

Faculty & Staff

Interim Chair

Casey, Francis X. M.

Incoming Chair

Bajwa, Sreekala

Faculty

Bon, Thomas A.
Bora, Ganesh C.
Cannayen, Igathinathane
Hellevang, Kenneth J.
Jia, Xinhua
Lin, Zhulu
Pryor, Scott W.
Rahman, Shafiqur
Scherer, Thomas F.
Solseng, Elton G.
Steele, Dean D.
Wiesenborn, Dennis P.

Academic Staff

Johnson, Roxanne
Nowatzki, John
Pedersen, Carl

Staff

Borhan, Md. Saidul
Buckhouse, Lori
Daeuber, Jana
Flaagen, Myron
Haagensohn, Darrin
Lin, Dongqing
Moos, James
Nahar, Nurun
Perleberg, James
Stroh, Nancy
Tuscherer, Sheldon
Ziegler, Melanie

Professor Emeritus

Backer, Leslie F.
Disrud, Lowell A.
Hirning, Harvey J.
Hofman, Vern L.
Kucera, Henry L.
Lindley, James
Lundstrom, Darnell
Pratt, George L.
Stegman, Earl C.

Adjunct Professor

Evans, Robert G.



Dr. Frank Casey

Dr. Frank Casey, Interim Chair

When Les Backer retired on June 30, 2010, Dr. James Venette served as Interim Chair of ABEN until March 31, 2011. Since then, I have had the pleasure to serve in this department. I didn't realize that my first day as Interim Chair and brand new to administration was April Fools Day. This start date, however, was appropriate, because I really didn't know what I was getting into as a new administrator. As I reflect back on my personal growth and the challenges we overcame in the department, I am very grateful.

My experiences with this department have been very positive, especially in my interactions with its students. I have sensed that ABEN students are really enthused about this department and their experiences here. Our faculty have done a tremendous job of mentoring and training these students, and it has been a pleasure serving them all. This March, I turn ABEN's leadership over to its new permanent Chair, Dr. Sreekala Bajwa. Dr. Bajwa has tremendous experience and I am very confident she will carry on the tradition of excellence at ABEN.

When I leave as Interim Chair, I will return to the School of Natural Resource Sciences and serve as Interim Director of the School and Professor of Soil Science.



Dr. Sreekala Bajwa

Introducing Dr. Sreekala Bajwa, Department Chair

BS-Kerala Agricultural University at Tavanur India in Agricultural Engineering
MS-from the Indian Institute of Technology at Kharagpur, India in Agricultural Engr.
PhD-from the University of Illinois at Urbana-Champaign in Agricultural Engineering

Dr. Bajwa's career began at the University of Illinois in the Department of Agricultural Engineering as a Post-doctoral Research Associate. She joined the Department of Biological and Agricultural Engineering at the University of Arkansas in 2001 as an Assistant Professor. She also served as an adjunct faculty member for the Department of Electrical Engineering from 2003-2006. On February 29, 2012, we welcomed Dr. Sreekala Bajwa as our Department Chair.

Dr. Bajwa brings experience in Agricultural Engineering, Biological Engineering, and Agricultural Systems Management. She works very closely with students, advising undergraduate and graduate students, being active in student clubs, teaching, and various thesis committees. Her prior teaching was in Mechanical Design in Biological Engineering, Digital Remote Sensing and GIS, Design and Analysis of Experiments for Engineering Research and Precision Agriculture. She is actively involved in research with her focus being in remote sensing, agricultural air quality, water quality, precision agriculture, and bio-fiber composites. She is involved in extension, sat on many department and university committees as well as professional society committees.

Dr. Bajwa has received many awards and honors. A few of her more recent are a letter of appreciation from the Vice Chancellor of Student Affairs for having the most impact on one or more undergraduate student, ASABE Outstanding Agricultural Engineer, Outstanding Reviewer of the IET Division Award from ASABE and AMA-SHIN NORINSHA-AAAE young researcher award, ASABE. She has been well published throughout her career. She has over 30 peer-reviewed publications and over 70 conference presentations.

Together Dr. Bajwa and her husband Dilpreet have one son, Tejas and one daughter, Ritu. Dr. Dilpreet Bajwa was hired as an associate professor in Mechanical Engineering. His Ph.D. was earned from the University of Illinois at Urbana-Champaign in June, 2001. He will be working with other faculty in the area of bio-based composite materials.

Please join us in extending a warm welcome to Dr. Bajwa and her family to our department, NDSU, and Fargo!



New Staff



Melanie Ziegler

Although Melanie isn't new to NDSU, she is new to our department. Melanie joins us from the Center for Nanoscale Science and Engineering where she was a Technical Information Assistant. Prior to that, Melanie worked with the NDSU Extension Service as an Administrative Assistant to the Director of Ag and Natural Resources. She has been with NDSU since 1998. Melanie serves as Administrative Assistant to the department Chair and faculty. She works closely with Extension on their web and educational services as well as product distribution. She is also the main contact for all department faculty and staff recruitment.

Melanie lives on a farm in Georgetown, MN with her husband John. They have two grown sons, Brian (24) and Adam (27). Brian is a student in the nursing program at NDSU and Adam is a police officer in Cavalier, ND. Melanie enjoys sewing, reading, and flower and vegetable gardening. She is known by family and friends for her famous salsa. She has a soft spot for animals, especially her cats Jackie, Charlie, and Rusty. Melanie is a pleasant addition to have in the department.



James Perleberg

In September 2011, James joined the department as a Research Specialist for Dennis Wiesenborn.

James works in the Pilot Plant performing chemical and physical analyses on oilseeds, vegetable oil, meal, biodiesel and other renewable products. He also works with test bench and pilot-scale processes. James brings extensive research capabilities, along with strong biology and chemistry knowledge, & past work experience from Cetero Research. His core background is working in science. These abilities have aided him in becoming a valuable asset to the department.

James lives in Fargo, ND with his girlfriend Cassie and her daughter Kiley (12). He has formed a partnership with his cousin and will be doing a small amount of farming near Jamestown, ND growing soybeans and corn.

James' hobbies include listening to and playing music, electronics (especially apple computers and devices), and movies. With his love for music, James is a guitarist and backup vocalist for a local rock band named "Our Last Secret". James, Cassie and Kiley enjoy spending almost every weekend at Ottertail Lake with friends and family.

Honors



Igathinathane Cannayen

Assistant Professor, Dr. Igathinathane Cannayen, was named the 2010 Outstanding Reviewer for Food and Process Engineer Division for the American Society of Agricultural and Biological Engineers (ASABE). Each year only 10-11 reviewers are recognized by the Society. Given that over 900 reviewers participate each year in peer-review processes, receiving this is a significant honor.

The associate editors who select the reviewers for each article rate the reviews on quality, thoroughness and timeliness. Based on this criterion, they assist the division in identifying reviewers who have clearly made outstanding contributions during the past year.

In addition, Dr. Cannayen also was the recipient of the 2010 Outstanding Reviewer for the Elsevier Journal for BioResource Technology.

Awards

AGSCO Award Excellence In Extension
Ken Hellevang - winner

Award nominees:

H. Roland and Janet Lund Award Excellence in Teaching - Tom Bon
Earl and Dorothy Foster Award Excellence in Teaching - Ganesh Bora
Eugene R. Dahl Award - Excellence in Research Senior Career - Frank Casey
Charles and Linda Moses Staff Award - Darrin Haagenon
Larson/Yaggie Excellence in Research Junior Career Award - Scott Pryor
William J. and Angelyn A. Austin Excellence in Advising Award - Dean Steele
Rick and Jody Burgum Staff Award - Nancy Stroh

Years of Service:

James Moos - 35 years



**If you would like to receive the department newsletter by email,
please send your contact information to aben@ndsu.edu.**



Ramin W. Rahman

Assistant Professor, Shafiqur Rahman, and his wife, Research Specialist, Nuran Nahar welcomed sweet little Ramin W. Rahman on June 14, 2011. Ramin weighed 7 lbs. 1 oz. and was born at 2:20 p.m. He joins his older brother Raef.



Ramin and Raef



Nurun, Shafi and Ramin



Srinika Bora



Assistant Professor Ganesh Bora and his wife Mallika were blessed with a baby girl on December 20, 2011. Srinika weighed 8 lbs. 3 oz. and was born at 12:50 a.m.



Bishnu Karki, Post-doctoral, and her husband welcomed their bundle of joy December 20th at 5:27 a.m. Jay weighed in at 8 lbs. 4 oz.



Jay KC

Dr. Rustam Baratov, Visiting Scientist



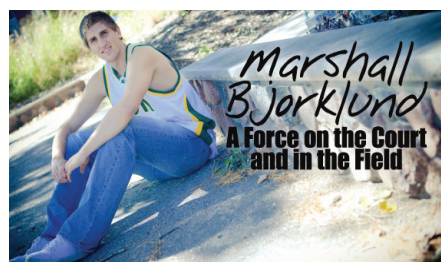
Dr. Rustam Baratov

Dr. Rustam Baratov is an Associate Professor of Electromechanical Theory and Automation Department at the Tashkent Institute of Irrigation and Melioration. Dr. Baratov is no stranger to the United States. He has had extended visits in New Mexico, Texas, and California. This is his first time in North Dakota. From 1982-1987 he attended school at the Tashkent Institute of Irrigation and

Agricultural Mechanization Engineers in Uzbekistan. He received his diploma in Electromechanical Engineering from the School of Electrification and Automation. In 1996 he presented his dissertation "Binarymetric Electromagnetic Resonant Transducer of Mechanical Values for Control System at the Tashkent State Technical University

Rustam is a Fulbright Scholar, visiting scientist, who joined our department for the 2011-2012 academic year. His project proposal includes studying large irrigation lift stations to determine their overall efficiency and to propose a more economical system that could accomplish this task at a reasonable cost in Uzbekistan. In addition, he will be looking at topics in American education to help the Uzbekistan higher education system transition from the Soviet style system to a Western style education system. He plans to sit in on several courses for possible ideas to share with his colleagues back in Uzbekistan.

Rustam and his wife Zukhra have two daughters, Vasila and Diyora and one son, Sardor.



Marshall Bjorklund was featured on the cover of the November 2011 issue of Bison Illustrated. Marshall is working towards a BS degree in Agricultural Systems Management. Marshall grew up on his family's farm near Gaylord, MN. A sophomore in the ASM program, Marshall also plays basketball for NDSU. What initially drew Marshall to NDSU wasn't the basketball program, but the reputation of its agricultural program.

Along with continued focus on basketball, Marshall also worked on a farm near Kindred, ND during the summer. This strengthened the idea that farming is exactly what he wants to be doing someday. "Farming may not be something that a lot of basketball players have interest in, but it's something that I grew up liking a lot. Well I love it. It's what I want to do for the rest of my life." Marshall loves sitting in his tractor working in the field. It also didn't hurt that the school's colors resemble those of his favorite tractor, John Deere.

Marshall knew that an agricultural degree would be essential as technology continues to rapidly increase. A farmer with any type of new equipment knows that the times of equipment being all manual are gone.

"I wanted to play basketball somewhere and I figured since NDSU has one of the top ag programs in the country it was the perfect fit."

2010-2011 Student Organization Officers

Student Engineering Branch of the American Society of Agricultural and Biological Engineers (ASABE)

President.....Chad Sietsema, Sacred Heart, MN
 Vice President.....Jason Pecka, E. Grand Forks, MN
 Secretary.....Richard Lewis, Moorhead, MN
 Treasurer.....Mitch Zachman, Belgrade, MN
 Head Scribe.....Nolan Swenson, Arnegard, ND
 CASAC.....Jason Pecka, E. Grand Forks, MN
 E&A Rep.....Chad Sietsema, Sacred Heart, MN
 Advisor.....Tom Bon



Chad Sietsema

Agricultural Systems Management (ASM) Club

President.....Josh Martinez, West Fargo, ND
 Vice President.....Brandon Hofer, Bath, SD
 Secretary.....Derek Aho, Antler, ND
 Treasurer.....Sam Livingston, Minot, ND
 Advisors.....Ganesh Bora and Elton Solseng



Josh Martinez

Alpha Epsilon

President.....Ewumbua Monono, Buea, Cameroon
 Vice President.....Eric Atandi, Keroka, Kenya
 Secretary.....Ishara Rijal, Kathmandu, Nepal
 Treasurer.....Mohammed Mizanur Rahman,
 Comilla, Bangladesh
 Advisor.....Scott Pryor



Ewumbua
Monono

Bison Pullers (1/4 Scale Tractor)

President.....Will Knox, Fisher, MN
 Vice President.....Chad Smith
 Secretary.....Chris Fedje, Rugby, ND
 Treasurer.....Derek Zerface, Hillsboro, ND
 Sponsorship.....Josh Martinez, West Fargo, ND
 CASAC.....Will Knox, Fisher, MN
 E & A.....Will Knox, Fisher, MN
 Advisor.....Tom Bon



Will Knox

1/4-Scale Tractor Student Design Competition



L to R: Michael Meschke, Tom Bon (Advisor), Jacob Hanson, Derek Zerface, Chris Fedje, Joshua Martinez, Nolan Swenson, Ben Reisenweber, and Will Knox

The 1/4-scale tractor "Bison Pullers" team participated in the 14th Annual ASABE International 1/4-Scale Tractor Student Design Competition, held June 2-5, 2011 in Peoria, Illinois. The ASABE Annual International 1/4-Scale Tractor Student Design competition provides university students with a "360-degree" design experience, in which they must build a tractor from the ground up, documenting their market research, testing and development, presenting their design to a mock corporate management team. They also must demonstrate the tractors performance in a live tractor pull.

The students raised funds, designed, and built the tractor. The teams and tractors are judged in several categories; design judging (11th place), tractor pull (11th place), team presentation (15th place), maneuverability (15th place), and written design (22nd place).

2011-2012 Scholarship Recipients

Walter Booth Scholarship
 * Michael Meschke, ABEN

A. R. Bon Memorial Scholarship
 * Vance Zacharias, ASM

E. L. Bon Memorial Scholarship
 * Jacob Weinreis, ASM

Caterpillar Foundation Scholarships
 * Jesse Jangula, ABEN
 * Chris Mortenson, ABEN
 * Chad Sietsema, ABEN

Ernie French Memorial Scholarship
 * Derek Aho, ASM

Holmen-Breuer Memorial Scholarship
 * Andrew Knox, ASM

Vernon C. Lee Memorial Scholarships
 * Brandon Flynn, ASM * Jacob Meyer, ASM

Walter and Pearl Nyquist Memorial Scholarship
 * Jesse Jangula, ABEN

Bill and Ann (Wick) Promersberger Scholarship
 * Shane Weller, ASM

Lawrence and Elizabeth Shaw Scholarship
 * Joshua Seibert, ABEN * Chad Sietsema, ABEN

Department Scholarships
 * Justin Johnson, ASM * Yuri Johnson, ASM
 * Jacob Keith, ASM * Thomas Pederson, ABEN

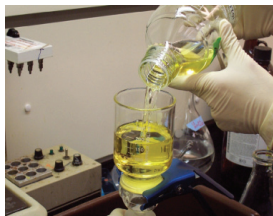
Frank Bain Agricultural Scholarships
 * Juan Vargas-Ramirez, ABEN graduate student
 * Mohammed Rahman, ABEN graduate student

Thanks to all the doners for helping our students!

If you would like to donate,
 please return the enclosed form.



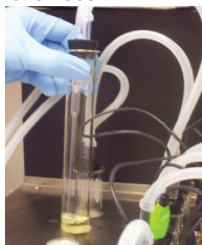
Canola Biodiesel Quality



Canola biodiesel has superior cold flow and storage stability properties when compared to other biodiesel feedstocks. Biodiesel quality is largely determined by feedstock fatty acid composition. Seed genetics and growing

environment (temperature and precipitation) may alter fatty acid profiles, but the evaluation of biodiesel quality among contrasting environments and varieties has not been investigated. A method of screening canola biodiesel quality parameters was developed by research specialist Darrin Haagenson. Canola biodiesel was processed from bulked canola varieties sampled among several years (2003-2009) and ND growing locations.

Biodiesel composition, cloud point (CP) temperature, and oxidative stability were measured. CP ranged from -0.1 to -2.4°C and was significantly impacted by year and location. Samples generally met the ASTM oxidative stability requirement, but significant differences in stability were detected among locations and years. The variation in fatty acid composition was small; thus, the significant variability in CP and OSI suggests either differences in minor constituents (antioxidants, waxes) or environmental seed stress. This study supports the value of examining biodiesel quality in a canola breeding program. Assisting Darrin on this study were Rachel Brudvik, Hongjian Lin, and Dennis Wiesenborn.



Evapotranspiration Mapping



Dr. Dean Steele

Spatially-distributed estimates of evapotranspiration (ET) can help engineers, hydrologists, and others understand and manage water resources more effectively. The objective of this project are to implement, adapt, and apply ET estimation procedures based on remotely-sensed images and ground-based weather data. We compare

such ET estimates with those derived from other models and measurements; and to apply ET maps to studies in water resource management, crop water use, and related topics. We adapted and applied the Mapping ET at High Resolution with Internalized Calibration (METRIC) algorithms for North Dakota conditions using the Spatial Modeler Language (SML) of Erdas Imagine image processing software. We compared ET estimates from the METRIC algorithms with ET estimates from the North Dakota Agricultural Weather Network's (NDAWN) Irrigation Scheduler (IS) for three years of field data obtained from seven field sites in the Devils Lake basin water utilization test project. The simulations were conducted for corn, wheat, sunflower, soybean, potato, and barley. The correlations between the ET estimates from the two methods were highest for shorter simulation periods. The METRIC approach agreed most closely during the middle of the growing season, while METRIC ET values tended to be higher early and late in the growing season.

Bioproducts Research

Students and staff working in the Dr. Pryor's laboratory continue to work on a variety of projects related to the production of biobased fuels and materials. Some current and recent projects include:

- Recovery and Use of Immobilized Cellulases for Biomass Hydrolysis
- Impacts of Biomass Densification on Biofuel Processing.
- Ethanol Production from Whole Sugarbeets.
- Ethanol Production using Mixed Perennial Grasses.
- NIR Spectroscopy for Rapid Biomass Compositional Analysis.



100g Ground Switchgrass



100g Pelleted Switchgrass



Dr. Scott Pryor

Dr. Pryor is working on a project with ABEN faculty at Ohio State and several other universities to develop an online database of bioenergy course materials to be used by faculty across the nation.

Bio-Imaging and Sensing Center

An International training program on "Image Processing Technology for Characterization of Agricultural Produce" was tailored in the Bio-Imaging & Sensing Center (BISC) for 12 weeks, starting Aug., 2011. The training was conducted by Interim Director Dr. Ganesh Bora. Dr. Mahesh Kumar, Associate Professor of Punjab Agriculture University in India, financially supported by Indian Council for Agricultural Research participated in the training. Experiment were conducted on Estimation of geometric parameters and the volume of selected beans using image processing technique at BISC. Field visits were organized to local

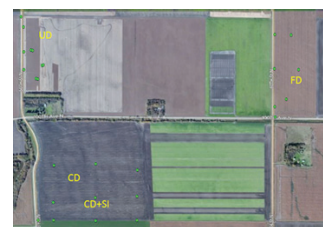


Dr. Dennis Wiesenborn, Dr. Mahesh Kumar, and Dr. Ganesh Bora

industries and grain elevators. At the end of the program Dr. Kumar presented his experience with NDSU for Engineering Agriculture in India. A certificate of completion was awarded by NDSU and presented by ABEN Professor, Dr. Dennis Wiesenborn.

Crop Production Water Management

Following a wet weather pattern since 1993, excess moisture in the farmland has become the most limiting factor for crop production. Subsurface drainage has become a necessary and effective way to remove water, lower the water table, and reduce soil salinity. Due to concerns on water quality, controlled drainage and subirrigation can be used to increase crop production and improve water quality via optimal water management. The dual controlled drainage and subirrigation system is new to the region, and the day to day water management can be very challenging because it combines the effect from crop, soil, climate, and management goals. This project develops a water management protocol to guide the landowners to apply best water management practices for sustainable and profitable crop production.



63rd Annual Agricultural Technology Exposition - "Bringing Agriculture to a New Tier" - February 12, 2011

Expo Staff:

Managers

- Brandon Dingmann, ASM
- Steven Gruber, ABEN

Assistant Managers

- Josh Martinez, ASM
- Chad Sietsema, ABEN

Secretary

- Jared Wiegandt, ASM

Treasurer

- Nathan Bumgardner, ASM

Booklet Manager

- Jayme Helmer, ASM

Public Relations Manager

- Ethan Dick, ABEN

Machinery Division Manager

- Jason Pecka, ABEN

Power Division Manager

- Mitch Zachman, ABEN

Precision Agriculture Division Manager

- Kyle Pietruszewski, ASM

Soil, Water, and Environment Manager

- Adam Borgerding, ABEN

Structure, Electric Power and Process Division

- Tyler Rath, ABEN

Seventy-two students were involved in the 63rd Annual Agricultural Technology Expo. These students displayed 37 projects in five divisions plus a senior design division. The Ag Technology Expo 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. Tom Bon and Elton Solseng serve as the advisors to the Expo staff. The event is hosted by the Student Engineering Branch of ASABE and the ASM Club.

Expo Results:

Machinery Division

- 1st.....Richard Lewis: VerVaet 9-Row Self-Propelled Beet Harvester
- 2nd....Chris Dufault: PhiBer Innovations Cutter Ban
- 3rd.....Michael Burkle, Tyler Schlect, Thomas Wilen: Bobcat S850 Skid Loader

Power Division

- 1st.....Cody Brantner, Lynn Carlson, Tyler Clark, David Staples: John Deere IVT
- 2nd....Bruce Erdmann, Andrew Giese, Donald Lacey: Tier IV: Information on SCR & EGR Engines
- 3rd.....Robert Wolsky: Advantages & Disadvantages of Tracks vs Wheels

Precision Agriculture Division

- 1st.....Justin Erickson, Jalen Getting: Precision Planting 20/20 Monitor
- 2nd....Greg Benz, Nathan Bumgardner, Alan Maier: GPS Worth the Cost
- 3rd.....Varinder Pal Singh: Digital Monitoring of Crops

Soil, Water, and Environment Division

- 1st.....Laura Chavez, Janelle Mauch, Nicole Wallace: Management Grazing
- 2nd....Douglas Lee: Soil Erosion
- 3rd.....Daniel Merritt: Constructed Wetlands

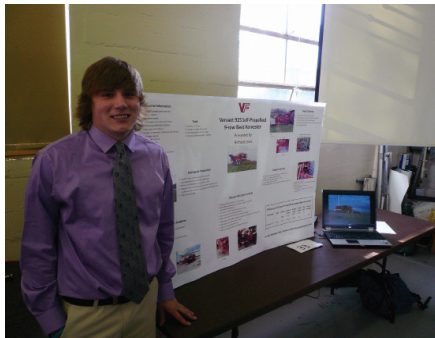
Structures, Electrical Power, & Processing Division

- 1st.....Chase Rosenau: Mobile Grain Cart Scales
- 2nd....Brady Wolden: Bloom Box: An Energy Breakthrough
- 3rd.....Calvin Deters: Superior Peak Ring Cover Remote Opener

Senior Design Award

- Cody Frauenberg, Tyler Rath, Paul Readel, Justin Stoe
- Electronic Seed Singulation

Grand Champion



Richard Lewis:
VerVaet 9-Row Self-Propelled Beet Harvester

Reserve Champion



Laura Chavez, Janelle Mauch, Nicole Wallace:
Management Grazing

Freshman Award



Chase Rosenau: Mobile Grain Cart Scales

Alpha Epsilon New Members



Seven new members were initiated into the Theta Chapter of Alpha Epsilon at initiation ceremonies on November 29, 2010. The ceremony was attended by outgoing president, Ewumbua Monono, and faculty adviser, Scott Pryor. The new members include Ethan Dick, Jesse Jangula, Janelle Mauch, Binod Rijal, Harjot Sidhu, Juan Vargas-Ramirez and Manlu Yu.

Alpha Epsilon is an honor society for outstanding biological and agricultural engineers. The objectives of the honor society are to promote the high ideals of the engineering profession, to give recognition to those biological and agricultural engineers who manifest worthy qualities of character, scholarship and professional attainment, and to encourage and support such improvements in the biological and agricultural engineering profession that make it an instrument of greater service to mankind.

Memberships in Alpha Epsilon consist of three classes: honorary, active, and alumni. Honorary members are selected on the basis of successful achievement in biological and agricultural engineering. Active members are chosen only from students registered in the upper portion of their engineering class, and who exhibit outstanding qualities of character, leadership, and personality. Graduate members may be chosen from outstanding graduate students in biological and agricultural engineering.

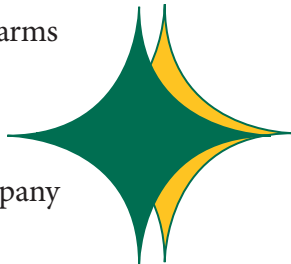


(left to right) -Harjot Sidhu, Binod Rijal, Juan Vargas-Ramirez, Janelle Mauch, and Ethan Dick (not pictured: Jesse Jangula and Manlu Yu)

2010-2011 Graduates

BS DEGREE: Agricultural and Biosystems Engineering

Bussman, Alec, Colfax Farmers Elevator
Deters, Calvin, Superior Inc.
Dierickx, Francis, Cargill
Frauenberg, Cody, Frauenberg Farms
Gingrey, Daniel
Gupta, Vipin
Meschke, Michael, Claas
Rath, Tyler, Polaris
Readel, Paul, John Deere & Company
Riesenweber, Ben
Schaley, Randy
Stoe, Justin
Weisbeck, Clayton



BS DEGREE: Agricultural Systems Management

Benz, Gregory, Self-employed
Braaten, Adam, Braaten Brothers Farm
Bumgardner, Nathan, Western Ag Service
Chevalier, John,
Dingmann, Brandon, John Deere and Company
Erdmann, Bruce, Schiele Enterprises
Giese, Andrew, Farming
Grundstad, Andrew, Farmers Union Oil
Helmer, Jayme, Pioneer Hi-Bred
Hoppe, Aaron, Graduate School
Maier, Alan, SD Wheat Growers
Mudra, Alfred, Farming
Pietruszewski, Kyle, Gavilon LLC
Roth, Spencer, ADM
Stroh, Scott,
Thoreson, Bradley
Trautmen, Lee, Quality Service
Ward, Michael, Stahl Architects and Builders
Weinreis, Travis,
Wiegandt, Jared, Wiegandt Farms
Williams, Austin, Jamestown Implement



*Congratulations
Graduates!*

M.S. Agricultural & Biosystems Engineering
Rahman, Mohammed Mizanur
Department of Irrigation and Water Management
Bangladesh Agricultural University
Mymensingh, Bangladesh
Thesis: Application of SWAT for Impact Analysis
of Subsurface Drainage on Streamflows
in a Snow Dominated Watershed

“What lies behind us
and what lies before us
are tiny matters
compared to what lies within us”
~Ralph Waldo Emerson

Agricultural Machinery

John Nowatzki developed an online interactive geospatial map of the world that allows individuals involved precision agriculture to share their practices, accomplishments, problems, research, recommendations, pictures and videos with others around the world. The site is searchable by category and location. The Precision Agriculture Map of the World is available on the internet at: http://www.ndsu.edu/precision_ag_map/.



John Nowatzki

Nowatzki collaborates with Roger Ashley, cropping systems specialist at the Dickinson Research Extension Center, on the NDSU Residue Management Project monitors soil moisture and temperature under various residue management conditions western, central and eastern North Dakota. The data on this site is updated every six hours, and is available on the Internet at: <http://www.ageng.ndsu.nodak.edu/farm-monitor/Residue Management Project.php>. 2011 was the first year of the three-year residue management project.

He also collaborated with individuals from the Minnesota Extension Service to conduct a soil compaction field day at Fergus Falls in September. Approximately 200 people attended sessions that demonstrated the effects of tire type, inflation, load and width on soil compaction.

Energy Education Training Program

The North Dakota State Building Code Advisory Committee met in June 2009 to begin work on updating energy efficiency related building codes. It was not until the summer of 2010 when the process to update energy related building codes in North Dakota was completed. The new series of building codes began implementation in January 1, 2011 that included provisions to reduce energy consumption. The inclusion of previously deleted energy codes in North Dakota will have profound effects of all parties involved in the residential construction industry.



A statewide training program was developed by Carl Pedersen, NDSU Extension energy educator in cooperation with the North Dakota Builders Association and ND Department of Commerce to provide information about the adopted energy codes and information on the best accepted practices to meet the codes in residential buildings that ensure an economical, safe and comfortable home for homeowners. In the spring of 2011 over 250 building inspections officials, professional builders, lenders, architects, designers, building supply personnel, insulation contractors, building trades students as well as others were trained in the new energy codes.



Greenhouse Gas Emissions from Feedlot Pen Surfaces in North Dakota

Ruminant livestock is the predominant source of enteric methane emissions to the atmosphere, whereas manure storage and management systems are the primary sources of methane (CH₄) and nitrous oxide (N₂O), which are greenhouse gases (GHGs), emissions. To meet the increasing global demand for livestock and poultry meat, livestock production will grow and this industry need better feed efficiencies for economic sustainability and minimizing environmental impact due to intensive production system.



portable wind tunnel

GHG emissions from confined animal feeding operation (CAFO) are a major concern due to its contribution to global warming. Globally, methane is contributing 22%, and nitrous oxide is contributing 6% of the total GHG. There are many available mitigation options to reduce GHG from livestock production system, but feeding management, animal genetics, and manure management are likely the best approaches. Feeding cattle and adding bedding in North Dakota feedlot poses environmental challenges due to cold climatic conditions. Cold ambient temperature increases maintenance energy needs and feed intake in most ruminants, which can influence the extent of pollutant gas emissions.



greenhouse gas chromatography

Little attention has been given to the environmental impact resulting from livestock production system in North Dakota, including greenhouse gas emissions. Therefore, in this study on-farm GHG emissions will be measured using a portable wind tunnel and greenhouse gas chromatography (GC) as shown below. Management practices will be followed for mitigating GHG emissions. This project has been funded by the North Dakota Corn Council.

Flood Disaster and Recovery Efforts

Flooding in 2011 once again put the Extension faculty at the forefront of the state's disaster preparation & recovery efforts. Extension Specialist Ken Hellevang and Energy Educator Carl Pedersen created flood cleanup videos, which are posted at www.ag.ndsu.edu/flood and used in several states in addition to North Dakota. After the flooding, Dr. Ken Hellevang held town hall sessions in Minot, Bismarck and Mohall for residents to ask questions about cleanup issues. In Minot alone, approximately 1,200 people attended two sessions. Hellevang also conducted workshops for Minot and Bismarck-Mandan area contractors on restoring flood-damaged structures. In addition he did presentations in Sioux City and Council Bluffs, IA. NDSU Extension's flood preparation and recovery expertise is attracting national attention. The Red Cross and Federal Emergency Management Agency distributes Extension material to flood victims, and Hellevang, serving as chair of the national Extension Disaster Education Network Flood team, works with other states to provide flood advice.



Dr. Ken Hellevang

Ann K. Promersberger passed away on Saturday, August 27, 2011 at the Sanford Palliative Care Hospital at the age of 96. The daughter of Eric and Signe Wick, Ann was born June 23, 1915 in Mizpah, and high school in Northrome, MN. Upon graduation in 1932, she worked for a year in a rural Minnesota school helping a teacher prepare meals for her students. A year later, she enrolled at Bemidji State Teachers College in Bemidji, MN where she received a two-year teaching degree in 1935.



Ann K. Promersberger

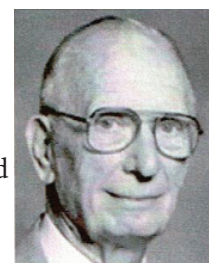
She then secured her first teaching job at the Indahl one-room county school near Littlefork, MN. Besides her teaching duties, it was also her responsibility to arrive at work an hour early so she could get the coal-burning furnace started to assure the school was warm when her students arrived. After a year, she moved on to teach 42 first and second graders at the Northrome Elementary School.

Ann was particularly interested in food her entire life. She was an excellent cook and loved preparing meals, sharing recipes, and entertaining. She also loved playing bridge, and continued doing so until as recently as two weeks before her death. Daily walks were also part of her every-day schedule. Most of all, she loved ballroom dancing. In fact, she met her husband at a dance and continued dancing all her life...as recently as at her grandson's wedding last summer

On June 9, 1838 she married William J. (Bill) Promersberger, who had just graduated from the University of MN, with a degree in agricultural engineering. They then moved to Fargo where Bill was hired by the North Dakota Agricultural College (now NDSU) to become a professor. At that point, Ann became a homemaker and supported Bill in his close-to-40 year career as chairman of the NDSU Agricultural Engineering Department (1941-1979).

Ann and Bill were married 69+ years at the time of Bill's death in 2008.

Norman B. Akesson, P.E. had a very fruitful and productive life. He graduated in 1940 from the North Dakota Agricultural College with a bachelor of science degree in agricultural engineering and earned an MS, also in agricultural engineering, in 1942 from the University of Idaho. He was appointed assistant professor of agricultural engineering at UC Davis in 1947 and progressively climbed the ladder to full professor, which he earned in 1962.



Norman B. Akesson

Norman was the author and co-author of a number of publications regarding aerial spraying, pesticide application, and agricultural chemicals.

He retired in 1982 but continued to actively do professional consulting work for another two decades. Norman passed away in February, 2011.



Richard J. Johnson

On Saturday, February 26, 2011 Richard J. Johnson passed away following a two-year battle with cancer. He was the beloved husband of Valerie N. Johnson and father of Mark, David, and Susan. He graduated from Grafton High School in 1953. He received a BS degree in Agricultural Engineering from NDSU in 1957.

After his ROTC commission in the United States Army, Richard completed a 30-year career at the U. S. Patent and Trademark Office in Washington, D. C. Richard retired in January, 1991 and started an independent patent research consultant service.

Robert S. Hoffman passed away on August 29, 2011 at the Oakes Community Hospital. Robert graduated from Oakes High School in 1970, and then attended NDSU, graduating in 1974 with a Mechanized Ag degree.



Robert S. Hoffman

Robert worked in the irrigation field most of his life. Robert, but known as "Bob" to most, was employed with Carrington Irrigation Research Station until 1980, when he moved back to Oakes and went to work for Heimbuch Irrigation. In 1986 he purchased the business, which is known as Hoffman Irrigation for the past twenty-five years. Bob was a Past President of the North Dakota Water Users Board, and was the co-top Reinke Salesman in 1991.

Theodore J. Brevik passed away on March 3, 2011 in Sun City. He completed his BS in architectural engineering at North Dakota State University in 1947. His undergraduate studies were interrupted when he joined the US Navy, attending the Midshipmen's School at Columbia College. He served as a navigator and torpedo officer on board a light cruiser during World War II. He completed his MS in agricultural engineering in 1950 from Michigan State University. Theodore worked on a USDA "Special Energy Project" at the USDA Southern Agricultural Energy Center in Tifton, GA. He developed numerous "Energy Notes" describing many alternative sources of energy. He was a 62-year member of ASABE.

When someone you love
becomes a memory, the
memory becomes a treasure.
~Unknown Author

Aakre, Adam (BS, ASM, 2010) married Shawna Robertson on August 27, 2011.

Aakre, Jacob (BS, ASM, 2010) and Cristina Aarestad were married on July 10, 2010. They bought their first house. Adam is working at Kibble Equipment and Cristina at Project Turnabout.

Artz, Kelly (BS, ABEN, 1997) was promoted to Region Manager at C & B Operations, Inc. (a subsidiary of John Deere) in Minnesota. He has been employed there since 2004.

Beaver, Michael (BS, AE, 1976) is employed with Cargill Worldwide Oilseeds Processing. The new Crush COE and Technology Director, he is responsible for development and transfer for 65 solvent extraction plants in the BOSC-WW organization. He leads five Centers of Expertise which focus on energy, automation, preparation, extraction, and Process Safety Management.

Bemboom, Michael (BS, ABEN, 2002) switched employment. He is now working for Hefty Seed Company headquartered in Baltic, SD.

Bengtson, Kelly (BS, AE, 1981) attended the NDSU football championship game in Frisco, TX. He is still working at Kittson Co. Highway Department; his wife Trina is at Social Services. Their youngest daughter will attend NDSU in the fall of 2012.

Berg, Cory (BS, AE, 1996) is a Major in the U. S. Army. He works in the Pentagon on Patriot Missile Defense Procurement.

Berg, Jack (BS, ABEN, 2000) accepted a position of Factory Customer and Product Support Manager at Mid Tractor for John Deere in August, 2011. Jack, his wife Jill, and son Justin live near Jesup, IA.

Borud, Matthew (BS, ASM, 2009) donated one of his kidneys to his father. Both Matt and his dad are doing well.

Britt, James (BS, AM, 1968) retired. He and his wife Bette run a furniture restoration workshop in Northeast Wyoming for the first two months of the year. Kiwanis, tractor restoration, and traveling keep them busy the remainder of the time.

Browning, Rebecca (BS, ABEN, 2000)



recently accepted a promotion with Phoenix Int'l in Fargo, ND. As the new member on the Ag & Turf division she works on Turf & Utility Platforms. Rebecca and her husband Michael had their third child in April, 2011. Emma joins her very active brothers Tucker and Jack.

Buckhouse, Norman (BS, AE, 1962) attended the wedding of his brother Charles to Lori Sholts, current ABEN Student Services Coordinator, on July 1, 2011. Norman and his wife Eileen continue to live in Dublin, GA.

Coffman, Daniel (BS, ASM, 2009) started his own soil sampling business. He is engaged to Alysha Thompson. They are planning a June, 2012 wedding.

Comfort, Dwight (BS, AE, 1987) received his 20 year plaque with the North Dakota State Water Commission/Office of the State Engineer.

Cook, Jesse (BS, ASM, 2005) received the Titanium Award for sales with Titan Machinery. He is pictured here with his wife Stephanie, and daughters Grace and Elizabeth.



Espinoza-Perez, Judith (PhD, ABEN, 2010) was married the 23rd of July to Abhishek Goel.

Frey, Travis (BS, ABEN, 2006) returned to Allied Engineering as Office/Project Manager. They are expecting their second child.



Froehling, Craig (BS, AE, 1988) moved to Minnesota. He continues to work with Cargill as their Process and Technology Leader for Horizon Milling; Cargill's flour milling business unit.

Gjellstad, Roger (BS, AM, 1972) was elected chairman of the board of directors for the North American

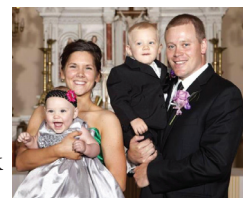
Equipment Dealers Association. Roger is the president and general manager of Stanley Equipment Inc., a Case IH dealership with seven locations under two corporations serving western North Dakota and Montana.

Handy, Scott (BS, AM, 1980) and his wife Mary welcomed granddaughter Sadie Beth. She was born to NDSU alumni Steve and Erin Wirtz, and joins big sister Lucy.

Hase, Dustin (BS, ABEN, 2001) received a promotion with Micada as Lead Engineer in Hope, ND. He is looking to apply for his PE this year.

Hawkins, Daniel (BS, ASM, 2005) and his wife Kimberly are expecting.

They have two children, Connor and Emma. He continues to work for John Deere since graduation. He is now Territory Customer Support Manager in Central Pennsylvania where he works with 20 dealers on parts, service and machine optimization.



Iverson, Gerald (BS, AM, 1970) has been inducted into the North Dakota Winter Show Ag Hall of Fame. Jerry has been instrumental in providing facilities and increased premium incentives for the 4-H and FFA exhibitors.

Joecks, Cassie (BS, ABEN, 2005) is engaged to David Ahmed and getting married in 2012. Cassie continues to work for the USDA-Natural Resources Conservation Service in Brooklyn Center, MN. Her fiancée is a math teacher for the Elk River Minnesota school district.

Khot, Lav (PhD, ABEN, 2009) received special recognition at the 2011 ASABE International meeting for outstanding reviewer - information and electrical technology division of ASABE journals.



Khot (Sankaran) Sindhuja (PhD, ABEN, 2009) and her husband Lav welcomed Madhav

Lav Khot who was born Superbowl Sunday.

Kirkeide, Tyler (BS, ASM, 2008) acquired his CDL license. In addition to his duties in agromony sales with Wilbur Ellis, he deliveries fertilizer.

Kizil, Unal (PhD, ENGR, 2003) received his tenure at the Canakkale Onsakiz mart University, College of Agriculture, Department of Agricultural Structures and Irrigation.

Kramer, Mitch (BS, ASM, 2007) and his wife Tracy welcomed their son Shane on June 28, 2011. Mitch is still working at Ero-Guard in Mapleton, MN.

Koehler, David (BS, AE, 1978) was promoted to Global Systems Engineer with John Deere Product Engineering Center.

Kolstoe, Eric (BS, ABEN, 1996) was promoted to the Director of Operations at WASP Inc.

Kubousek, Marvin (BS, AE, 1966) retired and moved to the northern hills of South Dakota. He restores and sells antique tractors.

Montgomery, Cody (BS, ASM, 2005) was married in October to Kimberly Super of Morris, IL.

Nice, Kade (BS, ABEN, 2003) was promoted to Manufacturing Engineering

Supervisor at John Deere Seeding Group in Valley City. He will be supervising the air seeding and tillage products. Recently he traveled to Europe and Asia supporting the set up of a manufacturing facility in Orenburg, Russia.

Paczkowski, John (BS, AE, 1991) was awarded the Water Wheel award with the North Dakota Water Users Association. He is a registered PE with more then 20 years of service with the North Dakota State Water Commission. He currently is Chief of the Commission's Regulatory Section.

Petersen, Ross (BS, ABEN, 2009) was promoted to Assistant Facility Manager with Horizon Milling in Mankato, MN.

Polansky, Peter (BS, ABEN, 2007) was married to Amy Scaddan of Lloydminster, AB, Canada. They had their first child, Addison Anne Hayley in March.

Puckering, Doug (BS, AM, 1960) has made two cedar strip canoes, one stitch and glue row boat and one lapstrake canoe. Last May he was part of a team in the local seven event Ski to Sea race.

Rockeman, Karl ((BS, ABEN, 2002) received a promotion to Program Manager for the North Dakota Pollutant Discharge Elimination System program

with the ND Department of Health.

Rodel, Chris (BS, ABEN, 2006) was promoted to Assistant Production Manager with Cargill in Paris, IL.

Rohrich, Allan (BS, ASM, 2004) was married to Becky Brendel in May, 2011.

Severance, Casey (BS, ABEN, 2005) was promoted to Senior Application Engineer for High Horsepower Engines with the Engine Business of Cummins in Columbus, IN.

Solminski, Cary (BS, ABEN, 2006) was recognized by ASABE as 2011 New Faces of ASABE. He and Hanna Phares were married in June.

Torgerson, Scott (BS, ABEN, 2006) has been promoted to Senior Program Manager at John Deere Electronic Solutions in Fargo

Vigesaa, Claire (BS, AE, 1982) was recognized at the Governor's Choice Award Banquet in Bismarck, ND. She was a nominee for Outstanding Volunteer Developer for ND.

Volesky, Bobby (BS, ASM, 2008) has joined Appareo Systems in Fargo as an Ag Product Manager.

Thanks to Our Donors!

Donors make important contributions to the scholarship program and other activities that enhance the student experience. Below are donors who have made gifts and memorials to the NDSU Development Foundation designated to the Department during its past year.

B
Bares, Mark
Berg, Douglas
Bjorlie, Kermit
Bon, Thomas
Brouillard, Ben
Buchholtz, Scott

C
Coffman, Daniel
Crummy, Michael

D
DeKrey, Glen
Diehl, Roger
Drees, Robert

E
Eidem, Gen
Ewine, Wesley

F
Faul, Monte
Fick, Michael
Filipi, Daniel
Flatau, Donald
Fritel, Robert

G
Gigax, Danny
Gjellstad, Robert
Goodell, Bryce

H
Hagen, Matthew
Handy, Scott
Haugeberg, Ross
Hellickson, Mylo
Honeyman, Russell

J
Jahner, Jeremy
Jensen, Marvin
Johnson, Anna
Johnson, Emmons
Johnson, Russell
Justus, Gary

K
Kamstra, Denise
Kaufman, Kenton

L
Larson, Keith
Lervick, Robert and
Suzanne
Lunde, Richard
Lundstrom, Darnell

M
Magnuson, Jason
Moran, Todd

N
Nead-Nylander,
Barbara
Ness, Albert

O
Olson, Beverly

P
Pietsch, Kevin
Polasky, Ralph
Pratt, George
Pryor, Scott

R
Rafta, Rixon

S
Schiffman, Robert
Scholin, Thomas
Seidel, Richard
Solberg, David
Spangelo, Gary
Sperle, Robert
Stave, Nelson
Stegman, Earl and
Dorothy
Strand, Robert
Synek, Roger

T
Thomas, Rosemary
Thorp, Jon
Tuhy, Lance

V
Vig, Kyle

W
Walter, Jared
Weinand, John
Wenberg, Richard
Wenstrom, Richard
Weston, Lori
Witz, Jane
Wright, Jerry

Industry:
Boeing Company 9
Doosan Infracore Int.
Raytheon Company

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 enclosed form.

DEPARTMENT OF AGRICULTURAL AND BIOSYSTEMS ENGINEERING

North Dakota State University
NDSU Dept. 7620
PO Box 6050
Fargo ND 58108-6050

Address Service Requested

NON-PROFIT ORGANIZATION
U.S. POSTAGE PAID
Fargo, ND
Permit No. 818

Phone: 701-231-7261
Fax: 701-231-1008
aben@ndsu.edu
www.ndsu.edu/aben
www.ag.ndsu.edu/extension-aben

Academic Programs:

Agricultural and Biosystems Engineering
College of Engineering and Architecture

Agricultural Systems Management
College of Agriculture, Food Systems, and Natural Resources



Alumni Center



Agricultural and Biosystems
Engineering

NDSU Gates

