosystems Engineering Department at NDSU.



### Md. Saidul Borhan

*Nitrogen/Chlorophyll Determination in Potato Plant Using Multi-spectral Sensing Technique*

Md. Saidul Borhan completed his Ph.D. program in ABEN December, 2002. The overall goal of his research was to investigate and develop a portable multi-spectral imaging system and associated techniques for determining nitrogen and chlorophyll content in potato plant leaves.

A lab prototype imaging system was developed with the following design features in mind; portability, safety, and cost effectiveness. A proposed field prototype imaging system was also developed for outdoor applications. This included two types: laboratory scale and walking type.

Borhan presented several research papers at international ASAE conferences over the past four years. The papers consisted of research on the evaluation of a hand held sensor for predicting and mapping chlorophyll and nitrogen status of a potato crop.

Borhan's initial appointment was a post doctoral position at Cornell University. He is currently a visiting scientist at the Biosystems Engineering Department, University of Winnipeg, Manitoba, Canada.



### Unal Kizil

*Feedlot Hydrology/Nutrient Management Program and GIS Software for North Dakota*

Unal Kizil expects to complete his Ph.D. program in ABEN by August, 2003. His research focus is in feedlot runoff and manure management modeling. GIS evaluations of current feedlot operations were also conducted considering North Dakota livestock

regulations. The overall goal of the research is to develop a complete feedlot runoff and manure management model and software program to estimate runoff and its concentrations generated from feedlots, and develop an online GIS database. The model has three modules written in Visual Basic programming language: hydrology/nutrient module, manure management module, and a storage or treatment system design module.

Unal has presented eight research papers at international ASAE conferences since 2001. See the other article on this page for more information on papers he presented at the 2002 ASAE annual international meeting held July 28-31 in Chicago, IL. He has also published a refereed journal article, "Spatial Evaluation of Feedlot Runoff and FeHyd Computer Program," in the Journal of Spatial Hydrology, vol.(1) no.(1), Fall 2001.



### Sudhanshu Sekhar Panda

*Data Mining Application in Production Management of Crops*

Sudhanshu Panda completed his Ph.D. program in ABEN May, 2003. His research focused on the use of data mining techniques (including statistical, neural network, and image processing) for production management

(primarily predicting crop yield from aerial images) of crops. He also worked on a precision farming project dealing with the development of soil nutrient zone mapping.

The precision agriculture research focused on creating automated global models for predicting crop yields before harvest. This may allow farmers to optimize their resources to increase production especially from the predicted yield. Another model could predict the water use (irrigated and rainfall) required in the field.

Panda has presented five research papers at international ASAE conferences since 2001. See the other article on this page for more information on the papers he presented at the ASAE annual international meeting held July 2002 in Chicago, IL.

He currently holds a Post Doctoral position in bioenvironmental engineering in the Biological and Agricultural Engineering Department at the University of Arkansas, Fayetteville.

## Faculty, Staff & Grad Students Present Research at International Conference

Faculty, staff and graduate students presented six research papers at the 2002 ASAE annual international meeting held July 28-31 in Chicago. The following presentations were made:

### FACULTY:

**Suranjan Panigrahi**—"Fundamentals of Data Mining and Database Techniques for Agricultural Applications;" "Algorithms for On-line Spectroscopic Sensing of Selected Agricultural Products;" "Electronic Nose System for Meat Quality Evaluation," authors, Panigrahi, Kizil, Balasubramanian, Doetkott, Logue, Marchello, Gu, Kubiak, Nolan, Schneider and Wiens.

Panigrahi also chaired a technical session entitled, "On-line Spectroscopic Sensing Techniques."

**Dean Steele**—"Planting Configurations for Sprinkler Irrigated Potatoes on Course Textured Soils," authors Steele, Greenland and Hatterman-Valenti.

**Tom Scherer**—moderated two sessions of "Water and Nutrient Management."

### STAFF:

**Huanzhong Gu**—"Fate Analysis of Spray Particles Using High Speed Computer Vision Systems," authors Venugopal, Panigrahi, Gu, Ebeling and Cheng.

### GRADUATE STUDENTS:

**Ramesh Gautam**—"Identification of Nutrient Zone Using Statistical and Neural Network Approach," authors Gautam, Panigrahi, Panda and Franzen.

**Unal Kizil**—"Design of Natural Ventilation Systems Using a Computer Program," authors Kizil, Simsek and Lindley; "Vegetative Filter Strips Modeling of a Small Watershed," authors Kizil and Disrud.

**Sudhanshu Panda**—"Analysis of Clustering Techniques for Predicting Soil NO<sub>3</sub>-N from Aerial Images," authors Panda, Panigrahi, Gautam and Franzen; "Precision Water Management Using Automated Crop Yield Modeling," authors Panda, Steele, and Panigrahi.

# Extension Program Highlights

by Ken Hellevang



## Developing Irrigation Pump Intakes for Shallow Water Sources

NDSU has an agreement with the Bureau of Reclamation to help irrigation organizations along the Heart River develop water conservation methods and technologies. The irrigators along the Heart River identified shallow water pump intakes for their centrifugal pumps as their greatest problem. Problems include vortexing that can cause loss of prime on the pump, plugging due to floating debris, and removing silt from pipes. Lowell Disrud and Tom Scherer, with help from a senior design team and Jim Moos, designed, built and installed three different types of improved pump intakes. Two floating and one submersible intakes were installed and tested on the Heart River last year. The farmers noted a significant reduction in plugging, no vortexing and increased flow rate from their pumps. Two irrigation dealers became interested in the designs and one dealer has built two intakes (both floaters) for his customers and the other dealer had the Alpha Epsilon Theta chapter build two floating intakes for him. Another senior design team recently completed an engineering design report that provided details for using an infiltration gallery under the riverbed to obtain sediment and debris free water for a center pivot irrigation system.

## Biodiesel Fuel

Biodiesel looks to be an excellent alternative to diesel fuel and Extension Agricultural and Biosystems Engineering has been providing educational information on the fuel. Vern Hofman demonstrated the process of producing the fuel from vegetable oil and using biodiesel to fuel an engine at most of the NDSU Research and Extension Center field days last summer. A new publication he wrote on biodiesel fuel is available from the extension service. Results of engine tests completed on a 4-cylinder Cummings engine using biodiesel were reported in an ASAE paper.

## Mold and Moisture in Buildings Education

Ken Hellevang provided education on mold and moisture in buildings as part of a satellite program conducted by the Healthy Homes program, which is coordinated by the University of Wisconsin. The program was downlinked by about 300 sites across the country with an estimated 1,500 participants. The Healthy Homes program is sponsored by USDA-CSREES and US Department of Housing and Urban Development. Ken also presented training on a similar topic in Washington, DC for state coordinators of the Healthy Indoor Air for America's Homes program sponsored by the Environmental Protection Agency and CSREES.

## Hand-held Computers in Extension Education

Sixty-five NDSU extension educators are using handheld computers to teach geospatial skills and for a variety of other computer technology applications as part of a NDSU Geospatial Education Program coordinated by Agricultural & Biosystems Engineering extension specialist, John Nowatzki. They are using handheld Compaq IPAQ computers in conjunction with handheld global positioning systems (GPS) units to mark field boundaries and determine area, mark GPS points and to demonstrate uses of satellite imagery and aerial photography in crop and range management. Other extension educators are using the geospatial equipment to teach youth how to use geographic information systems (GIS) computer programs and apply GIS, GPS and remote sensing technologies in community projects. The agents can also access most agronomic extension publications using the IPAQ computers by inserting a SD memory card containing the publications into the hand-held computers.

## Water Quality Websites

The Water Quality Program in Agricultural and Biosystems Engineering maintains two websites related to water quality issues; one for the six states in the Northern Plains and Mountains Region (EPA Region 8) (<http://waterq.ndsu.nodak.edu/>), and the North Dakota Water Quality site (<http://waterqnd.ndsu.nodak.edu/>). Water quality information generated by NDSU has been compiled and organized into the following categories: 1) Grazing and Riparian Management; 2) Irrigation Water Management; 3) Manure Management (AFO/CAFO); 4) Nutrient Management; 5) Pesticide Management; 6) Salinity; 7) Watershed Management; 8) Well-head Protection; 9) Wetlands; 10) Water Quality Programs for Specific Audiences; 11) Partners for Water Quality; and 12) North Dakota Water Quality Links. All NDSU Extension publications related to water quality can be easily accessed from this site. The site also provides the user with connections to faculty and staff at NDSU involved in teaching, research, and extension programs and provides links to various state, federal, and local sources of water quality information. Bruce Seelig provides coordination and development of the web sites assisted by a full-time website technologist, Dennis Rindy.

For more information visit our website at:  
<http://www.ag.ndsu.nodak.edu/abeng>

# Student News by Leslie Backer

## Agricultural Engineering Show

The 55th Agricultural Engineering Show was held on February 15, 2003. Managers of this year's show included:

### Managers:

Jenny Lees (ABEN Sr., Buchanan, ND)  
Nathan Boll (ASM Sr., Newburg, ND)

### Treasurer & Advertising Manager:

Cassie Joecks (ABEN Jr., Hutchinson, MN)

### Booklet Managers & Secretary:

Paul White (ABEN Sr., Gwinner, ND)  
Marys Disrud (ABEN Sr., Rolla, ND)

### Machinery Division Manager:

Jeff Duchscher (ABEN Sr., Rugby, ND)

### Power Division Manager:

Kade Nice (ABEN Sr., Ardoch, ND)

### Assistant Managers:

Allan Rohrich (ASM Sr., Zeeland, ND)  
Jared Schultz (ABEN So., Minto, ND)

### Awards & Banquet Manager:

Kris Kaffar (ASM Jr., Zap, ND)

### Show Ambassador:

Paul Reinholz (ABEN Fr., Molt, MT)

### Structures, Electrical Power & Processing Division Manager:

Sarah Hall (ASM Sr., Hoople, ND)

### Soil, Water, & Environment Mgr:

Andrew Marks (ASM Jr., Norcross, MN)

Fifty-nine students were involved in the 55th Annual Ag Engineering Show. These students showed 32 projects in four divisions. The Ag Engineering Show is a valuable learning experience for those who participate as well as for those who attend. Students have the opportunity to develop organizational and communication skills as either a manager or a show participant. Skills learned in this activity are directly applicable in their careers after graduation. Elton Solseng and Lowell Disrud serve as the advisors to the Show staff. The event is hosted by the Student Engineering Branch of ASAE and the ASM Club. The show results follow.

Grand Champion.....	Justin Muscha.....	Straw Bale House
Reserve Champion.....	Sarah Hall and Kevin Hall.....	Harriston Clod Hopper
Freshman Award.....	Casey O'Toole.....	Safe-T-Pull
Sr. Design Award.....	Erika Hodgson.....	John Deere Spike-Tooth Harrow Catch Design
Red River Valley Section of ASAE.....	Sarah Hall & Kevin Hall.....	Harriston Clod Hopper
<b>Power Division</b>		
1st Place.....	Christopher Arnston.....	Haybuster 1150 & 1155 Tub Grinder
2nd Place.....	Jeffrey Sather.....	John Deere IVT Transmission
3rd Place.....	Travis Hakanson.....	Biodiesel
<b>Structures, Electrical Power, and Processing Division</b>		
1st Place.....	Justin Muscha.....	Straw Bale House
2nd Place.....	David Mueller.....	Epoxy Sealant
3rd Place.....	Andrew Geggelman, Josh Metz.....	Trimble Lightbar Guidance System
<b>Machinery Division</b>		
1st Place.....	Sarah Hall, Kevin Hall.....	Harriston Clod Hopper
2nd Place.....	Troy Kind.....	John Deere 7000 Series Tractors
3rd Place.....	Jason Webster, Adam Sathre.....	Eagle Ditcher and Ronald Johnson
<b>Soil, Water, &amp; Environment Division</b>		
1st Place.....	Nick Nowatzki.....	Remote Control Aerial Photography
2nd Place.....	Trent Roth.....	Floating Irrigation Intake Design
3rd Place.....	Daniel Spellerberg, Blade Buck.....	Roundup's Rewards

## Student Organization Presidents from 2002-03



Hector Matthys, Sarah Hall, and Erika Hodgson

There is an old saying that if you want something done, give the job to a busy person and it will get done and done well! That perfectly describes the presidents of the department's three professional student organizations; Student Engineering Branch of ASAE, the Agricultural Systems Management Club, and Alpha Epsilon.

**Erika Hodgson, President**  
Student Engr. Branch of ASAE  
Wyndmere, ND

**Sarah Hall, President**  
Ag Systems Management Club  
Hoople, ND

**Hector Matthys, President**  
Alpha Epsilon  
Cottonwood, MN

### 2003-2004 Officers

#### ASAE Student Engineering Branch

President.....Matthew Loecken  
Vice Pres.....Trent Roth  
Secretary.....Michael Hunt  
Treasurer.....Justin Muscha  
CSO Rep.....Jason Webster  
CASAC Rep.....Jared Schultz  
E&A Rep.....Adam Sathre  
Scribes.....Nathan Carlson, Tanner Erickson  
and Paul Reinholz  
Advisers.....Leslie Backer & Tom Bon

#### Ag Systems Management Club

President.....Jesse Cook  
Vice Pres.....Allan Rohrich  
Secretary.....Jared Walz  
Treasurer.....Josh Metz  
CSO Rep.....Aaron Bartholomay  
CASAC Reps. Justin Risovi & Karl Jodock  
Scribes.....Justin Risovi & Karl Jodock  
Advisers.....Elton Solseng & Lowell Disrud

#### Alpha Epsilon

President.....Trent Roth  
Vice Pres/CSO Rep.....Steve Estvold  
Secretary.....Chris Arnston  
Treasurer.....Justin Muscha  
Advisers.....Leslie Backer & Tom Bon



Trent Roth, Matthew Loecken, and Jesse Cook

## John Deere Partnership News

**Scholarships**—Again this year, John Deere provided \$5000 for scholarships to be awarded to students majoring in either Agricultural Systems Management or Agribusiness and specializing in dealership management. This has allowed us to award individual scholarships in amounts from \$800-\$1200. The students are very appreciative of the support given to them by the John Deere Development Foundation.

**Equipment**—Last spring, John Deere replaced the model 6410 tractor we used in our teaching program with a new model 6420 tractor. It is their plan to update our tractor on an annual basis. John Deere also provided several lawn tractor transmissions for instructional use. Students in the dealership management specialization are also looking "spiffy" with new "Dealership Management" caps provided by John Deere.

**Internships**—Listed below are the names of the ASM students who interned at a John Deere dealership last summer.

Jon Eis.....Eis Implement, Two Rivers, WI  
Kurtis Riffey.....RDO Equipment, Bismarck, ND  
(graduated this spring - plans to attend graduate school at NDSU)  
Troy Kind.....RDO Equipment, Breckenridge, MN  
Alan Rohrich.....Saylor Implement, Wishek/Linton, ND

**Conference**—In November, Les Backer, Specialization Coordinator, and six dealership management students attended the Annual Dealership Management Conference sponsored by John Deere in Davenport, IA. Everyone had a great time. It was both educational and social. Participants visited the JD Harvester Works, a JD Training Center, the JD Pavilion, the JD Store, an Iowa John Deere dealership, and the John Deere World Headquarters. Students had the opportunity to interact with students from Kansas, Missouri, Tennessee, and Nebraska. They also had the opportunity to hear presentations from John Deere personnel on a number of topics. In addition, Troy Kind made a presentation about his internship to the entire group. Everyone agreed that Troy represented NDSU very well with his presentation.

**Banquet**—In October, the first annual fall banquet was held at the Fargo Holiday Inn. This was an opportunity for students in the dealership management specialization, faculty from the ASM and Agribusiness programs, the college Associate Dean, local John Deere dealers and territory managers, and John Deere Minneapolis Branch staff to get together for a good meal and fellowship. It also was an opportunity for students who had internships last summer to present what they did and what they learned. The students did a fantastic job and every internship experience was very positive for both the students and the dealerships. That is a credit to excellent dealership managers and excellent students.

## New Members Initiated into Alpha Epsilon

On April 8, 2003, six new members were initiated into the Theta Chapter of Alpha Epsilon at an initiation ceremony and dinner held at the Speedway Restaurant in West Fargo. The six new members are:

Christopher Arnston      Ryan Jacobson      Trent Roth  
Steven Estvold              Justin Muscha              Tanner Erickson

Membership in the honor fraternity is offered to those students meeting strict academic performance and character standards.

## Student Engineering Branch of ASAE - 1st Runner-up at AEM Awards Competition

The ND Student Engineering Branch of ASAE--the Society for Engineering in Agricultural, Food, and Biological Systems, took 1st runner-up honors in the annual Assoc. of Equipment Manufacturers (AEM) Student Engineering and Mechanization Awards for branches of fewer than 33 members. The AEM awards are presented to the student branches which compile the most outstanding record of activities and achievements in the previous year.

This year's winning report was prepared by ABEN sophomores John Simenson of Glenfield, ND and Andy Steinberger from Hillsboro, ND. Dallas Hager, a senior from Karlsruhe, ND served as president of the Student Engineering Branch of ASAE which is advised by Les Backer and Tom Bon.

## 2002-2003 Graduates (Aug. 2002 - May 2003)

### BS DEGREE: Agricultural Systems Management

Nathan Boll—Farming, Newburg, ND  
 Cassidy Brekhus—Farming, Webster, ND  
 Andrew Gegelman—Agrilliance, Warren, MN  
 Jeremy Johnson—Farming, Sharon, ND  
 Philip Lindseth  
 Andrew Marks—ADM, Winona, MN  
 Nicolaus Nowatzki—ADM, Enid, OK  
 Kurtis Riffey—Graduate School, NDSU  
 Eric Skolness—MinnWest Bank, Ortonville, MN  
 Jason Snell—  
 Andrew Week—John Deere Company, Waterloo, IA

### BS DEGREE: Agricultural and Biosystems Engineering

Wayde Altendorf—Terra Marc, West Fargo, ND  
 Mike Bemboom—  
 Jeffery Duchscher—Applied Engineering, Gwinner, ND  
 Joshua Dukart—  
 Joshua Ehli—College/Seminary, St. Louis MO  
 Erika Hodgson—John Deere, Ankeny, IA  
 Nicholas Johnson—  
 Wade Lindgren—Richards, Fargo, ND  
 Hector Mathys—Caterpillar Inc., Peoria, IL  
 Nathan Pesta—DeHaan, Grabs & Associates, Mandan, ND  
 Andrew Poeckes—NRCS  
 Daniel Reisenauer—Bobcat (Internship), Bismarck, ND  
 Ryan Waters—Kadramas-Lee Consulting, Bismarck, ND  
 Paul White—Busch Agricultural Resources, Moorhead, MN  
 Anna Zehrer—Caterpillar, Peoria, IL

### MS DEGREE: Agricultural and Biosystems Engineering

Jerry Shae—Buford-Trenton Irrigation District - ND

### PhD DEGREE: Agricultural and Biosystems Engineering

Md. Saidul Borhan—Visiting researcher at the Biosystems Engineering Dept., University of Manitoba, Winnipeg, Canada  
 Thomas Bon—Senior Lecturer, Agricultural and Biosystems Engineering Department, NDSU  
 Sudhanshu Sekhar Panda—Post Doctoral position, Bioenvironmental Engineering, Biological and Agricultural Engineering Dept., University of Arkansas, Fayetteville

## Alumni Profile: Andrew Week

### ASM Graduate Finds Exciting Job Experience



Andrew is originally from Evansville, MN. He received his B.S. in Agricultural Systems Management in December 2002. He is a Marketing Representative supporting the 8020 Series tractor line for John Deere in Waterloo, IA.

Andrew's first four weeks with John Deere were spent in Valley City, ND training personnel and customers on air seeding equipment and AMS products (AutoTrac, Parallel Tracking, etc.). His next four weeks were spent in Phoenix, AZ where he helped facilitate a training program for territory managers on John Deere equipment and other competitive tractors on the market today. While on this assignment, he had the opportunity to gather marketing research from not only John Deere customers but competitive customers from all over North America, Australia, Germany, Italy and France.

Back in Waterloo, IA, Andrew has focused more on the "behind the scenes" activities of marketing. He has developed sales tools (competitive advantage, product changes, sales manuals) for John Deere dealerships. He is presently working on a new series of tractors that they hope to have on the market within the next few years.

In the future, Andrew will receive training in electrical and hydraulic certifications programs. He will also attend factory system schools which address detailed "inside/out" product information.

Andrew says that the Agricultural Systems Management classes that he took at NDSU have come into play already at one time or another. His interaction with French exchange students in one ASM class provided the basis of great conversation starters when he spoke with French customers about their farming practices. "Growing up in Minnesota and going to school in North Dakota was great, but when looking at it from any company perspective, globalization is extremely important," says Andrew.

## Alumni Notes:

**Gail (Skalet) Giffey & Travis Giffey** (both BS ABEN, 1998) welcomed a baby boy, Grady Kyle, on November 22 of last year. In December, Travis completed his MS in Mechanical Engineering and Gail finished her MBA. Both work at Fleetguard in Tennessee; Travis as a Test Engineer Manager, and Gail as a Media Engineer.

**Dustin Hase** (BS ABEN, 2001) is employed by Micada as a structural engineer in Hope, ND.

**Aaron Kleingartner** (BS ASM, 2001) is a Product Intelligence Training Specialist with Bobcat Company in West Fargo, ND.

**Brian Markegard** (BS ABEN, 2000) is employed by the NDSU Extension Service as a livestock waste management specialist in Dickinson, ND.

**Emil Rodakowski** (BS AE, 1970) Poplar Grove, IL, formerly Belfield, ND, died from injuries sustained in a car accident in Illinois. He was a home builder west of Chicago, IL.

**Robert Schaar** (BS AE 1966) Chillicothe, Ill, formerly Scranton, ND, passed away in January, 2003. He worked at Caterpillar Inc. in Mossville, Ill, for 35 years, retiring as the senior engineer account manager.

**Stuart Swartz** (BS ASM, 2002) is the service manager for Jamestown Implement in Jamestown, ND. Stuart was previously with Pella Windows in Pella, IA.

**Jason Walter** (MS ABEN, 1999) has moved from John Deere in Waterloo, IA to John Deere in Moline, IL.

## Thanks to Our Donors!

*Donors make important contributions to the scholarship program and other activities that enhance the student experience. Listed below is a summary of major gifts earmarked for our department and donations to the department since July 2002.*

<p><b>A</b>            Keith (1972) and Lori Aakre            Paul (AM 1983) and Janet Aakre            Robert (AE 1984) &amp; Carla Adamek (1984)            Thomas (AE 1970) and Kristen Anderson</p> <p><b>B</b>            Leslie (1969) and Cathy Backer            Roger (1975) and Marilyn Baker            Mark (AE 1991) &amp; Stephanie Bares (1991)            Bradley (AE 1987) &amp; Brenda Baumann            Michael Beaver (AE 1976)            Clarence (AE 1943) and Irene Becker            Gerald Berg (AE 1973)            William (AE 1959) and Rosie Bickert            Lewis (AM 1958) and Florence Blattner            Thomas Bon (1977)            Daniel (1988) and Donita Burchill</p> <p><b>C</b>            Kevin Casement (1991)            Mary Connor (1980)</p> <p><b>D</b>            Glen (AM 1955) and Verla DeKrey            Daelyn Dirksen (AE 1989)            Allan Dragseth (1958)            Eric Dybsetter (ABEN 1998)</p> <p><b>E</b>            Todd (AM 1989) and Margaret Eisenbeisz            Kevin (AM 1976) and Nancy Erickson            Wesley (AM 1968) and Mary Ewine</p> <p><b>F</b>            Richard (AM 1959) and Karen Faught            Michael Fick (AE 1992)</p>	<p>Harry (1977) and Diane Fisher            Dennis (1976) and Joyce Fjeld (1993)            Mark Foster (AM 1987)            Ernest (deceased) (ABEN 1951) and            Mary Ann French (1957)            Herb (AE 1957) and Carolyn French            Alex (AE 1990) and Myrna Friedt (1992)            Robert (AE 1969) and Diane Fritel            Steve (AM 1972) and Linda Frosline            Travis Funseth (ABEN 1997)</p> <p><b>G</b>            Gary (AE 1960) and Florence Gilbertson            Thomas Gilbertson (AE 1994)            Trampas Goodmanson (ABEN 1997)            Fred (AE 1949) and Violet Grant</p> <p><b>H</b>            Chris (ABEN 2001) &amp; Nicole Harmsen            Martin (AE 1968) &amp; Beverly Hellickson            Reginald (1981) &amp; Eileen Herman (1981)            Gregory (1974) and Pamela Holte            Konrad Hought            Jeremy House (ABEN 1999)</p> <p><b>J</b>            Trevor (1990) and Elizabeth Jacobsen            Donald (1960) and Sharon Johnson            Gene and Darlene Johnson            Glen (AE 1958) and Irene Johnson            Orrin and Irene Johnson            Ralph Johnson (AE 1982)            Stephan (AE 1961) and Rita Johnson            Steven (AE 1979) and Amy Jorissen</p>	<p><b>K</b>            Stephen Kalchik            Richard (AE 1967) and Ann Karsky            Kenton (Engr 1988) &amp; Nancy Kaufman            Gary (AE 1971) and Connie Klein            Paul and Debbie Klevgaard            Glenn (AE 1963) and Kelley Kranzler            Marvin Kubousek (AE 1966)            Erwin and Jean Kurtz</p> <p><b>L</b>            Galen (AM 1974) and Lynell Larson            H. 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*We are grateful for contributions of any size to our programs!  
 If you wish to designate your contribution for a particular use, please  
 feel free to do so. Fill out the form on the last page of this newsletter.*

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 Seb Vogel  
 Richard L. Witz

**Adjunct Faculty:**  
 Robert Evans

# Mark your calendar!

**Academic**

**June 12-13**  
 Scholars' Orientation  
 (overnight session)

**June 23**  
 Transfer and Non-Traditional  
 Orientation (1-day session)

**June 24-25, 25-26, 26-27**  
**July 8, 9, 10**  
 Orientation & Registration for  
 New Freshman Students

**August 25**  
 On-site Student Registration

**August 26**  
 Fall Semester Classes Begin

**September 26**  
 Engineering & Tech Expo  
 Bison Sports Arena

**October 31**  
 Agriculture Career Fair  
 Memorial Union

**November 5**  
 Tri-College Career Fair  
 Fargo Civic Auditorium

**Other**

**July 27-30**  
 ASAE Annual Meeting  
 Riviera Hotel/Convention Center  
 Las Vegas, Nevada

**September 9-11**  
 Big Iron Farm Show &  
 Exposition, West Fargo

**October 3-4**  
 North Central CSAE/ASAE  
 Intersectional Conference  
 Quality Inn & Suites  
 Fargo, North Dakota

## ABOUT YOU

Please complete and return so we can keep updated on alumni happenings.

**PERSONAL**

**PROFESSIONAL**

Name:	Business Title/Profession:
Year Graduated:	Name:
Program: Degree:	Company/Institution:
Home Address:	Address:
City/State/Country/Zip:	City/State/Country/Zip:
Phone: Fax:	Phone: Fax:
E-mail:	E-mail:

**EMPLOYMENT**

We are always looking for new opportunities for our ABEN and ASM graduates. If you know of opportunities, please identify them.

My business/organization may have openings

Contact name:

Contact address:

Contact phone: ( )

My business/organization may have an opening for an internship or summer employment in the following area(s):

\_\_\_\_\_

Contact name:

Contact address:

Contact phone: ( )

**News About You**

- Interesting events (professional and personal) in your life that you would like to share with alumni and department personnel.


*Due to budget constraints, it is not possible for us to make a special mailing to ask you to update your address and provide information about changes in jobs or responsibilities and significant events in your personal or professional life. But, be assured, we still like to receive this type of information and share it with our alums. Just drop us a card or letter, or better yet, stop in for a visit if you are in the area. We'd love to hear from you and enjoy the opportunity to visit. If you have an e-mail address, please share that with us. It is an easy and inexpensive way for us to communicate.*

E-mail: [Leslie.Backer@ndsu.nodak.edu](mailto:Leslie.Backer@ndsu.nodak.edu)  
 Visit our website at:  
<http://www.ageng.ndsu.nodak.edu>

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I want to be involved in student recruitment in my local area. Please put me on your list of contacts.  
 Name: \_\_\_\_\_

I am willing to be placed on the department web page to be contacted by e-mail by potential students. My e-mail address is: \_\_\_\_\_

We are always looking for good new students. If you know of high school students who might have an interest in opportunities available for graduates of our programs, please let us know.

Name

Address

City/State

Zipcode

Name

Address

City/State

Zipcode

### ALUMNI CONTRIBUTIONS

Enclosed is my tax deductible check payable to:  
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**North Dakota State University**  
 in the amount of:

- |                                 |  |
|---------------------------------|--|
| <input type="checkbox"/> \$25   | <input type="checkbox"/> \$50          |
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| <input type="checkbox"/> \$1000 | <input type="checkbox"/> Other \$_____ |

Or, if you wish to designate your contribution to a particular use, please feel free to do so here:

I/We would like to help NDSU students majoring in Agricultural and Biosystems Engineering and Agricultural Systems Management with financial support with a **contribution of \$\_\_\_\_\_** to go towards the scholarship fund indicated below. *Please be sure to check to see if your employer has a program to match your contribution.*

- \_\_\_\_ Ernie French Memorial Scholarship  
 \_\_\_\_ Holman-Breuer Memorial Scholarship  
 \_\_\_\_ Un-designated

Return to:  
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