

Alumni Update

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Degree and Date(s): BS () MS () PhD ()

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News to share: _____

**Please return to: Biological Systems Engineering Alumni Newsletter
460 Henry Mall, Madison, WI 53706
or e-mail information to:
BSE@facstaff.wisc.edu**



**BIOLOGICAL SYSTEMS
ENGINEERING UPDATE**
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UPDATE

*A Newsletter of the University of Wisconsin-Madison
Biological Systems Engineering Department*

Fall 2003

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The Chair's Chips



Although summer is usually considered a quiet time on campus; faculty, staff, and students are very busy conducting research and extension programs this summer. In addition numerous faculty and students attended international professional meetings and conferences and were recognized for their outstanding accomplishments through awards. A special award was presented to BSE by the US Marine Corps for technology resulting from soil erosion research conducted in the 1980's. More details are in this newsletter.

We had about thirty-five alumni and friends stop by the Wisconsin reception during the ASAE Meeting in Las Vegas, July 27-30. They were able visit and view senior design posters describing our design projects for 2002-03. We greatly enjoyed visiting with the alumni. Next year the meeting will be in Ottawa, Canada, August 1-4.

During the ASAE meeting, the proposed society name change, Society for Biological and Agricultural Engineering was discussed. Members of ASAE will see more information on this proposal in future ASAE publications and meetings.

State budget deficits have resulted in reduction of budgets to the university, which were shared at the department level. The full impact on the departmental budget was somewhat offset by tuition increases and expected staff retirements. In addition, the total state appropriated budget is only about 20 percent of the UW-Madison budget.

Next year, 2004, will be the centennial year for our department. Support for the new Agricultural Engineering Department was approved by the Wisconsin Legislature in August of 1904. They approved \$15,000 for that support and the Agricultural Engineering Building was built during that year. This was the first building completed on campus using concrete construction. This department appears to have the greatest longevity of any UW department with regard to being housed in the same building. Plans are being developed to celebrate our centennial next year. Look for more centennial information in future newsletters.

Last year we reported about the planning for an addition to our laboratory. This project will allow us to move all our campus facilities to one location on Elm Street, where our current laboratory is located. That project has been removed from the 2003-05 building project list. Dean Elton Aberle, CALS, indicated he has it as the number one priority for 2005-07 CALS new building list. Hopefully we will be more successful during that biennium.

As the new school year starts we look forward to arrival of the returning students and new students starting their college careers at the UW-Madison. Alumni, as you see high school students in your community with an interest in engineering, be sure to inform them of our programs. Details and brochures may be printed from our web site: www.bse.wisc.edu.

Sincerely,

Ronald T. Schuler
BSE Department Chair

THANK YOU

to our contributors
**April 22, 2003 -
 August 1, 2003**

Contributors to the departmental funds established in the UW-Foundation include:

- Stephen A. Albrecht
- Keith E. Behling
- Janet W. Bruhn
- David H. Dupre
- Kenneth V. Fiske
- Michael P. Frozema
- Elizabeth Haimson
- Leo I. Knispel
- Kelly Kruse
- Leslie L. Pagel Jr.
- Dale A. Quam
- Stephen A. Rohleder
- Sauer-Danfoss
- State Farm Companies Fdtn.
- Richard R. Stowell
- John A. Thiesenhusen
- Paul D. & Clara Davenport Thompson
- Gregory B. Weber
- Todd M. and Rene Brandenmuehl Wehler



A helicopter lands, creating a cloud of dust (See article below).



A helicopter lands on top of a hardened crust which was formed with the help of polymers (See article below).

MARINE CORPS RECOGNIZES BSE

The US Marine Corps presented BSE a Certificate of Appreciation for Aicardo Espinosa-Roa, a Visiting Assistant Professor in BSE, who provided his expertise on the use of polymers to reduce wind erosion. As a graduate student advised by Gary Bubenzer, Espinosa-Roa studied the use of polymers to reduce soil erosion due to wind while completing his graduate studies in the 1980's. Applying this technology to helicopter landing areas in the Middle East greatly reduced the dust created by the helicopter during landing and take-off and reduced the maintenance needs of the equipment.

The polymers are long chained molecules which wrap around the soil particles. As a result a hardened crust forms at the soil surface greatly reducing the susceptibility of the soil to erosion. These polymers have application to separation of soil particles from water. The soil particles settle from the water more rapidly because of the long chained molecules.



Aicardo Espinosa-Roa

Espinosa-Roa is a conservationist with the Dane County Land Conservation Department which includes Madison. He and Anita Thompson are pursuing support for additional research in the application of the polymers with equipment installed on the helicopters.★



Anita Thompson

DENES PROMOTED TO ASSOCIATE PROFESSOR

Dr. Ferencz (Frank) Denes, Food and Bioprocessing Area, was promoted from Assistant Professor to Associate Professor with tenure. Dr. Denes joined the BSE department in December, 2000 as part of a food safety cluster. Denes was one of four UW-Madison faculty that were hired to conduct research and teaching focussing on food safety. Dr. Denes, the only member of the cluster in BSE, applies a cold plasma process for surface modification to improve food safety during processing, handling and packaging. ★

PROFESSOR EMERITUS ORRIN I. BERGE PASSES AWAY

On August 11, 2003, Orrin I Berge, 89, passed away in Middleton after a brief illness. Orrin was on the department faculty from 1946 until his retirement in 1978 serving as an extension specialist in agricultural machinery. He was raised on a dairy farm near Valders, WI and received his BS and MS degrees at the University of Wisconsin-Madison. He taught high school agriculture for five years followed by five years of farming on the family farm. As the machinery extension specialist, Orrin was involved in numerous programs related to the adoption of new machinery which greatly reduced the labor requirements for crop production on Wisconsin farms. He authored numerous bulletins and articles on agricultural machinery. He also conducted farm safety programs and worked with 4-H. While on the faculty, Orrin was active on numerous campus wide committees. Orrin is survived by three sons and a daughter. One son, Lorin is a 1972 graduate of the department and Matthew, Loren's son, is also a 1998 graduate of the department. Loren and Matthew operate the family farm near Valders.

A memorial service is planned for October 4, 2003 at 1:00 pm at the Faith Lutheran Church on the south side of Valders on Highway 151. The Orrin I. Berge scholarship fund has been established at the UW-Foundation. Contributions can be made using the form below. ★

Biological Systems Engineering Campaign

I/we wish to join other students, alumni, industry and friends in enhancing the teaching, research and outreach programs in the Department of Biological Systems Engineering by contributing as indicated below to the Campaign.

_____ \$250 _____ \$500 _____ \$1,000 _____ \$5,000 _____ \$10,000 _____ Other

I/we wish to pledge \$_____ each year for _____ years beginning in _____ (year).
 Please remind me of the annual amount I have pledged in _____ (month).

I/we wish to make a single gift at this time. Enclosed is my/our contribution of \$_____.

Please charge my gift of \$_____ to my: Master Card Visa American Express
 Card Number _____ - _____ - _____ - _____ Expiration Date _____
 Cardholder's name (please print) _____
 Cardholder's Signature _____ Date _____

I/we wish to designate this gift: _____
 Where the need is greatest in the Department, for facility enhancements, for faculty/research support, for student support, other _____

Name: _____

Address: _____

Please make your gift payable to **UW-Foundation-BSE Campaign**.
 University of Wisconsin Foundation, 1848 University Avenue, P.O. Box 8860, Madison, WI 53708-8860



Alumni Update



Thank you for continuing to send your business cards and information updates. We appreciate hearing from you! If you haven't kept in touch, please send us your business card and/or complete the form at the end of this newsletter.

Glen Anderson, BS, '72, Agr. Engr., reports he is an independent consultant in Environmental Engineering and is president of Zac In., a management company operating a MSW waste to energy facility. In addition, Glen and his wife, Jeane own the Rod and Gun Sport Shop in Chetek, WI.

Barry S. Bauman, BS '75, Agr. Engr., received the National Food and Energy Council Electric Technology Award at the 2003 International ASAE Meeting in Las Vegas, NV. The purpose of the award is to recognize members of ASAE for their personal and professional innovation of programs that enhance the performance of the food, agricultural and environmental systems through technology related to electrical energy and to emphasize the unique role of engineering in this system. Bauman is a lead engineer at the Alliant Energy in Beloit where he is responsible for primary and secondary voltage distribution engineering. Bauman was recognized as the leading authority on agricultural electrical wiring codes and standards and has provided leadership toward the process of updating the National Electric Code to reflect the operational and safety needs of today's modern farm. At the same Bauman was also recognized role for making major contributions in the development of ASAE Standards.

Christopher Chapek, BS, '85, Constr. Admin., is a principle in the Alliance Custom Builders in Novato, CA.

Jared Cohen, BS, 1992, Construction Admin., is a business development manager for Penn Installation Inc., an interior construction contractor in Pittsburgh, PA. Jared and his wife, Debra, are expecting their baby in September.

Mark Deamicis, BS, '93, Construction Admin., is a project manager for Krupp Construction Co. in Madison. He recently married Tisha, September 28, 2002.

Michael S. Kahl, BS, 1985, Construction Admin., is a sales manager for the Potter Form and Tie Company. Mike is member of ASTM C09 and works in concrete repairs, chemicals, and reinforcement. Mike lives near Madison with his wife, Kari, and three daughters; Amy, Sarah, and Caroline.

Bob Loehr, BS '93, Mech. Engr. and MS '96, Agr. Engr. received ASAE's Resource Magazine 2003 AE50 Award for the X-Series Heavy Duty Lawn and Garden Tractors. Bob was involved in the total redesign of this tractor line. The awards were presented at the 2003 International ASAE Meeting in Las Vegas.

Steve Nelson, BS, '81, Agr. Engr., passed away unexpectedly on May 29, 2003. After graduation, Steve was employed in the department from 1981-1987 as a research project assistant and provided valuable computer support to the department at that time.

Robert Smithyman, BS, '47, Agr. Engr., reports he is a retired farmer from Rubricon.

Virgil Waugh, BS, '76, Constr. Admin., is vice-president for sales at AM Woods, Inc in Milton, WI.

Michael Walter, Ph.D. '74, Agr. Engr. received an ASAE Fellow Award at the 2003 International ASAE Meeting in Las Vegas, NV. The Fellow award is given to an engineer of unusual professional distinction with outstanding and extraordinary qualifications and experience in the field of agricultural engineering. Walter was recognized for his leadership in managing change for disciplinary-based biological engineering and for significant contributions to international agriculture, management program, engineering academic administration and teaching. He currently is professor and chair of the Biological and Environmental Engineering Department at Cornell University.

Jill Grodecki, BS, 2003 & Brian Huenink, BS, 2000 and MS, 2002: Normally, weddings are not included in this newsletter, but we had a special wedding take place this summer. On July 5, 2003, Jill Grodecki, BS, '03, Agr. Engr., and Brian Huenink BS, '00 and MS, '02, Agr. Engr., were married in LaCrosse, WI. Both were very active in student club activities and campus activities and received numerous scholarships while attending UW-Madison. They served a term as president of the UW ASAE student club, Jill in 2001-02 and Brian in 1998-99. ★

GUNASEKARAN RECEIVES INTERNATIONAL AWARD

Professor Sundarum Gunasekaran received the 2003 International Dairy Foods Association Research award on June 24, 2003 at the ADSA Annual meeting in Phoenix.



Sundarum Gunasekaran

Professor Gunasekaran developed the UW Meltmeter and the UW Profiler and their related data analysis software to evaluate the rheological properties of cheese. The meltmeter was the first significant new objective meltability measurement and test procedure developed in the past 25 years. It is based on the principles of squeeze flow rheometry, a valid rheological test ideally suited for materials such as cheese. The profiler is based on squeeze flow rheometry with some modifications and provides a finger print of the rheological changes occurring in cheese when it is heated, i.e. pizza baking.

Measurement of cheese melting properties with these approaches has enabled the cheese industry to modify their cheese manufacturing processes to produce cheese that meets the functionality targets of the food service pizza industry.

Gunasekaran has written 55 peer reviewed publications on dairy foods processing topics, coauthored a textbook titled "Cheese Rheology and Texture", and edited a textbook on nondestructive food evaluation. ★

BSE AWARDED AT INTERNATIONAL ASAE MEETING

Gary Bubenzer and James Converse received a ASAE President's Citations at the 2003 International ASAE Meeting in Las Vegas. ASAE members receiving the citation are recognized for their outstanding contribution to ASAE during the past year. Bubenzer received his award for serving as ASAE treasurer and chair of the finance committee. Converse received his award for serving as Director of the Meetings Council and as chair of the Meetings Committee.



Gary Bubenzer

James Converse and Brian Holmes received special recognition during the ASAE Awards Luncheon for their leadership in ASAE sponsored meetings. Brian received for his role in the National Dairy Housing Conference in Fort Worth, TX, last winter. Jim was recognized for his role in the On-Site Wastewater Treatment Workshop. ★



James Converse



Brian Holmes



The UW-Madison Quarter Scale Tractor placed seventh out of thirty teams participating in the ASAE sponsored competition in Moline, IL, May 29 through June 1. The UW-Madison team developed a very unique design where the sixteen horsepower engine powered a generator which provided current to four electric motors, one at each wheel of the four wheel drive tractor. This design permitted superior control to the wheels. If one wheel would begin to slip when the tractor was under a tractive load, more electrical power was directed to the other wheels. The team placed third in the written report, eighth in the performance test (pulling), and seventh in both the oral presentation and the static design evaluation. In a special event for fun, the teeter-totter, they placed first by balancing

tractor and operator in eighteen seconds. The team leaders were Pat Uhlenhake, from Salem, WI, who completed his degree and now is employed at John Deere Horicon Works and Brad Yanke, from Green Bay, WI, who will complete his degree requirements in December and has summer employment at AGCO.

The 'X' team, consisting of students who will be future tractor team leaders, competed with last year's tractor with some design improvements. Results are not available at this time. The team leaders were Graham Adsit, from East Troy, WI, and Si Akin, from Long Valley, NJ. They competed in presentation and the pulling events.

Jill (Grodecki) Huenink, a spring graduate from LaCrosse, WI, received the Steuben Award in April, 2003. This award is presented to outstanding students in the College of Engineering based on a written paper. Jill's paper was on anaerobic digesters.

(Article Continued on Page 5)

STUDENT OFFICERS ELECTED FOR 2003-2004

<u>President:</u>	Julie Graham
<u>Vice President:</u>	Si Akin
<u>Secretary:</u>	Naomi Uhlenhake
<u>Treasurer:</u>	Stephanie Eberley
<u>Publicity Co-Chairs:</u>	Josh Kappleman and Amy Kuhn
<u>AEM Report Chairs:</u>	Naomi Uhlenhake and Aaron Flouro
<u>Polygon Rep.:</u>	Nathan Ryan
<u>Webmaster:</u>	Eric Fox
<u>CALS Student Council Rep.:</u>	Bryan Yanke
<u>Lawnmower Clinic Chairs:</u>	Casey Behringer, Ben Binversie, Rich Burrack, Brad Yanke, Tony Vandermuss ★

Biological Systems Engineering UPDATE

460 Henry Mall, Madison, WI 53706

For more information, please call (608) 262-3310 or visit us on the web at <http://bse.wisc.edu>.

SENIOR DESIGN PROJECTS ANNOUNCED

Senior design projects are an important element of the undergraduate curriculum. All students are required to complete a project and present it as a poster during an open house in the department. Following is a list of the projects and the students completing the work.



Jill (Grodecki) Huenink and Tony Vandermuss displayed information about the Kickapoo River Valley Wetland Restoration project they worked on.

Kickapoo River Valley Wetland Restoration- Jill (Grodecki) Huenink from LaCrosse, WI, and Tony Vandermuss from Oshkosh, WI.

The Rehabilitation of a PL-566 Dam in Iowa County- Sean Coleman from Madison, WI, and John Hrebik from Mosinee, WI.

Design and Specification of a Small-Scale Milk Pasteurizer – Karen Mandl from Richfield, MN.

Forage Sample Processor – Eric Rego from Verona, WI.

Quarter Scale Tractor – Pat Uhlenhake from Salem, WI, and Brad Yanke from Green Bay, WI.

Conditioner Roll Gap Sensing and Adjustment System – Rich Burrack from Madison, WI and Russ Herschleb from DeForest, WI. ★

(Continued from Page 4)

Anthony (Tony) Vandermuss from Oshkosh, WI, participated in the ASAE Undergraduate Projects poster session at the 2003 International ASAE Meeting in Las Vegas, NV July 27-30. The title of his poster was Kickapoo River Valley Wetland Restoration. He partnered with Jill (Grodecki) Huenink, from LaCrosse, WI, in completing this project as part of their senior design. Special thanks goes to Scott Mueller, BS '87, Agr. Engr., of the USDA Natural Resources and Conservation Service (NRCS), for providing the project for Tony and Jill (See picture in above article).

The UW ASAE student Club placed first in the Association of Equipment Manufacturers (AEM) Group B competition. They received the award during the AEM Student Awards Luncheon at the 2003 International Meeting in Las Vegas. Tony Vandermuss, BS 2003, BSE, and Kelly Granberg, BS, 2003, BSE from Superior, WI, were responsible for preparing the report for the club. Congratulations to the club, Kelly, Tony, and the presidents during that period, Jill (Grodecki) Huenink, BS 2003, Agr. Engr. and Graham Adsit, BS expected in 2004, from East Troy, WI.

Jill (Grodecki) Huenink, BS '03, Agr. Engr. received a Student Honors Award at the 2003 International ASAE Meeting in Las Vegas. The award recognizes outstanding scholarship attainment and general participation in student activities. Jill was active in student activities and served as president of the UW-Madison student club in 2001-02. She also served as first vice-president of the National Council of Student Branches in 2002-03. ★



Graham Adsit, Tony Vandermuss and Kelly Granberg received first place in the Association of Equipment Manufacturers Group B competition.