Student Engineering Branch – Group A

January 1, 2012 – December 31, 2012

Association of Equipment Manufacturers Report

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A. ORGANIZATION

A.1. MEMBERSHIP

A.1.a. Rules of Membership

All University of Wisconsin-Madison students are eligible for ASABE membership. To become a chapter member, the interested person must talk to an officer of the club and pay dues. Dues may be paid to the treasurer at any regularly scheduled meeting. National ASABE membership requires an application. Applications are available in the Agricultural Engineering Building and on-line at the University of Wisconsin Biological Systems Engineering (BSE) department homepage. Branch dues are $10.00 per year and national membership for undergraduate students is $22.00 and for graduate students it is $35.00.

Below is an excerpt on joining and membership from the constitution and By-laws, written by a student committee in 2007:

1.1. Membership shall consist of any student enrolled at the University of Wisconsin Madison in an undergraduate or graduate program with an interest in Biological Systems Engineering. Membership will not be denied based on major, age, race, religion, sex, or disability.

1.2. Members of the branch shall be required to pay membership dues in accordance with the bylaws pertaining to the Constitution of the branch.

1.3. Member rights consist of voting privileges, holding of offices, participating in branch, national, and international events.

1.4. All members are subject to the terms and conditions of the Constitution and bylaws of the branch. Any member not abiding by the terms of the Constitution shall be subject to removal by the branch based on a 2/3 majority vote by the membership.

Reasons to Join:

1. Student interaction- Meet other students with similar interests or career aspirations. Members receive a chance to network and make life-long friends.
2. Insight on the engineering profession outside the classroom through tours and speakers.
3. Gain valuable leadership experience.
4. Faculty members and section leaders know you by your first name.
5. Networking through local, regional, national, and even international gatherings of the society.

A.1.b-d. Student Eligibility and Branch Membership 2012

Spring 2012 Semester

Freshmen	Sophomores	Juniors	Seniors	Graduate Students
	Bernard Lim	Jim Breckenridge	Tom Zwald*	Kari Jordan*
	Justin Wendorf	Brandon Nigon*	Josh Accola	Andy Holstein*
	Travis Schumacher	Shayne Havlovitz	Megan May*	Patrick Triscari
	Andy Meinerz	Christan Leedle	Ali Pelletier*	Craig Slattery*
	Aaron Bohnhoff*	Nolan Lacy*	Jake Zimmerman	Joe Keene
		Jake Standal*	Brittany Noe*	
		Scott Dietsche	Kevin Zwieg	
			Alex Selsmeyer*	
			Alex Earhart*	
			Bryan Rowntree*	
			Jide Onyeneho	
			Kristi Freitag	
			Kendra Allen	
			Jon Morehouse	

Fall 2012 Semester

Freshmen	Sophomores	Juniors	Seniors	Graduate Students
Charles Olmsted	Brian Straub	Aaron Bohnhoff*	Alex Earhart	Andy Holstein*
Cyrus Nigon	April Zhao	Alex Muench	Alyx Selsmeyer*	Justin Accola
	Brenna Stow	Alexandra Keller*	Ben David	Mario Mondaca
	Clay Selsmeyer	Andy Meinerz	Brandon Nigon*	
	Jenna Sanford	Charlotte Kelske	Bryan Rowntree*	
	Reid Christ	Eric Swanson	Chris Beedle	
		Frank Gerschke	Chris Sinduata	
		Jeff Wilkins	Christian Leedle	
		Justin Wendorf	Evan Price	
		Shane Mathis	Jacob Zimmerman	
		Shayne Havlovitz	Jake Standal*	
			Jim Breckenridge	
			Joe Sanford	
			John Gillis	
			Justin Orrick	
			Megan May*	
			Meredith Remter	
			Mike Rogney	
			Nolan Lacy*	
			Richard Bero	
			Ryan Fieldbinder	

			Sam Zauner	
			Scott Dietsche	
			Tom Miles	
			Tom Zimonick	

*Students that paid national dues

At UW-Madison, any student is eligible to become an ASABE branch member, regardless of his or her major. However, for the branch's records, statistical records are based on the number of students from the Biological Engineering Department (BSE) who join the branch.

	A.1.b. Number of Students Eligible By Classes [BSE department]					**A.1.c. Number of Eligible Students who are Branch Members**					**A.1.d. Number of Branch Members who are National ASABE Members**				
Semester	**Fr.**	**So.**	**Jr.**	**Sr.**	**Grd**	**Fr.**	**So.**	**Jr.**	**Sr**	**Grd.**	**Fr.**	**So.**	**Jr**	**Sr.**	**Grd.**
Spring 2012	10	14	43	64	37	0	5	7	14	6	0	1	1	5	2
Fall 2012	12	24	42	73	43	2	6	11	25	3	0	0	1	4	1

Total % in BSE:
Spring - 19%, Fall - 24%
Total % Campus wide:
Spring and Fall – 0.001%

Total % of branch members that are national ASABE members:
Spring - 33%, Fall - 16%

Total enrolment at the University of Wisconsin-Madison – 42,820. Number of undergraduates enrolled in 2012 – 29,167

A.2. Student Branch Officers

Student Branch Officers are elected in the November ASABE branch meeting. The late fall election was chosen to allow for a transition period between incoming and outgoing officers. The officers elected in November start their duties for the December meeting and continue through the spring. During the summer term the officers are generally less active, but begin their duties again in September, coinciding with the start of the academic year at the University of Wisconsin-Madison.

Upon the completion of their terms all officers are responsible for submitting an organized binder recording all of their year's activities. The binder should include hard copies of all reports and soft copies of all files to assist the new officers with fluidity.

President

Alex Earhart (December- Nolan Lacy)

Duties:

- Organize monthly meetings
- Oversee all committees
- Register with the student Organization Office
- Be the branch contact person for the National ASABE, College of Agriculture and Life Sciences (CALS), and the College of Engineering.
- Consult with the branch and faculty advisor.
- Work closely with Treasurer to complete an annual budget
- Work closely with Vice President to plan the year's monthly meetings within the first two months of Presidency

Vice-President

Byan Rowntree (December –Shayne Havlovitz)

Duties:

- Serves as the branch's chief officer in the absence of the President.
- Organize monthly meeting speakers at least four months in advance
- Reserve room for monthly meeting
- Work with President to plan the year's monthly meetings within the first two months of Vice Presidency
- Plan industry tours and trips

Secretary

Megan May (December –Meredith Remter)

Duties:

- Take minutes at monthly officer meetings
- Distribute minutes via email
- Record attendance
- Assist AEM chair and AEM report

Treasurer

Brandon Nigon (December – Jim Breckenridge)

Duties:

- Collect membership dues
- Keep detailed records on account
- Establish name at the branch bank
- File ASM funding in a timely fashion
- Work with the President to complete an annual budget in January of each year
- Maintain list of active, paid members

Polygon Engineering Student Council Representative

Shayne Halvolitz (December –Reid Christ)
Duties:

- Attend Polygon Student Council meetings
- Give *Polygon Report* at monthly meetings
- Send out Polygon minutes to the branch via e-mail
- File Polygon funding request in a timely fashion in the Spring and Fall semesters

College of Agriculture and Life Sciences Student Council Representative

Jim Breckenridge (December – Andy Meinerz)
Duties:

- Attend CALS Student Council meetings
- Give the *CALS Report* at monthly meetings
- Send out CALS minutes to the branch via e-mail

L.M.C. Chair (Lawn Mower, Snow Blower and Roto-Tiller Clinic)

Bryan Rowntree, Brandon Nigon, Jake Standal, Nolan Lacy (December –Evan Price, Trevor Meyer, Clay Selsmeyer)
Duties:

- Plan and organize the annual *Lawn Mower, Snow Blower, & Roto-Tiller Clinic* fundraiser
- Actively search for funding to support the LMC

Publicity Chair

Tom Zwald (December –Ricky Bero)
Duties:

- Send branch meeting announcements via email
- Keep ASABE bulletin board up-to-date
- Coordinate social events
- Write monthly newsletter in a timely fashion

Webmaster(s)

Alicia Pelletier (December –Aaron Bohnhoff)
Duties:

- Create and maintain website that displays all activities held by the branch
- Update the website to meet the requirements of the club by asking for suggestions for improvement at each meeting
- Include future events for recruitment purposes

¼ Scale Tractor Team Leader(s)

Team President: Jake Standal
A-Team Leader: Tom Zwald
X-Team Leader: Justin Orrick
Test Sled Leader: Bryan Rowntree
Business Chair: Carl Magnusson
Duties:
• Responsible for the design component of the ¼ Scale Tractor
• Raise funds and/or solicit supplies for the ¼ Scale Tractor
• Organize and oversee all ¼ Scale Tractor Team meetings
• Organize the construction of the ¼ Scale Tractor
• Responsible for all elements of the ¼ Scale Tractor relating to the International ASABE Competition
• Give *¼ Scale Tractor Team Report* at branch meetings

AEM Chair(s)

Bryan Rowntree (December – Brenna Stow)
Duties:
• Responsible for the final AEM report
• Take pictures of branch activities during the year

A.3. Standing Committees

A.3.a. Executive Committee

The Executive Committee meets the first Monday of every month (9 days ahead of the monthly club business meetings) to oversee actions of the club and determine agendas for the upcoming branch meeting. It is composed of all the current Student Branch Officers and is overseen by club advisors.

Chair:	Alex Earhart
Advisor:	Dr. Rebecca Larson
Members:	(See A.2. Student Branch Officers)

A.3.b. AEM Report Committee

The AEM Report Committee is responsible for assembling and submitting the UW - Madison Student Branch's AEM report for the National Trophies Competition. The AEM report is used to chronicle the progress our ASABE club. The AEM Report Committee is co-chaired by the elected AEM co-chairs and other officers, and overseen by a club advisor.

Co-Chairs:	Bryan Rowntree Brenna Stow
Advisors:	Dr. Rebecca Larson Debby Sumwalt

A.3.c. L.M.C. Committee

The Lawn Mower Clinic (LMC) is the annual fundraising activity for the UW - Madison student branch. This year the LMC took place Nov. 1st – 3rd, 2012 in the Agricultural Engineering Lab. Proceeds from the fundraiser are used to cover the operational costs of the group, to fund trips and tours, and to sponsor individuals attending ASABE international, national, & statewide functions.

Chairs: Bryan Rowntree, Nolan Lacy
Brandon Nigon

Advisors: Dr. Kevin Shinners, Dr. Dave Bohnhoff, Dr. Richard Straub
Dr. Rebecca Larson

Volunteers: Jake Standal, Evan Price, Tom Zwald, John Gillis, Trevor Meyer, Brian Straub, Frank Gerschke, Scott Dietsche, Justin Wendorf, Aaron Bohnhoff, Alex Earhart, Tom Zimonick, Pat Triscari, Megan May, Erik Swanson, Christian Leedle, Matt Krenicki, Shane Mathis, Josh Accola, Ryan Fieldbinder, April Zhao, Mario Mondaca, Bernard Lin, Alyx Selsmeyer, Cyrus Nigon, Brenna Stow, Tim O'Brien, Ben David, Justin Orrick

A.3.d. ASABE ¼ Scale Tractor Team Committee

The ASABE ¼ Scale Tractor Team meets on Thursday nights to construct the tractor. The team leader runs the meetings and manages the process of building the tractor, while the Design Co-Chairs are responsible for design work. Each year there is an A-team, which builds a new tractor from the ground up. In addition, an X-team modifies the previous year's tractor to pull again at the national competition in June. In 2012, a sled team was formed to make the practice pulling sled self propelled. All ASABE members are invited to attend the weekly meetings and help construct the tractor.

Advisors:	Dr. Kevin Shinners	Head Advisor
	Bradley Brooks	Advisor

2012 Members:
President: Tom Zwald (Fall – Jake Standal)

A-Team Leader: Tom Zwald
X-Team Leader: Justin Orrick
Test Sled Leader: Bryan Rowntree

Fundraising Chair: Carl Magnusson (Fall-Carl Magnusson)

Apparel Chair: Brian Straub (Alyx Selsmeyer)

Volunteers: Tom Zwald , Bryan Rowntree, Alex Earhart, Carl Magnusson, Justin Orrick, Brandon Nigon, Maria Schreiner, Jesse Dahir-kanehl, Evan Price, Brian Straub, Scott Dietsche, Jake Standal

A.4. Special Committees

A.4.a. CALs Day for Kids Committee

College of Agriculture and Life Science (CALS) Day for Kids brings in nearly 600 fourth graders from across the state, emerging them in a fun, exciting, learning environment. These students learn from college students at various stations designed to spark children's interests, by easily explaining agriculture advances. The CALS Day for Kids Committee, which had one ASABE member, who was responsible for organizing, staffing, and demonstrating educational displays held April 17, 2012 and included the ¼ scale tractor exhibit as well as "The Badger Crank-Away", a hand powered device used to illustrate principles or grain movement and power transmission.

Chair: Megan May

B. MEETING ACTIVITIES

B.1. Meetings

B.1.a. Academic Credit

No academic credit is received for attending chapter meetings.

B.1.b. Number of Meetings

General club business meetings are held on the second Wednesday of each month. There were eight regular branch meetings held from January 1, 2012 to December 31, 2012. (See the table below for exact meeting dates.)

B.1.b. Number of Meetings	**B.2.a**	-	**B.2.b**
	Attendance		
	Members	Visitors	Faculty
-	53	-	30
Total Meetings 8	273	7	51
-	34	1	6.4
	64%	-	21%
February 8, 2012	28 (53%)	1	4
March 12, 2012	30 (57%)	1	4
April 11, 2012	27 (51%)	1	3
May 9, 2012	35 (66%)	0	15
September 13, 2012	39 (74%)	1	14
October 10, 2012	37 (70%)	1	3
November 14, 2012	40 (75%)	1	4
December 12, 2012	37 (70%)	1	4

C. QUALITY OF MEETINGS

C.1.Character and Procedure of Meetings

Branch Meetings:

The UW-Madison ASABE branch holds monthly meetings in Rm. B25 of the Agricultural Engineering Building on the UW-Madison campus. The meetings take place on the second Wednesday of each month in the academic school year. The social starts at 5:00pm, during which time attendees enjoy food and beverages provided by the club. At 5:30, a featured guest professional practicing in one of the Biological System Engineering options (Power and Machinery Engineering, Food and Bioprocess Engineering, Natural Resources and Environmental Engineering, or Structural Systems Engineering) presents about their involvement in industry. These speakers are often alumni or individuals who share connections with department faculty. A business meeting follows the speaker with discussion of topics chosen by the executive committee at their meeting one week prior.

Fall Mixer Meeting:

The first meeting of the academic school year is held in September in conjunction with the BSE Fall Staff-Student Mixer, which is sponsored by the BSE Department. The mixer is held in the Agriculture Engineering Lab Building which is separate from the Agricultural Engineering Building. A cookout is provided during the "social hour" at 5:00 pm, followed by a welcome message from the department chair, along with introductions by all the students and faculty. Following the social hour, the ASABE regular meeting is held in Room 118 in the same building. The meeting is held in the same manner as described above with special emphasis in welcoming new faces and introducing them to ASABE.

End of the Year Cookout Meeting

During the last meeting of the academic year (May), ASABE members meet at the Agricultural Engineering Lab Building for another cookout, and to conduct the last branch meeting of the academic year. Outgoing seniors are also recognized at this event.

Special Meetings:

If a special meeting is to be held, the person who calls the meeting is responsible for letting everyone know, the time and location, and whom it concerns.

C.2. Meeting Dates and Programs

University of Wisconsin – Madison Branch Meetings Summary*

All acronyms are included in Appendix A, and events are explained in Section D

Total Meetings: 8	**Business Meeting Summary**	**Special Program or Speaker Summary**
	Summaries are highlights of the meeting	
Feb 8th, 2012	The branch discussed the upcoming Midwest Regional Rally, Agricultural Equipment Technology Conference, and potential tour ideas for the semester.	Gary Steingraber from BouMatic Industries talked about engineering advances in dairy equipment and milking machines. Gary worked as a product engineer for specialty milking equipment.
Mar 12th,2012	The branch discussed a recent tractor pull for the tractor team and upcoming events such as the state section meeting, MRR, CALS day 4 Kids, and tour updates.	Joel Krien from Leprino Foods talked about his company, cheese production, and the opportunities available as plant process, or project engineers.
Apr 11th, 2012	Events discussed include CALS Day 4 Kids volunteering, the international meeting dates, the upcoming April Tour day trip to the Capital Brewery and Arboretum.	Adam Paul from Integrated Process Engineers & Constructors talked about the equipment and industries their engineers deal with from food and pharmaceutical to chemical and biotech.
May 9th, 2012	Topics discussed included the upcoming international meeting, t-shirt design, and the tractor team competition.	Department Chair Richard Straub gave farewell remarks for the year and recognized graduating seniors in the department at the annual spring cookout at the lower lab.
Sep 13th, 2012	Upcoming t-shirt designs, volunteering at the Arboretum, a corn maze excursion, Breakfast at Babcock House, a tour of the Forest Products Lab, and Fountain Wars involvement were all topics of discussion at the September meeting.	Student/Staff Mixer and cookout was held at the Lower lab. Department Chair Richard Straub welcomed new and returning students back to campus.

Oct 10th,2012	Lawn-Mower Clinic sign ups were passed around, t-shirt designs were decided, changes to the constitution were made and Fountain Wars was discussed and officer nominations were made at the October meeting.	Several students with summer internships gave presentations about their experiences. Bryan Rowntree (Case IH Application Equipment), Alyx Selsmeyer (Nationwide Agribusiness), Evan Price (Mississippi River Distilling Co.), Megan May (Con Agra Foods).
Nov 14th, 2012	New business included the upcoming card night, Babcock Breakfast National Farm Machinery Show, the AETC, and old business included LMC and the Forest Products Tour. New officers were also elected.	Guy Selsmeyer talked about his company, Northern Biogas, and the methane digesters and manure management plans they develop for large dairy farms throughout the country.
Dec 12th, 2012	The branch discussed the National Farm Machinery Show, MRR and AETC coming up in the spring, the student organization fair, and possible tours for the Spring.	Julie Sinistore, a recent PhD. Graduate of the department talked about her position as a Life Cycle Analyst with Virent, a company very involved with biofuel research and development.

*Appendix B includes complete minutes from each meeting

D. Special Branch Activities

D.1. ¼ Scale Tractor Design Competition

One of the primary concerns in industry today is that engineering students of all disciplines are entering the workforce with too little practical knowledge and design experience. Student design competitions and projects are an invaluable way to prepare students to be more effective engineers when they enter the workforce. In cooperation with professionals in industry, ASABE organizes an international student design competition based upon the concept of designing, fabricating, and testing a ¼ scale pulling tractor. There are four main judging categories: a written design report, a team presentation, an individual design judging competition, and a performance competition. The performance competition is comprised of general inspection/safety check, maneuverability, sound, and brake evaluation, and a series of pulls at two different hitch heights with the weight transfer sled. Each tractor is provided an opportunity to pull a progressive resistance sled with its uniquely designed ¼ scale tractor.

Students at the University of Wisconsin-Madison are 100% responsible for the design and construction of the ¼ scale tractor. They do all of the fundraising and outside of being asked to provide some materials or equipment, the faculty is not directly involved with fabrication or testing of the tractor. The students gain practical experience in the design of a tractor in regard to performance, drive-train systems, analysis of tractive forces, strengths of materials, fabrication techniques, and weight transfer.

UW-Madison ¼ Scale tractor Team Results from 2012

A-Team:

Overall: 23rd

Written Design Report: 19th

Team Presentation: 19th

Design Judging: 23rd

Tractor Pull: 23rd

Maneuverability: 16th (tie)

X-Team: Overall: 4th

Badger Pulling Team Members pose by the 2012 X-Team tractor at the competition in Peoria, IL

D.1.b. Lawn Mower, Snow Blower and Roto-Tiller Clinic

The UW-Madison Pre-professional ASABE chapter holds an annual fundraiser, the Lawn Mower, Snow Blower and Roto Tiller Clinic (LMC). This is the primary source of funding for the chapter. Over the course of three days, club members volunteer their time to service lawnmowers, snow blowers and roto-tillers. The standard service provided to the machines includes blade sharpening, changing the oil, operational checking and repair, and a thorough cleaning and shining.

Prior to the LMC, advertisements are sent to faculty in both CALS and the College of Engineering, as well as posted around campus. These advertisements include information on time, location, and cost of services. Most of the machines serviced are owned by faculty and staff in the UW-Madison College of Agriculture and Life Sciences (CALS) as well as from members of the surrounding community.

This year, as with past years, the LMC was held at the Agricultural Engineering Machinery Lab on November 1 - 3, 2012. The total income was $1,716. Volunteered time summed to a total of 147 man hours from 30 members. The BSE faculty also help by providing hot food and snacks for our volunteers.

Proceeds from the fundraiser are used yearly to cover the operational costs of the group. These costs include funding trips and tours, to sponsor individuals attending Midwest Regional Rally, Wisconsin Section meetings, and ASABE Annual International Meeting. The LMC was once again a great success this year, and we look forward to continuing the tradition!

Thursday evening our shop is filled with lawn mowers, snow blowers, and roto-tillers all tagged and ready to be serviced.

Brandon Nigon and Megan May complete a quality control check to make sure all of the mowers have been filled to the correct level with oil.

D.1.c Polygon Engineering Student Council

The Polygon Engineering Student Council coordinates and supports the various engineering student organizations. The ASABE Polygon Representative acts as a liaison between Polygon and ASABE, and attends all of the Polygon Engineering Student Council Meetings where representatives from all engineering student organizations meet twice a month to discuss activities and policies for students. The representative will then report back at the monthly ASABE meetings on discussed topics or current issues.

Having a representative attend Polygon is important to ASABE for multiple reasons. Polygon grants in meeting and out of meeting funding for various engineering clubs. ASABE has traditionally funded trips and hotel fares or registration fees with this money. Additionally, Polygon works to keep member organizations informed about events hosted by other engineering student organizations.

D.1.d CALS Student Council

The primary responsibility of the ASABE University of Wisconsin College of Agriculture and Life Sciences (CALS) Student Council Representative is to attend all CALS Student Council Meetings. At the meetings, representatives from other Agricultural and Life Sciences organizations meet twice a month to discuss activities and policies within the college.

CALS Student Council is responsible for organizing several activities including the CALS Welcome Back Picnic, CALS Week, Ag Olympics, CALS Day for Kids, and leadership classes.

D.2. Career Educational Programs for Potential Students

D.2.a Prospective Students Fair

On October 29th, 2012 the University held a Prospective Students Fair at the student union where majors and departments could bring students and materials to promote their major and associated clubs. The BSE department set-up a booth, and had a successful day talking to students. Below, ASABE members, Tom Zimmonick, Jenna Sanford, and Jim Breckenridge interact with prospective students, answering their questions about the department and ASABE.

D.2.b CALS Day for Kids

The College of Agriculture and Life Sciences hosts an annual day known as CALS Day for Kids where 4th grade students are provided with hands-on learning activities, displays, and interactions related to agriculture and science. This year ASABE organized and presented a display on the different aspects of Biological Systems Engineering that the University provides, and the ¼ scale tractor and a student-built auger demonstration was also there for the youth to learn about. This event was held on April 10, 2012.

ASABE member, Brenna Stow, describes different liquid solutions and the meaning of pH to the fourth grade students at the ASABE table.

Students enjoy the opportunity to sit on and learn how to operate the ¼ scale tractor that the team built.

D.3 Inspection Trips and Tours

UW-Madison Branch members have the opportunity to learn about the Agricultural Engineering industry through tours offered by the organization. Over the past year, tours involving power and machinery systems, food and bio-processing, and natural resources were offered to students by ASABE.

D.3.a Spring Tour Day

On April 28th, the ASABE pre-professional club toured the UW-Madison Arboretum and Capital Brewery. During our tour of the Arboretum, students learned about a storm water management pond that collected storm water and allowed sediment to settle out before infiltrating into Lake Wingra. After visiting the Arboretum, the club took an in-depth tour of Capital Brewery that included how the beer is brewed and fun facts about ingredients, processes, etc. After the tour, members of age were able to taste many of the great Capital beers! The following page has a couple pictures from the tour.

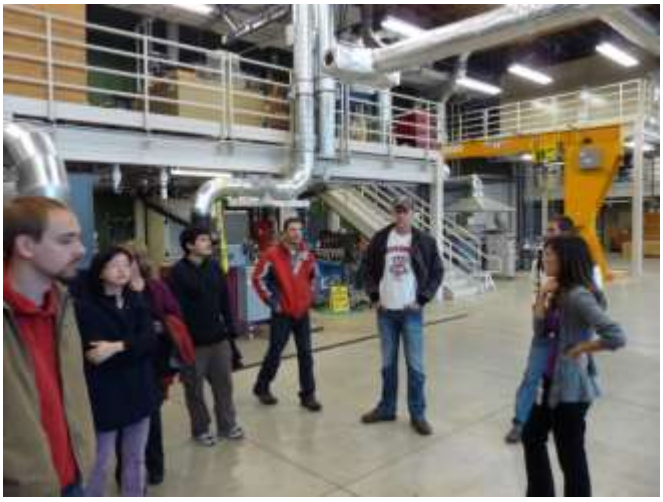
Students enjoy free taste testing after the Capital Brewery tour

Capital brew master, Jim, explains the fermentation process in the brew house.

D.3.b Fall Tour Day

On Thursday, October 11th , a group of fourteen ASABE and department faulty members walked to the USDA Forest Products Laboratory for a tour of their new building. The Forest Products Lab has been on the UW-Campus for over a century and continues play a critical role in forest products advancement in everything from stronger composites to new and more efficient manufacturing processes. Students had the opportunity to watch an informative video about the lab and its history before touring the lab facilities.

Students pose for a picture in the atrium of the Forest Products Building.



Students gather in the lab space to learn about material testing at the lab.

ASABE members walk through the largest testing area of the lab, capable of testing large beams. On that day, students had the opportunity to see the "2 x 4 cannon"; a device used to accelerate boards into stationary walls to investigate material toughness and simulate hurricane conditions.

D.4. Attendance at Section and International Meetings of ASABE

ASABE Wisconsin Section meetings, the ASABE Midwest Regional Rally and the ASABE International Meeting are attended by students from UW-Madison.

D.4.a Wisconsin Section Meetings

ASABE Wisconsin Section Meeting March 28, 2012

Student Attendance: 4

The Wisconsin ASABE Sectional Meeting was held in Oshkosh, WI in conjunction with the WPS farm show on March 28th, 2012. After the farm show, dinner and a business meeting were held at LaSure's Hall to discuss new section business, present section awards and announce the new officer team for 2012 and 2013. Two of our student members were awarded Engineering Student of the Year.

ASABE members Megan May and Joe Keene took home Biological Systems Engineering Student of the Year.

ASABE Wisconsin Section Meeting October 2, 2012

Student Attendance: 20

The Wisconsin ASABE Sectional Meeting was held in Madison, WI in conjunction with the World Dairy Expo on October 2, 2012. The dinner and business meeting were held at Maple Tree Supper Club and the National ASABE president, Tony Kajewski, spoke on the future direction of ASABE. The UW-Madison student turnout for the meeting was one of the highest in years.

D.4.b. ASABE Midwest Regional Rally – February 28- March 2, 2012

Student Attendance: 10

The 2012 Midwest Regional Rally was held February 28th-March 2nd in Ames, Iowa, hosted by Iowa State University. The Wisconsin student section had one of the largest state delegations. On Friday, students enjoyed a breakfast on campus with the other schools before departing for a day of technical and industry tours. Machinery systems students had the opportunity to tour Sauer Danfoss, a leading hydraulics and fluid power company in addition to Ag Leader Technologies, a precision farming based company. Environmental tours included the Iowa State University Dairy farm and others. Students regrouped that night for an enjoyable evening of bowling and pizza. On Saturday, Iowa State gave a tour of their department facilities in addition

to their newly expanded Biocentury research farm. Students from other schools had a chance to see some of the lab spaces used for classes, in addition to areas of current research in the Biological Systems Engineering field. The morning was concluded with a brief business meeting and the University of Kentucky was chosen as the host of the 2013 Rally.

Student Attendance: Bryan Rowntree, Alex Earhart, Alyx Selsmeyer, Brandon Nigon, Nolan Lacy, Shayne Havlovitz, Kendra Allen, Evan Price, Craig Slatterly, Joseph Keene

Students on the Power & machinery tour gather in the lobby of Ag Leader Precision Technologies for a group photo.

D.4.c. ASABE International Meeting – July 29- August 3

Student Attendance: 3

The International Meeting was held in Dallas, Texas from July 29th through August 3rd, 2012. Members attended seminars, undergraduate presentations and meetings held by ASABE as well as received the Associates of Equipment Manufacturing report award.

D.5. Social Functions Sponsored by the Branch

D.5.a. Student Faculty Mixer

At the beginning of each Fall Semester the BSE department sponsors a student/faculty mixer at the BSE laboratory building. The event promotes the diversity of the department, with an emphasis of promoting the ASABE organization. The event is open to the entire department and welcomes back returning students and introduces new students to the department. The student officer team served tacos for attendees and the event concludes with the first monthly branch meeting of the semester.

ASABE Student Officers and Advisor Becky Larson prepare to serve food at the Fall Mixer.

D.5.b Winter Game Night

In conjunction with the BSE Department, ASABE sponsored a winter game night in the machinery lab to celebrate a Green Bay Packers Super Bowl victory. For a $2 donation, members could bring their friends and family to receive pizza and soda and participate in card games, board games, and an evening of socializing. The event attracted over 40 members, faculty, and friends. It is an event that will most definitely be sponsored again in the future. It was

another great opportunity to make friends and bring our department and pre-professional group even closer together.

Members and their company enjoy a night of games and cards with each other at the machinery lab

D.6 Branch Publications

Organized tours and branch meetings are publicized by signs posted in the Agricultural Engineering Building and Agricultural Engineering Lab Building. (See Appendix C)

ASABE also has postings on a bulletin board located in the Agricultural Engineering Building. The location ensures students will have a clear view of ASABE activities, as it is located near the classroom and an exit doorway.

E. SPECIAL ACTIVITIES BY MEMBERS

E.1. Campus Participation (Professional Societies, Honor Societies, Social Clubs, Sports)

Josh Accola	American Society of Agricultural and Biological Engineers
	Tau Beta Pi Engineering Honor Society
	Pi Mile Charity Run Coordinator/Social Coordinator
Aaron Bohnhoff	American Society of Agricultural and Biological Engineers
Reid Christ	American Society of Agricultural and Biological Engineers
	Alpha Gamma Rho fraternity
Benjamin David	American Society of Agricultural and Biological Engineers
	SAE
	Hybrid Vehicle Team
Alex Earhart	American Society of Agricultural and Biological Engineers
	ASABE ¼ Scale Tractor Team
Kristi Freitag	American Society of Agricultural and Biological Engineers
	Tau Beta Pi Honor Society
	Intervarsity Christian Fellowship
	Wisconsin International Scholars
Franklin Gerschke	Sigma Phi Epsilon
Andy Holstein	American Society of Agricultural and Biological Engineers

	American Society of Civil Engineers
Nolan Lacy	American Society of Agricultural and Biological Engineers
	ASABE ¼ Scale Tractor Team
Megan May	American Society of Agricultural and Biological Engineers
	Food Science Club
	Alpha Omega Epsilon Sorority
Andrew Meinerz	American Chemical Society
	UW Fishing Club
	Intramural Sports-volleyball, basketball, football
Brandon Nigon	American Society of Agricultural and Biological Engineers
	UW-Fishing Club
	ASABE ¼ Scale Tractor Team
Alicia Pelletier	American Society of Agricultural and Biological Engineers
	WISPIRIG, Public Interest research group
Evan Price	American Society of Agricultural and Biological Engineers
	Steward of Babcock Hall
	ASABE ¼ Scale Tractor Team
	Saddle and Sirloin Club
Bryan Rowntree	American Society of Agricultural and Biological Engineers
	ASABE ¼ Scale Tractor Team
	Babcock House
	CALS Ambassadors

Jake Standal	American Society of Agricultural and Biological Engineers
	ASABE ¼ Scale Tractor Team
	Babcock House
	Badger Crops Club
	UW Saddle & Sirloin
	Babcock House
Alyx Selsmeyer	American Society of Agricultural and Biological Engineers
	Badger Dairy Club
	Collegiate Farm Bureau
	Association of Women in Agriculture
Clayton Selsmeyer	American Society of Agricultural and Biological Engineers
	ASABE ¼ Scale Tractor Team
	Alpha gamma Rho Fraternity
	Badger Dairy Club
Brian Straub	American Society of Agricultural and Biological Engineers
	Alpha Gamma Rho
	Badger Dairy Club
Brenna Stow	American Society of Agricultural and Biological Engineers
	UW-Marching Band
Justin Wendorf	American Society of Agricultural and Biological Engineers
	Alpha Gamma Rho
	UW-Humorology

Kevin Zwieg	American Society of Agricultural and Biological Engineers
	Alpha Gamma Rho
Tom Zwald	American Society of Agricultural and Biological Engineers
	Badger Dairy Club
	Alpha Gamma Rho
	ASABE Quarter Scale Tractor Team
	World Dairy Expo General Chair

E.2. Community Participation (Church Activities, Philanthropic Societies, Other)

Josh Accola	Navigators Campus Ministry
	Catalyst Leadership Team
Aaron Bohnhoff	American Society of Agricultural and Biological Engineers
Scott Dietsche	Chapel Worship Band
	Cru-Campus Crusade for Christ
Kristi Frietag	Church Small group
	Nehemiah Development Corporation Youth Mentor
Andy Holstein	Habitat for Humanity
Evan Price	Boy Scouts
Bryan Rowntree	First Congregational UCC Church of Madison
Alyx Selsmeyer	Heartland Animal Farm Sanctuary Volunteer
Brenna Stow	WISPIRG-K12 Education
Justin Wendorf	Habitat for Humanity

E.3. Publications

E.3.a. Department Publications

The BSE Department at Madison produces a newsletter for the department that includes information from alumni to students. These publications can be found on the department website and are included in Appendix D.

E.3.b. Publications about Members

None Included

F. SUMMARY OF PROGRESS

F.1 Goals

F.1.a. Goals of 2012

1. Increased membership to include more students in the BSE department
2. Increased participation at the Sectional ASABE meetings and events. (WI Sectional meeting, MRR, etc.)
3. Increased meeting publicity and awareness of professional speakers

F.1.b. Goals of 2013

1. Start a Fountain Wars Team.
2. Increase involvement in volunteer activities.
3. Increase number of overnight events and involvement in them.

F.2 Financial Statement

January 1, 2012 to December 31, 2012

Beginning Balance January 1, 2012	**$4653.55**
Ending Balance December 31, 2012	**$6022.46**

F.2.a Complete Financial Statement

ASABE 2012 Complete Deposits/Expenses

Deposits

Membership	Social	Food	LMC/MRR	Misc.	Conferences	Description
40.00						Member Dues
250.00						Member Dues
250.00						Member Dues
			2562.02			LMC Deposit
				108.72		Money for Steens
Totals						**Total Deposits**
540.00	0		2562.02	108.72		3210.74

Expenses

Membership	Social	Food	LMC/MRR	Misc.	Conferences	Description
				-108.72		Donation to the Steens
		-83.44				Feb Mtg. Food Silvermine Subs
		-56.72				Test Pull Food
		-100.49				April Meeting Food
			-564.24			MRR Hotel Rooms and Registration
		-141.16				May Meeting Food
		-100.97				October Meeting Food
			-350.11			LMC Supplies
		-109.68				November Meeting Food

	-122.88					Food and Drink for Game Night
		-103.42				December Meeting Food
Totals						**Total Expenses**
-0	-122.88	-695.88	-914.35	-108.72		-1841.83

F.2.b Proposed budget Verses Actual Finances

Proposed Budget				Actual Finances	
Starting Balance	**4500.00**			4653.55	
Food	-600.00	$100 per meeting 6 meetings		-639.16	Food for Monthly Meetings
Social	-200.00	Game Night and Tractor Pull		-179.60	Food for Game Night and Pull
Conferences	-600.00	International Meeting, MRR, AETC, CALS Leadership		-564.24	MRR
Misc.	-100.00	Donations		-108.72	Donation For Steens
LMC	-300.00	LMC Supplies		-350.11	LMC Supplies
Total Expenses	-1800.00			-1841.83	
Dues	300.00	$10 per person at 30 members		540.00	
Profit	2,000	LMC		2562.02	
Grants	500.00	Polygon, Grants		0	
Etc.	0			108.72	Money Raised for Steens
TOTAL INCOME	**2800.00**			3210.74	
ENDING BALANCE	**5500.00**			6022.46	

G. BRANCH REPORT

G.1. Report Preparation

G.1.a. Report Cover-Group A, Average membership over 33 members

G.1.b. Students Who Prepared the Report

Bryan Rowntree, AEM Co-Chair

Brenna Stow, AEM Co-Chair

G.2. Report Review

As advisor to the UW-Madison ASABE Pre-Professional Group, I have reviewed this document. To the best of my knowledge, everything contained in this report is factual.

Dr. Rebecca Larson, UW-Madison ASABE Pre-Professional Group Advisor

G.2.a Score Sheet

Score Sheet for Rating ASABE Student Mechanization Branches Competing for the Association of Equipment Manufacturers Award

(Adopted 1975)

POINTS	A. Organization
3	1. Membership – List the names of all who held full branch membership. The list should be alphabetical by classes. Place an * by the names of those who paid national dues.
	a. Rules of membership - This should be a brief statement which includes the grades of membership, who is eligible and requirements for membership. Also include a dues payment statement similar to: "Payment of branch dues of $20.00 per year is required for branch membership. The branch dues include national ASABE dues." Modify this statement as required. b. Number of students eligible by classes.* c. Number and percentage of total students eligible that paid dues to the branch.* d. Number and percentage of student mechanization branch members enrolled as student members of ASABE.* *See Example 1 for **required format**.
3	2. List student mechanization branch offices and officers and their terms of office.
3	3. List of standing committees, their members and activities. It is recommended that every branch have an executive committee to plan meetings and in general handle minor "day-to-day " issues. This committee should review the AEM report and other committee chairs should review applicable sections of the report for completeness.
3	4. List of special committees, their members and activities.
12	Total Possible Points **A. Organization**

POINTS	B. Meeting Activities
	(See Example 2 for **required format**.)

5	1. Meetings a. Is academic credit received for meeting attendance? b. Number of meetings held during the year.
5	2. Attendance at meetings. a. Number and percentage of members attending each meeting and averages for year. b. Number and percentage of faculty* members attending each meeting and averages for the year. *Resident teaching, extension, research and graduate student personnel.
10	Total Possible Points **B. Meeting Activities**

POINTS	**C. Quality of Meeting** (See Example 3 for **required format**)
6	1. Describe character and procedure of meetings. Include general items such as meeting type, time, place, procedure, and how special meetings are called (if applicable).
9	2. List date and program for each meeting. This item should follow the outline of Section B with a summary paragraph of each business meeting and a summary paragraph for each special program or speaker.
15	Total Possible Points **C. Quality of Meetings**

POINTS	**D. List and Describe Special Branch Activities**
12	1. Branch participation in regular campus annual days, special projects, special days, community projects, student government, etc.
7	2. Career educational programs for potential students.
8	3. Inspection trips and tours. Organized by the branch, open to all branch members and not required by the college.

4	4. Attendance at international and section meetings of ASABE. (Consider combining an inspection trip with international meeting trip.)
4	5. Social functions sponsored by the branch. Cook-outs, dances, refreshments at the professor's house, etc. Agricultural Mechanization is fun - isn't it?
5	6. Branch publications and communications should be used to keep on-campus members informed of meeting actions and upcoming events. Describe how members are kept informed through newsletters, meeting announcements, e-mails, website, etc., and include copies or samples of communications.
40	Total Possible Points **D. List and Describe Special Branch Activities**

POINTS	**E. Special Activities by Members**
4	1. Campus Participation (list activities or societies followed by names of members participating) a. Professional Societies b. Honor Societies c. Social Clubs d. Sports Clubs e. Other
2	2. Community Participation (list activities or societies followed by names of members participating) a. Church Activities b. Philanthropic Societies c. Other
2	3. Publications a. Publications pertaining to the department or profession b. Publications written by or about members (list names)
8	Total Possible Points **E. Special Activities by Members**

POINTS	**F. Summary of Progress**
5	1. Under this heading give a carefully prepared statement explaining advances the branch has made during the past year. Do not include continuing activities unless advancement was made. If continuing activities are included, clearly note the area of advancement. a. What of last year's goals have been met? b. Set new goals for next year. Be realistic, set measurable goals that are attainable. When a goal is reached,

immediately set a new goal.

3	2. Financial statement of branch to indicate its activity. This item should be in the form of a standard "Profit and Loss" statement. (See Example 4 for **required format**).
8	Total Possible Points **F. Summary of Progress**
POINTS	**G. The Mechanization Branch Report**
7	1. Appearance, adherence to score sheet sequence, clarity and names of those who helped prepare the report. Please include a "Table of Contents" at the beginning of the report. 2. Include the score sheet and report instructions and any appropriate comments for improvement in the competition. The purpose of the competition is to provide a "special incentive to the members of Student Mechanization Branches . . . " This is your report.
7	Total Possible Points **G. The Mechanization Branch Report**
	Grand Total Possible Points Total: 100
	We hope this competition helped your branch, your community and you to be a better engineer and citizen.

Example 1: The AEM reporting period will usually split a school quarter or semester (Spring Quarter is the example). Most groups are inactive during the summer, therefore they would not include a summer session.

A. ORGANIZATION

	A.1.c. Number of Students Eligible by Classes					A.1.d. Number of Eligible Students That Are Branch Members					A.1.e. Number of Branch Members That are National ASABE Members				
Quarter	**Fr.**	**So.**	**Jr.**	**Sr.**	**Total**	**Fr.**	**So.**	**Jr.**	**Sr.**	**Total**	**Fr.**	**So.**	**Jr.**	**Sr.**	**Total**
Spr 92	10	3	13	8	34	2	1	13	7	23	1	0	8	6	15
Sum 92	2	1	5	4	12	1	1	4	4	10	1	1	1	1	4
Fall 92	12	9	6	16	43	0	4	3	18	22	0	4	3	14	21
Win 93	8	9	5	17	39	0	4	4	16	24	0	4	4	15	23
Spr 93	8	8		15	37	2	5	5	15	27	1	3	5	14	23

Totals Soph., Jr., and Sr. Only	125	101 80.8% of eligible Soph., Jr,. Sr., Branch Members	106 21.2 Avg. Memb. Per quarter	83 82.2% of Soph., Jr., Sr. Branch Members are National ASABE Members

Example 2: The chart below should be used as a guide. Totals and averages are listed at the top, followed by a schedule of meetings as indicated. Average membership is taken from Example 1. In Section C.2 the items in this chart will be expanded

B. MEETING ACTIVITIES

B.1.a. Academic credit is not given for meeting attendance

B.1.b Meeting	B.2.a	-	B.2.b	
	Attendance			
	Members	Visitors	Faculty	
-	21.2	-	11	
Total Meetings 2	39	6	5	
-	19.5	3	2.5	
	92%	-	23%	
March 6, 1993	23	2	3	
March 27, 1993	16	4	2	

Example 3: The chart below should be used as a guide.

C. QUALITY OF MEETINGS

Total Meetings	Business Meeting Summary	Special Program or Speaker Summary
2		
March 6, 1993		
March 27, 1993		

Example 4: Typical financial statement for your AEM report.

F. SUMMARY OF PROGRESS

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F.2 Financial Statement					
Student Branch of ASABE March 1, 1993 to February 28, 1994					
Beginning Balance March 1, 1993	Checking Account Savings Account	$ 1.07 691.84	**Disbursements**	Banquet Conference Savings	$352.41 299.49
		$692.91		National dues	105.00
Ending Balance February 28, 1994	Checking Account Savings Account	$ 17.66 751.84		Office space Refreshments	22.50 23.86
		$769.50		AEM Supplies	6.88
Net Gain During Period		**$ 76.59**		Awards	18.46
Receipts	Banquet	$ 395.25		Savings Account Deposit	60.00
	Conference Servings	365.84		Bank Service	.30
	National dues	105.00		Total Disbursements	$ 888.90
	Local dues	20.00		Net Gain During Period	**$ 76.59**
	Miscellaneous	79.40			
	Total Receipts	**$965.49**		Other Assets: List assets or liabilities, such as scholarship funds, equipment, land, or other holdings.	

G.2.b. Report

Instructions

AEM Trophies Competition Procedure
The basis for determining the placing in the AEM Trophies Competition is the report required of each student engineering or mechanization branch entering the competition. Following are copies of the score sheets used by the committee in rating the reports. It is important that the preparation of each report be in accord with the outline on the score sheet, and that the following points be observed:

1. All entries are to be received by **March 18** and submitted **electronically only** in a PDF file as an email attachment to the attention of ASABE Awards Administrator, Carol Flautt. Electronic entry submission will allow ASABE headquarters to send entries electronically to the competition judges. Entries in hard copy version sent via regular mail will not be accepted.
2. Report on activities and events occurring during only one calendar year period (January - December); those in which your organization participates after that date may be included in your report for the following year.
3. Any Group B student engineering branch, by special request to the committee made through the ASABE Awards Coordinator, may be allowed to enter Group A student engineering branch competition.
4. Complete information should be given on each item listed on the score sheet. If there has been no activity under a particular itembe sureto so indicate. (Organizations frequently fail to supply thecompleteinformation requested; it is better to indicate "no activity" than to overlook or ignore an item completely).
5. Submit the information requested on the score sheet in precisely the order in which it is listed. (Failure to follow this order makes scoring of the reports much more difficult, so it is to the advantage of each organization to comply faithfully with this request).
6. The same material should not be included under two or more headings; it is essential that it be carefully organized and inserted under the proper heading.Do not include extraneous material; poundage does not always evidence a good report.
7. Wherever possible to obtain them, it is desirable to illustrate reports with photographs, newspaper clippings, programs and copies of publications. Also,underscoreall clippings to indicate clearly the particular portion thereof to which you desire to draw the committee's attention.
8. Address all correspondence and questions relating to the AEM Trophies Competition to ASABE Awards Administrator, Carol Flautt.
9. It is suggested that a table of contents and page numbers are incorporated in the report.

Awards
AEM provides plaques for the top three schools in each of the three divisions. The plaques are presented during the AEM luncheon held every year during the ASABE Annual International Meeting.

Eligible Student Organizations are divided into three groups:

1. Student Mechanization Branches;
2. Larger Student Engineering Branches (Group A) 33 or more students; and
3. Smaller Student Engineering Branches (Group B) under 33 students.

Student branch membership is the average membership as determined in Section A-1 of the score sheet. The average membership calculated in the report will determine the class in which the report is judged.

Identical cups bearing the appropriate identification will be awarded to the winners of each classification. Recognition plaques will be awarded to the second- and third-place branches in each classification.

APPENDIX A: LIST OF ACRONYMS

Acronyms

AEM = Association of Equipment Manufactures

ASABE = American Society of Agricultural and Biological Engineers

BSE = Biological Systems Engineering

CALS = College of Agriculture and Life Sciences

DATCP= State Department of Agriculture, Trade, and Consumer Protection

LMC or L.M.C. = Lawn Mower Clinic

MRR = Midwest Regional Rally

UW-Madison = University of Wisconsin-Madison

WALSAA = University of Wisconsin Life Sciences Alumni Association

Appendix B: Complete Meeting Minutes

Meeting Minutes: February Meeting

Speaker Gary Steingraber from Boumatic

Called to order (6:09pm)

Reports

- Approval of Secretary Minutes from December
- Approval of Treasurer's Report from December

Officer Reports

- Polygon(Shayne) – First general meeting so there wasn't anything new to report
- CALS (Jim)- CALS Day 4 Kids will be April 17th
- Tractor Team (Tom) - Need help with getting everything ready for the pull in March. Meeting Thursday nights from 6-9pm in the lower lab

Old Business

- **Midwest Regional Rally (MRR)**- Ames, Iowa- March 22-23
    - Two day trip: Tours during the day Friday, social Friday night, and ASABE Department Tour on Saturday. Would like a great showing this year. Let Bryan know if you are interested and he will be sending out more information. ASABE pays for half of registration $20, and for hotel costs. The trip will only cost $20/person.
- **Agricultural Equipment Technology Conference (AETC)-** Louisville, Kentucky – Feb 13th -15th
- **T-shirts**: Contact Megan if you have not picked up your ASABE club shirt

New Business

Semester Trip Ideas

- **John Deere Horicon**: 2nd shift and Saturday tour opportunities
- **Grassland Dairy**: 3 hours North of Madison, large butter producer and starting to go into milk drying
- **Klondike Cheese Factory**: 1 Hour away Produce feta (only 1 of 3 plants in the U.S.), Muenster and block cheese (Saturday) completely automated cheese making process.
- **Potato Chip (kettle chip) Factory**: Could be tied in with another tour
- **New Glarus Hard Hat Tour:** Fridays at 1pm 8 samples of beer 4 samples of cheese $20/person
- **Ellis Island**: Madison
- **John Deere**: Waterloo Date is Tentative, but would be on a Friday

AEM Report- Due March 16th (Bryan)

- Need news articles, publications, pictures, etc. concerning ASABE and its members
- Let him know if you would like to help write the report

LMC Position Available

- Jake and Nolan are interested
- Motion to approve 4 LMC Chairs
- Motion passed

Engineering Week

- Interest in attending events, but maybe not hosting an event this year

- List will be sent out to see what events are still available to host

Upcoming Events/Dates

March 14 Next ASABE Meeting

March 22-23 MRR

March 28 WI Section Meeting Oshkosh WI (Wednesday)

July 29-August 1 ASABE National Meeting Dallas, Texas

Adjourn election meeting at 6:31 pm

Meeting Minutes: March Meeting

Speaker Joel Krein VP Operations for Leprino Foods Co.

Called to order (6:28pm)

Reports

- Approval of Secretary Minutes from February
- Approval of Treasurer's Report from February

Officer Reports

- Polygon (Shayne) – Polygon meeting was the same time as ASABE Meeting. Updates next meeting.
- CALS (Jim)- CALS Day 4 Kids will be April 17th (600 elementary kids attend and we show them the ¼ scale tractor and the badger crank away): will need volunteers
    - New Dean in CALS
- Tractor Team (Tom) - Pulled last Friday, still have a lot of work before the competition in June. Tractor team still needs help! Meetings are Thursday nights from 6-9pm in the lower lab
    - Took donations for the Stein Family at the tractor pull

Old Business

- **Midwest Regional Rally (MRR)**- Ames, Iowa- March 22-23
    - Two day trip: Tours during the day Friday, social Friday night, and ASABE Department Tour on Saturday. Would like a great showing this year. Let Bryan know if you are interested and he will be sending out more information. ASABE pays for half of registration $20, and for hotel costs. The trip will only cost $20/person.
    - 11 people attending!
- **Agricultural Equipment Technology Conference (AETC)-** Louisville, Kentucky – Feb 13th -15th
- **AEM Report**- Brian has been working on this. He needs your extracurricular activities right away so please e-mail him at browntree@wisc.edu

New Business

Wisconsin Section Meeting: (March 28th-Wednesday in Oshkosh) Free food and there will be vans leaving at different times. Great way to network with professionals and tour a dairy farm in Oshkosh. There will be a sign-up in the office if you would like to attend.

International Meeting: July 29th-August 1st Dallas, Texas: Still looking for a contact person to lead the arrangements for the trip. If you are interested let Alex know.

CALS Meetings: (April 12th and May 10th MSB Building Rm 6201) Eric has volunteered to attend the meetings.

Tour Updates: New Glarus is not an option anymore. Looked into Ale Asylum and can attend on a Saturday. Minhaus Monroe Brewery and the Klondike Cheese tour at the same time are looking like a great option.

FE Exam Transportation: Looking into providing transportation to the Exam to use BSE department vehicles. Please e-mail Alex if you are interested in taking advantage of this opportunity.

Upcoming Events/Dates

March 22-23 **MRR**

March 28 **WI Section Meeting** Oshkosh WI (Wednesday)

April 11th **April Meeting**

July 29th-August 1st **ASABE National Meeting** Dallas, Texas

Adjourn election meeting at 6:51pm

Meeting Minutes: April Meeting

Speaker: Adam Paul IPEC

Called to order (6:00pm)

Reports

- Approval of Secretary Minutes from March
- Approval of Treasurer's Report from March

Officer Reports

- Polygon (Shayne) – Attended Alcohol Seminar, selecting a new dean for the College of Engineering and need volunteers for the committee
- CALS (Jim)- CALS Day 4 Kids will be April 17th (600 elementary kids attend and we show them the ¼ scale tractor and the badger crank away): will need volunteers (sign-up on Debby's desk)
- Tractor Team (Tom)- Acquired a new transmission and need to do a lot of work on the tractor, report is due in 10 days
    - Tractor team still needs help! Meetings are Thursday nights from 6-10pm in the lower lab

Old Business

- **Midwest Regional Rally (MRR)**- Ames, Iowa- March 22-23
    - Two day trip: Tours during the day Friday, social Friday night, and ASABE Department Tour on Saturday
    - Iowa State, Illinois, and Kentucky students attended
    - Machinery, Environmental, Wastewater Treatment Plant Tours

- Bowling
- Next Year: University of Kentucky!!!

Wisconsin Section Meeting: (March 28th-Wednesday in Oshkosh)

- Public Service Farm show
- Tour of Rosendale Dairy
- 5 students went to the meeting
- Joe Keene (Graduate Student of the Year)
- Megan May (Student of the Year)
- Dr. Reinemann 25th and Dr. Straub 40th ASABE membership awards
- 10 of the 13 newly elected officers are alumni or faculty members at UW

International Meeting: July 29th-August 1st Dallas, Texas: Still looking for a contact person to lead the arrangements for the trip. If you are interested let Alex know. *Dallas Cowboy Stadium Tour and Rodeo!!!!!*

FE Exam Transportation: Providing transportation to the Exam with BSE department vehicles. Meeting at the lab at 6:45AM sharp. Please e-mail Alex if you are interested in taking advantage of this opportunity.

****Dr. Bohnhoff is hosting an Engineering Econ Review for the FE Exam at 6:00pm tomorrow night (Thursday) in AG ENG 101

New Business:

Tour Updates:

Capitol Brewery Saturday April 28th 1:00pm (arrive at 12:45pm) (e-mail Alex if you are interested in attending)

Upcoming Events/Dates

CALS Day 4 Kids Tuesday from 9:30am-3:30pm in the Stock Pavilion

Capitol Brewery Tour Saturday April 28th 1:00pm

May 9th ASABE Meeting (cookout at the Lab)

Wisconsin Section Meeting in Monroe: May 23rd Klondike Cheese Tour, Monroe Truck Tour, Badger State Ethanol Plant

July 29th-August 1st **ASABE National Meeting** Dallas, Texas

Adjourn election meeting at 6:31pm

Meeting Minutes: May Meeting

Speaker: Goodbye to Seniors: Straub

Called to order (5:51pm)

Reports

- Approval of Secretary Minutes from April
- Approval of Treasurer's Report from April

Officer Reports

- Polygon (Shayne) – Last meeting of the year and elections took place. Ratified the new constitution and can be found on the Polygon Website.
- CALS (Jim)- Thank you for all the volunteers who helped at the BSE Booth
- Talked to 7-8th graders about BSE and about what tractor team is working on
- Tractor Team (Tom)
    - Tractor team still needs help! Meetings are Thursday nights from 6-10pm in the lower lab

Old Business

Arboretum and Capitol Brewery Tour (Brandon)

- This was a really cool tour of the Arboretum and the samples from the brewery were delicious!

Association of Equipment Manufacturers (AEM Report) (Bryan)

- 2nd Overall and 1st in Group B
- Thanks to everyone who helped edit and contributed to the AEM Report

New Business:

International Meeting: July 29th-August 1st Dallas, Texas: Still looking for a contact person to lead the arrangements for the trip. If you are interested let Alex know. *Dallas Cowboy Stadium Tour and Rodeo!!!!!*

- Professor Larson is the summer contact
- Sign-up online

T-Shirt Discussion: Possibility of increasing dues to $20 to buy fancier T-Shirts

Tour Updates:

Upcoming Events/Dates

Wisconsin Section Meeting in Monroe: May 23rd **Klondike Cheese Tour, Monroe Truck Tour, Badger State Ethanol Plant**

May 31st-June 3rd **Tractor Team Competition (Expo Gardens, Peoria, IL)**

July 29th-August 1st **ASABE National Meeting Dallas, Texas**

Next Meeting:

Fall Cookout

Adjourn election meeting at 5:59pm

Meeting Minutes: September Meeting

Speaker: Dick Straub Welcome to BSE

Called to order (6:03pm)

Reports

- Approval of Secretary Minutes from May
- Approval of Treasurer's Report from May

Officer Reports

- Alex- International Meeting- 3 members attended in Dallas, Texas
    - Witnessed fountain wars, senior design projects, networking
- Polygon – Will report at next meeting
- CALS (Jim)- Will report at next meeting
- Tractor Team (Bryan)
    - Tractor team needs help! Meetings are Thursday nights from 6-9pm in the lower lab
    - Build small pulling tractor from the ground up

New Business:

Corn Maze Event in in the planning process

Volunteering at the Arboretum (Saturday)

Tour of Forest Products Laboratory

Breakfast with Babcock House before a Football Game

T-Shirt Discussion: Decision to increase dues to $20 to buy nice polos

- Bring designs to the next meeting!!!!

Membership Dues

$20 for Annual Student Membership

Additional $22 for National ASABE Membership Recommended!!!!

Fountain Wars

- Given certain materials and have to complete a task using water and engineering design

Wisconsin Section Meeting- In Madison It's Free for Students!!! October 3rd

- Transportation Provided
- Great networking opportunity

Lawn Mower Clinic

- Largest Fundraiser for ASABE (middle to end of November)
- Each member is required to donate at least 3 hours of their time

Speakers Next Meeting: if you had an internship or co-op this past summer/spring let Brian know that you would like to present (short presentation, general overview of internship) browntree@wisc.edu

Upcoming Events/Dates

Next Meeting:

October 3rd Wisconsin Section Meeting- In Madison

October 10th – Next Meeting

TBA Arboretum Volunteer Work

TBA Forest Products Lab

TBA Babcock Breakfast

TBA Corn Maze

Adjourn election meeting at 6:21pm

Meeting Minutes: October Meeting

Speaker: Student Speakers

Called to order (6:09pm)

Reports

- Approval of Secretary Minutes from September
- Approval of Treasurer's Report from September

Officer Reports

- Alex- Dean Kate supported the arrival of the donated tractor
- Polygon (Shayne) – Application for funding has changed and Polygon no longer have weekly meetings
- CALS (Jim)- No new news to report
- Tractor Team (Jake)
    - Tractor team needs help! Meetings are Thursday nights from 6-9pm in the lower lab
    - Build small pulling tractor from the ground up
    - Want to have the tractor put together for Homecoming

Old Business:

Wisconsin Section meeting had a great student turn out! Thanks to all who attended.

New Business:

T-shirt Design: Design was chosen

Dry Fit Polo around $25 depending on design and colors

Polos will have ASABE University of Wisconsin and the UW Crest

Membership Dues

$20 for Annual Student Membership if you want a polo

$10 for Annual Student Membership without a polo

Additional $22 for National ASABE Membership Recommended!!!!

Lawn Mower Clinic (Nolan)

1,2,3rd of November

Largest Fundraiser

Every club member needs to volunteer a minimum of 3 hours

Food is provided and any help you need will be provided

Fountain Wars

Given certain materials and have to complete a task using water and engineering design
If you are interested contact Alex

Majors Fair at Union South 3-5:30pm Wednesday October 24th

Stop by and talk to interested students about BSE

Time slots to be filled

Changes to Constitution

University name has to go after ASABE name

Officers need to be full time students

Non-discriminatory clause

Student members make all decisions

Blacksmithing Club

- Fine arts department has offered a space for the club
- Any interest contact Mario (grad student)

Officer Nominations- Voting will be next meeting

President

- **Evan Price**
- **Nolan Lacy**

Vice President

- **Bryan Straub**
- **Shayne H**
- **Jim Breckenridge**

Secretary

- **Eric Swanson**
- **Meredith Remter**

Treasurer

- **Jim Breckenridge**
- **Meredith Remter**

Polygon

- **Nolan Lacy**
- **Reid C.**

CALS

- **Brenna S.**
- **Drew M.**

AEM

- **Brenna S.**

Public Relations

- **Ricky Bero**

Engineering Expo

- **Nolan Lacy**
- **Jim Breckenridge**

LMC

- **Bryan Rowntree**
- **Nolan Lacy**
- **Brian Straub**
- **Trevor**
- **Justin**

Webmaster

- Mario

Upcoming Events/Dates

Next Meeting:

October 19th Corn Maze

November 1-3rd Lawn Mower Clinic

November 14th – Next Meeting

November 16th Babcock Breakfast

Adjourn election meeting at 7:07pm

Meeting Minutes: November Meeting

Speaker: Guy Selsmeyer P.E. Anaerobic Digestion

Called to order (6:09pm)

Reports

- Approval of Secretary Minutes from October
- Approval of Treasurer's Report from October

Officer Reports

- Alex-
- Polygon (Shayne) – Nothing new to report.
- CALS (Jim)- CALS fundraiser and volunteer opportunities are coming up
- Tractor Team (Jake)
    - Tractor team needs help! Meetings are Thursday nights from 6-9pm in the lower lab
    - Good turn-out at the last few meetings
- Fountain Wars (Ryan)- Next meeting is November 26th at 7:30pm in the computer lab

Old Business:

Lawn Mower Clinic (Nolan)

Raised $1,600 and appreciate the food faculty brought in each day

Jake worked the most hours, but forwarded the prize to Evan

Forest Products Lab Tour (Bryan)

Cool tour!

New Business:

Game Night: Friday November 30th 5:30pm

Babcock Breakfast: November 17th at noon

National Farm Machinery Show: Feb 13th-16th Bryan is looking into Polygon funding to pay for hotels. Great way to network with machinery companies.

Midwest Regional Rally:

AETC: Jan 28th-30th Louisville, KY. Scholarships available and due December 1st. If you are interested, talk to Nolan.

T-shirt Design:

Check your e-mail if you ordered a polo to double check the size you need. Polos will be ordered in the next few days.

Membership Dues

$20 for Annual Student Membership if you want a polo

$10 for Annual Student Membership without a polo

Additional $22 for National ASABE Membership Recommended!!!!

Elections

President:

- **Evan Price**
- **Nolan Lacy**

Vice President:

- **Bryan Straub**
- **Shayne H**
- **Jim Breckenridge**
- **Evan Price**

Secretary

- **Eric Swanson**
- **Meredith Remter**

Treasurer

- **Jim Breckenridge**

Polygon

- **Reid C.**
- **Jenna**

CALS

- **Drew M.**

AEM

- **Brenna S.**

Public Relations

- **Ricky Bero**

Engineering Expo

- **Nolan Lacy**
- **Jim Breckenridge**
- **Aaron B. : Chair**

LMC

- **Trevor**
- **Evan Price**
- **Clay S.**

Webmaster

- **Aaron B.**

Upcoming Events/Dates

Next Meeting: December 12th Monthly Meeting 5:00pm

November 17th Babcock Breakfast Noon

November 30th Game Night 5:30pm

Adjourn election meeting at 6:54pm

Meeting Minutes: December Meeting

Speaker: Julie Sinistore

Called to order (6:10pm)

Reports

- Approval of Secretary Minutes from November
- Approval of Treasurer's Report from November

Officer Reports

- Polygon (Reid) – Nothing new to report.
- CALS (Drew)- Jan 21 Martin Luther King Jr. volunteering event
- Tractor Team (Jake)
    - Tractor team needs help! Meetings are Thursday nights from 6-9pm in the lower lab
    - Getting ready for production after Winter break
- Fountain Wars (Ryan)- Next meeting is January 28th at 7:30pm in the computer lab

Old Business:

Game Night

Good turn out and everyone had a great time!

Polos (Alex)

Polos are ordered and the shirts should be ready for pick-up in January.

New Business:

National Farm Machinery Show

Feb 13th-16th Bryan is looking into Polygon funding to pay for hotels. This is a great way to network with machinery companies. If you are interested in going, contact Bryan ASAP.

AETC

Jan 28th-30th Kansas City, MO. Registration deadline is January 15th. If you are interested, contact Nolan.

Student Organization Fair

Currently full. Let Nolan know if you are interested in having a table and we will get onto the waitlist.

Tours

Possibly Virent or Brewery

Other Events

Looking for suggestions for an overnight trip.

Upcoming Events/Dates

January 28th-30th Agricultural Equipment Technology Conference (Kansas City, MO)

February 13th Monthly Meeting 5:00pm

February 13th-16th National Farm Machinery Show (Kentucky Exposition Center- Louisville, KY)

Adjourn election meeting at 6:23pm

APPENDIX C:

-Sample Agenda

-Sample Tour/Social Sign-ups

American Society of Agricultural and Biological Engineers UW-Madison Pre-professional Chapter

5:00pm ~ Food and Social
5:30pm ~ Professor Straub Senior Send-off
Meeting to Follow

Reports

- Approval Secretary Minutes from April
- Approval of Treasurer's Report from April

Officer Reports

- Polygon (Shayne)
- CALS
- 1/4 Scale Tractor Report

Old Business

- Arboretum and Capitol Brewery Tour (Brandon)
- Association of Equipment Manufacturers (AEM) Report (Bryan)
- CALS Day for Kids
- Any old business?

New Business

- International meeting – Professor Larson is the summer contact
- Quick T-Shirt Discussion
- Any new business?

Next Meeting:

Fall Cookout

Upcoming Events/Dates

May 23rd	Wisconsin Section Meeting (Monroe Wisconsin)
May 31st – June 3rd	Tractor Team Competition (Expo Gardens, Peoria, IL.)
July 29th – August 1st	International Meeting (Dallas Texas)
September 12th	Fall Cookout (Agricultural Engineering Lab)

Treasurer's Report

May Report	
Starting Balance	$4,472.90
MRR Hotels	$564.24
Incoming Dues	$20.00
Remaining Balance	$3,928.66

Secretary's Report

Meeting Minutes: April Meeting
Speaker: Adam Paul IPEC
Called to order (6:00pm)
Reports
- Approval of Secretary Minutes from March
- Approval of Treasurer's Report from March

Officer Reports
- Polygon (Shayne) – Attended Alcohol Seminar, selecting a new dean for the College of Engineering and need volunteers for the committee
- CALS (Jim)- CALS Day 4 Kids will be April 17th (600 elementary kids attend and we show them the ¼ scale tractor and the badger crank away): will need volunteers (sign-up on Debby's desk)
- Tractor Team (Tom)- Acquired a new transmission and need to do a lot of work on the tractor, report is due in 10 days
    - Tractor team still needs help! Meetings are Thursday nights from 6-10pm in the lower lab

Old Business
- **Midwest Regional Rally (MRR)**- Ames, Iowa- March 22-23
    - Two day trip: Tours during the day Friday, social Friday night, and ASABE Department Tour on Saturday
    - Iowa State, Illinois, and Kentucky students attended
    - Machinery, Environmental, Wastewater Treatment Plant Tours
    - Bowling
    - Next Year: University of Kentucky!!!

Wisconsin Section Meeting: (March 28th-Wednesday in Oshkosh)
- Public Service Farm show
- Tour of Rosendale Dairy
- 5 students went to the meeting
- Joe Keene (Graduate Student of the Year)
- Megan May (Student of the Year)
- Dr. Reinemann 25th and Dr. Straub 40th ASABE membership awards
- 10 of the 13 newly elected officers are alumni or faculty members at UW

International Meeting: July 29th-August 1st Dallas, Texas: Still looking for a contact person to lead the arrangements for the trip. If you are interested let Alex know. *Dallas Cowboy Stadium Tour and Rodeo!!!!!*

FE **Exam Transportation:** Providing transportation to the Exam with BSE department vehicles. Meeting at the lab at 6:45AM sharp. Please e-mail Alex if you are interested in taking advantage of this opportunity.
****Dr. Bohnhoff is hosting an Engineering Econ Review for the FE Exam at 6:00pm tomorrow night (Thursday) in AG ENG 101

New Business:
Tour Updates:
Capitol Brewery Saturday April 28th 1:00pm (arrive at 12:45pm) (e-mail Alex if you are interested in attending)
Upcoming Events/Dates
CALS Day 4 Kids Tuesday from 9:30am-3:30pm in the Stock Pavilion
Capitol Brewery Tour Saturday April 28th 1:00pm
May 9th ASABE Meeting (cookout at the Lab)
Wisconsin Section Meeting in Monroe: May 23rd Klondike Cheese Tour, Monroe Truck Tour, Badger State Ethanol Plant
July 29th-August 1st **ASABE National Meeting** Dallas, Texas

Adjourn election meeting at 6:31pm

ASABE TOUR:

USDA Forest Products Laboratory

Thursday, October 11th, 3-5 pm

Meet at the Lower Lab at 2:45 pm

Sign-Up in Debby's Office!

Take some time to tour Madison's very own USDA Forest Products Lab, located to the west of campus near the UW-Hospital. It has been the lab's mission for

almost 100 years to use the Nation's wood products wisely and efficiently. We will be touring their facility, witnessing a wide variety of testing labs and current s of research including adhesives, paper, composites, nanocellulose, fir resistance, and more!

ASABE Forest Products Lab Tour Sign-Up

Thursday, October 11th 3-5 pm (Meet at Lower Lab @ 2:45 pm)

Questions? Contact browntree@wisc.edu

Name:	*Email:*

Appendix D: Publications- Department Newsletter

BSE Update

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

Volume 19, Issue 1 — Winter 2012

Inside this issue:

Remarks from Chair Richard Straub

As we begin spring semester and as we look back over the year, the Biological Systems Engineering Department has much to be thankful for and much to be proud of. Our student numbers continue to grow with another increase over the last summer to about 125 undergraduates and 40 graduate students. These young folks are an outstanding group of individuals that provide a bright and hopeful future to our Department and who will hopefully contribute as much to our profession, society and the future as those of you alumni who have gone through our Department.

Our faculty ranks have been very productive and stable in a time when many departments have lost faculty. Our faculty generated about 20% more in grant funding in 2011 over the previous year. This past year, we did lose Assistant Professor Matt Digman (Machinery Systems Extension Specialist), who decided to return to the USDA Dairy Forage Research Center, but we have been fortunate in getting the nod to refill this position, helping us maintain strength in this critical core area. We have an outstanding group of young talented faculty as assistant professors in Rebecca Larson (waste management), Troy Runge (bioprocessing) and Xuejun (Jun) Pan (bioprocessing). K. G. Karthekeyan, who has spent the last 2 years in Qatar helping develop an environmental science and engineering program and developing innovative water treatment techniques, will be rejoining us this summer. We look forward to his return and to hearing about his experiences while on leave. While K. G. is returning, Professors David Kammel and Anita Thompson will be on sabbatical some part of the next academic year. Professor Kammel with be working on revising his short course and integration of that new material into a regular course offering, in addition to some international experiences. Professor Thompson will focus her study leave on flood prediction and mitigation, and on ecological implications and engineering approaches to water resource management. Additionally, Professor Rob Anex, who came from Iowa State University as a Wisconsin Bioenergy Initiative hire, has done an amazing job of getting his research and teaching program going since joining us. Rob works in life cycle assessment, system modeling and technology evaluation related to bioenergy.

We also look forward to and welcome the arrival of our new Dean, Kathryn "Kate" VandenBosch, who will begin March 1. It will be good to have permanent leadership in place as we deal with the challenges facing our budget. Please be supportive of Dean VandenBosch as she moves us ahead in a budget time that will definitely result in a smaller faculty base here at the UW-Madison and throughout the UW System. The cuts you have all read about are real and deeper than any I have ever seen, and ultimately will impact our long term ability to serve our students and the public. We will come through this, but not without effect. If you have the opportunity, your support for BSE, CALS, UW-Madison and System, as educational institutions and as an economic engine through our research, would be appreciated. Please help us get the word out that what we do matters and that it makes a difference. Thanks for your support and keep in touch, Dick Straub

Student Update...

Congratulations to the ASABE Officers for 2012

President:

Alex Earhart

Vice President:

Bryan Rowntree

Secretary:

Megan May

Treasurer:

Brandon Nigon

AEM:

Megan Wolf

Public Relations:

Tom Zwald

Polygon:

Shayne Havlovitz

CALS:

Jim Breckenridge

Webmaster:

Ali Pelletier

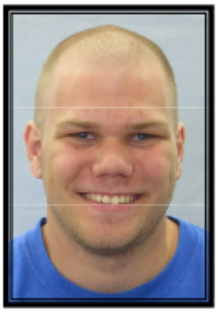
Lawnmower Clinic:

Brandon Nigon
Bryan Rowntree
Kevin Zweig

ASABE News by President Tom Zwald

This last semester has been a great semester for ASABE. Over the summer we were well represented at the quarter scale tractor team competition in Peoria. We also had members attend the International meeting. The year started with a student, faculty and staff mixer where great food was served. The students had a chance to network and we had the chance to introduce ASABE to the new BSE students. We always appreciate this opportunity as it allows our club to grow and reach out to the students.

We also had some more very interesting and informative tours this last semester. We had a tour of Larson Acres, a dairy farm that has implemented some of the latest inventions in cooling, manure management, and cattle practices. We toured Kuhn Night where we saw numerous other innovations in work and being constructed every day. A group of members went to a haunted corn maze, as a social activity. We had a great showing at the first (and hopefully semi-annual) card night for ASABE. We had great speakers for all of our meetings this semester which allowed a little bit of industry to be brought to us. Then in November we had our officer elections. Congrats to the new officers, and hopefully they can take the enthusiasm we currently have in the club to whole new levels in 2012.



Tom Zwald

Life Cycle Assessment of Cellulosic Ethanol Researched

BSE PhD candidate Julie Sinistore and Professor Doug Reinemann have been researching the environmental impacts of the production of ethanol from corn stover and switchgrass grown in Wisconsin and Michigan as a part of the Great Lakes Bioenergy Research Center (GLBRC). The environmental impacts of cellulosic ethanol production include net resource use (such as energy and water) and emissions to air, water and soil (such as greenhouse gas (GHG) emissions, acidification and eutrophication). They are exploring two major pathways from biomass to cellulosic fuel. The baseline for comparison is a dilute acid pretreatment of biomass followed by enzymatic hydrolysis and fermentation. They are comparing the dilute acid method to the Ammonia Fiber Expansion (AFEX) pretreatment method which was developed by GLBRC researchers. Each pretreatment and biomass combination results in slightly different enzymatic hydrolysis and fermentation conversion efficiencies, therefore, the results are rich with insights into best practices and areas for improvement in ethanol production.

To accomplish the goals, they have acquired a sophisticated modeling platform called GaBi which features an interactive and Continued on page 5

Student Update...

BSE PhD Candidate Building Envelope Thermal Analysis and Design Using a Rotatable Guarded Hot Box

BSE PhD candidate Andrew J Holstein and Professor David R Bohnhoff are researching building envelope thermal analysis and design using a rotatable guarded hot box. To properly estimate the heat flow through a building's exterior shell one must determine the overall thermal efficiency of the building's envelope. Due to varying material geometries and multiple possible heat transfer modes, the heat transfer through the envelope is non-uniform and three-dimensional. Compounding issues is the effect that air infiltration through building materials has on heat transfer. These factors make it extremely difficult to accurately model the heat flow through a building's envelope. The best method for determining the overall thermal efficiency of a building's envelope is the large scale testing of representative wall and roof sections side by side under laboratory conditions. This testing is done using an apparatus known as a guarded hot box (Fig 1).

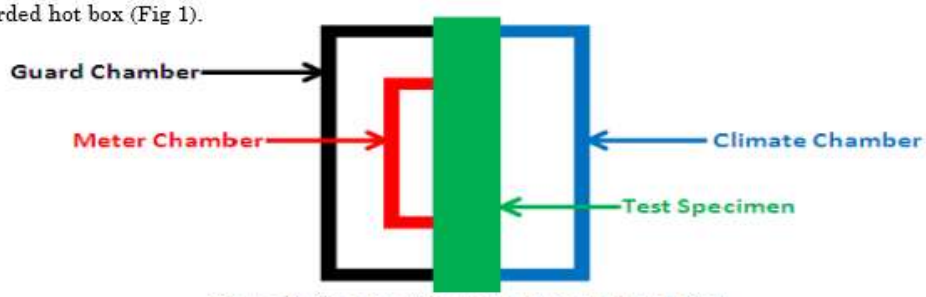


Figure 1: Section View of a Guarded Hot Box

A test specimen is placed between two five-sided chambers. One chamber, called the climate chamber, is cooled to 50°F while the other, called the meter chamber, is heated to 150°F. To eliminate the effect of heat loss through the five walls of the meter chamber, it is surrounded by a guard chamber that is maintained at the same temperature. The 100°F temperature differential between the meter and climate chambers drives heat through the test specimen at a steady rate. This rate can be accurately determined as it is equal to the rate of energy supplied to the meter chamber.

BSE has undertaken the design and fabrication of a Rotatable Guarded Hot Box to increase the industry's understanding of building envelope heat transfer. The test apparatus is fully designed (Fig 2) and construction has begun at the West Madison Agricultural Research Station (Fig 3). Upon completion, the apparatus will be used to test a number of post-frame building wall and roof sections to accurately compare the effects of design choices and construction practices on the overall thermal efficiency of a building envelope.

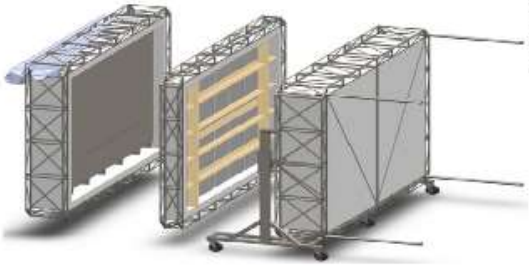


Figure 2: Exploded view of RGHB model (left)

Figure 3: Fabrication progress (right)

Student Update...

Congratulations to BSE Student Scholarship Recipients

The name of the scholarships, the students name, hometown, year in school, and area of study are listed below.

Dick J. and Grace B. Stith Scholarship Fund

Joseph R. Sanford (Soph) Oregon, WI
Natural Resources Engineering

Don S. Montgomery Scholarship

Joseph Michael Nied (Sr) Mayville, WI
Natural Resources Engineering

Christofer Sindunata (Sr) Madison, WI/ Indonesia
Food and Bioprocess Engineering

Ervin W. Schroeder Biological Systems Engineering Scholarship

Jacob F. Hinze (Soph) Shoreview, MN

Gail Edwin and Janice Faye Janssen BSE Fund Scholarship

Katherine J. Berres (Sr) Richland Center
Food and Bioprocess Engineering

Ham Bruhn BSE Scholarship

Brando J. Nigon (Soph) Greenwood, WI
Machinery Systems Engineering

Joshua J. Accola (Sr) Marshfield, WI
Natural Resources Engineering

Kristi M. Freitag (Sr) Birchwood, WI
Natural Resources Engineering

Hjalmar D and Janet W Bruhn Fellowship Fund

Jeffery Mueller (Graduate) DeForest, WI

WDGF — Hjalmar D and Janet W Bruhn Fellowship Fund

Li Shuai (Graduate) China

Lynndon and Norma Brooks Scholarship

Bryan T. Rowntree (Sr) Waterford, WI
Machinery Systems Engineering

Orrin I. Berge Scholarship

Ogden J. Holschbach Reedsville, WI
Machinery Systems Engineering

Machinery Systems Graduate Student Award Fund

Dave Cook (Graduate) Eden, WI

Martin E and Kathleen M Burkhardt Biological Systems Engineering

Evan Price (Jr) Moline, IL
Food and Bioprocess Engineering

Robert H. Willa Meier Scholarship Fund

Kevin M. Zwieg (Sr) Ixonia WI
Machinery Systems Engineering

Brittany J. Noe (Sr) Green Bay, WI
Food and Bioprocess Engineering

Breeyn M. Greer (Sr) Minnetrista MN
Natural Resources Engineering

Roger W. Ambrose Scholarship

Philip Thomas (Sr) Greendale, WI
Natural Resources Engineering

Wisconsin Agricultural Engineer Scholarship

Joanna E. O'brien (Sr) Wauwatosa,WI
Natural Resources Engineering

George Heindl (Sr) Madison, WI
Machinery Systems Engineering

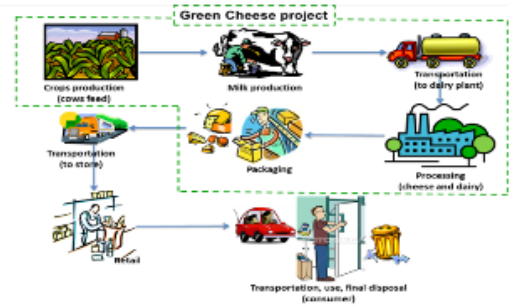
Wisconsin BSE Scholarship

Timothy D. Burhop (Jr) Sheboygan Falls, WI
Natural Resources Engineering

Students and faculty in the Biological Systems Engineering Department greatly appreciate the support of these scholarships.

Student Update...

Aguirre-Villegas researching Green Cheese and Anaerobic Digestion

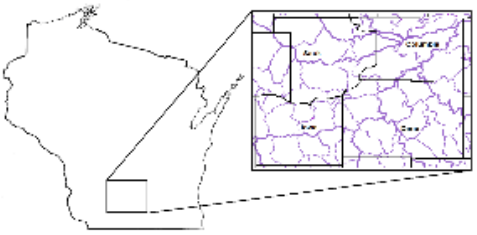


For more than two years Horacio Aguirre-Villegas has been working with Professor Douglas Reinemann on the project "Energy Intensity and Environmental Impact of Integrated Dairy/Bio-Energy Systems in Wisconsin: the Green Cheese Project". The objectives of this project are to investigate the synergies of the dairy and bio-fuel systems in Wisconsin, and evaluate their related energy and greenhouse gas emissions. The results are published in the following webpage: http://fyi.uwex.edu/greencheese/.

During the fall semester, Aguirre-Villegas started working with Professor Rebecca Larson on the project "Impact assessment of anaerobic digestion: economic, environmental, and operational relationships". The objectives of this project are to design a framework for analysis of anaerobic digestion systems, quantify the overall environmental and economic impacts, and identify gaps in data and analysis procedures of this technology. The project involves analyzing different substrates (biomass crops, dairy manure, and food waste), digestate end products (fertilizer substitutes and bedding), and biogas uses (electricity and heat applications). Specifically, the research focuses on evaluating the environmental impacts such as global warming potential, energy intensity, and land use, by using life cycle assessment methodologies.

Continued from page 2 - Life Cycle Assessment

visual modeling platform and grants access to large databases that contain useful data on common industrial processes relevant to the research. These databases, however, contain little information on complex agricultural processes necessary to model biomass production for biofuels. They have worked to create several new processes in GaBi 4 to model crop production and incorporate biogeophysical modeling results from other GLBRC research areas. In addition to this, they have created several new processes in GaBi to model industrial refining steps specific to cellulosic biofuel production, and these processes incorporate unique refining data from other GLBRC research groups. In this way, they are creating a collaborative model that they hope will produce results that more accurately reflect reality than previous attempts to model cellulosic biofuels production.



Map of Wisconsin RIMA, four counties and major watersheds (Reproduced from WIDNR, 2011). Scale refers to magnified region. This figure shows just how little ecological boundaries, like watersheds, line up with political boundaries, like county lines. The aggregation of crop production data at the watershed or county level can significantly alter the GHG emissions of a crop production LCA.

Thus far, they have published and presented research that identifies key areas of variability in such modeling endeavors. One major finding has been that the allocation methodology in the life cycle assessment of biofuels can dramatically impact overall GHG emission and net energy usage results. Another interesting result from the research was that the GHG emissions from crop production modeled at the watershed-level with EPIC data are significantly higher (one order of 10) than the GHG emissions modeled at the county-level with agricultural census data. In the next phases of their modeling project, the endeavor is to integrate more region-specific data on cropping-systems and the mix of electricity and fuel sources. they also look forward to further collaboration with GLBRC researchers involved in the economic, social and biodiversity aspects of cellulosic biofuels production.

Faculty & Staff Update...

Professor Kevin Shinners Gives Wisconsin Farmers an Edge in Growing Biomass

Wisconsin farmers have a leg up in the business of producing biomass, says machinery engineering faculty Kevin Shinners. "Because of Wisconsin's long history of producing hay and forage crops, we have a legacy of tools and knowledge to harvest, handle and process biomass crops," said Shinners.

Professor Kevin Shinners, BSE Machinery Engineer

Wisconsin also is rich in off-farm resources. The state's custom harvesters are experts at harvesting hay and forage crops, and biomass could fit nicely into their businesses. For instance, after they finish chopping corn silage in September, crews could move on to corn stover or switchgrass in October and November, spreading fixed costs over more acres and keeping employees working longer. Although biomass will be an important part of our energy future, the economics of biomass are currently challenging. Profit margins may be slim, so farmers will need to produce as efficiently as possible. Therefore, Shinners' research focuses on improving systems to harvest and handle a variety of biomass crops, including such perennials as switchgrass and reed canarygrass; annuals like sorghum; and the most readily abundant biomass, corn stover.

"At this point, the most cost effective biomass logistics system is unknown, so in my research group we research a wide variety of harvest and storage systems," said Shinners. "For instance we have modified combines to perform `single-pass' stover harvest, including chopped and baled systems. And we have developed several modifications to the combine corn head to windrow the stover during grain harvest. This `two-pass' approach decouples the grain and stover harvest while producing a much higher quality end product than with conventional harvest systems". To see pictures and videos of some of these machines in action, visit http://agriculturalmachineryengineering.weebly.com/

Since biorefineries will need year-round supplies of biomass, storing biomass feedstocks is another important part of the work conducted in the Shinners group. "We have studied both aerobic storage of dry biomass and conservation of moist feedstocks by anaerobic fermentation. There are advantages to both approaches, but moist feedstocks also offer the opportunity to add feedstock value by pretreating prior to storage. Shinners has investigated a variety of chemical and biological amendments applied at harvest or prior to storage that not only add value but improve conservation during storage.

"Although diary will continue to be Wisconsin's dominant agricultural business in near term, biomass has strong growth potential. It is my hope that our research will help that potential become a reality for Wisconsin's agriculture," Shinners concluded.

Does it Pay to Cover Silage Bags?

UW-Extension educator/researcher Ken Barnett looked at the cost of covering silage bags to reduce dry matter loss due to bird damage. A study by BSE's Richard Muck and Brian Holmes quantified DM densities and losses in silage bags. Total DM losses (gaseous, seepage and spoilage) ranged from 0 to 38.2 percent, with an average across all bags of 14.2 percent-similar to a well-managed bunker, notes Barnett, adding, however, if the worst three bags were eliminated from the study, average loss dropped to about 10 percent. Unnoticed bird damage to the top of one of the bags caused spoilage loss of 22 percent. If 10 percent DM loss is used as "normal" loss for a silage bag and 22 percent loss is "extreme" from bird damage, then heavy bird damage could cause a potential increased DM loss of 12 percent. A nine-foot by 100-foot bag can store 67,800 pounds (33.9 tons) of silage DM. A 20 by 100-foot bag costs around $500. It can be reused, but no data on life span is available.

"If it could be used for just five years, then the cost per year would be $100. The value used for corn silage in this example is $54.59 per Continued on page 7

Faculty & Staff Update...

BSE Assistant Researcher M-F; Green Bay Packer Cheerleader on Sundays

BSE Assistant Researcher Zach Zopp is not your typical Green Bay Packer backer. He spends his Sundays in the fall on the sideline of Lambeau Field cheering for the Pack.

Zach Zopp cheering on the Pack in Lambeau

"While I would love for everyone in Wisconsin to know about the Green Bay Packer Cheerleaders, I am grateful that we are sort of a Packer secret," said Zopp. "A secret that allows me to continue to be a part of a hybrid UW-Green Bay/Green Bay Packer cheer team even after I graduated from UWGB in 2008."

As a collegiate co-ed team Zopp and the other cheerleaders perform many of the same acrobatic maneuvers and pyramids on Lambeau Field that you would see from the cheerleaders at Camp Randall during a UW-Madison Badgers football game. In his six years as a Packer cheerleader Zopp has been part of some of the most thrilling and exciting games in recent Packer history, but nothing "so far" has compared to last season's Super Bowl Championship year. A year, in which Zopp was able to briefly hold the Lombardi Super Bowl XLV Trophy and see that moment broadcast on ESPN Sports Center. "Here's hoping for several more Super Bowl runs in the future," said Zopp. "GO PACK GO."

Emeritus Picked the Badger FB Season Ticket Holder of Game

Leonard Massie

Leonard Massie has been a Wisconsin Football season ticket holder dating back to his days as undergraduate student at UW-Madison. He earned two separate Bachelor degrees in both agricultural engineering (1960) and civil engineering (1961), eventually staying on to complete his Masters work in agricultural engineering (1963). He later earned his Ph.D. in civil and environmental engineering at UW-Madison in 1975.

It was at UW that Leonard first met his wife Marianne. After meeting at a blind date fraternity party in the fall of 1958, they began attending football games together throughout the course of the rest of their college careers. As the only girl to have ever agreed to a date with him twice, they wed in 1960. Game day has and will always continue to be a way of life in the Massie family as three of his four children attended UW, including his son Tim who played tuba in the band during the 1980s. As a student, Massie's Camp Randall experience wasn't complete until the band wrapped up the 5th quarter. Although his degrees and education have long been since completed, the Agricultural School still remains a fixation in Massie's game day routine on fall Saturdays. CALS hosts a tailgate celebration once a year. It is there that he has been able to brush up on his polka skills, polishing his moves in preparation for "Roll out the Barrel".

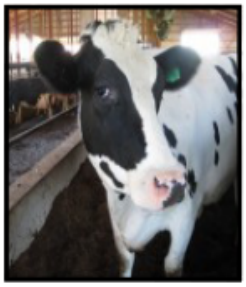
Massie now attends games with his grandson and granddaughter to ensure that the enthusiasm for attending continues on into the next generation. Nominated by his daughter Jill, as part of being named the Season Ticket Holder of the Game, Massie received a reserved parking space and tailgate spread courtesy of Oscar Mayer. In addition, he was recognized on the field during the November 26 game vs. Penn State.

Continued from page 6 - Cover Silage Bags

ton at 65 percent moisture or $155.98 per ton on a dry matter basis. A 'normal' dry matter loss of 10 percent would result in a loss in value of the corn silage of $528.78," he discusses. "An 'extreme' dry matter loss of 22 percent would result in a loss in value of the corn silage of $1,163.32. The difference in value of the lose corn silage between the 'normal' and 'extreme' corn silage is $634.54. Thus, the silage bag cover valued at $500 could have covered its purchase price in the first year in a case of 'extreme' bird damage." Barnett says the increased value of corn silage due to high grain prices will warrant precautions not previously economical with lower-priced grain.

Faculty Update...

New Milk Quality Website Launched by Professor Doug Reinemann



BSE professor and director of the UW Milking Research and Instruction Lab, Doug Reinemann, launched a new website at http://milkquality.wisc.edu/ offering updated information and decision-making tools for farmers to manage herd health and milking systems.

"Udder health and milking management have always been regarded as important factors in achieving high milk production, efficient milking and excellent milk quality," said Reinemann. "When you have milk price premiums reported to be the largest financial opportunity related to milk quality, there are certainly incentives to manage for it every day in the parlor."

Reinemann was joined in this project by Pamela Ruegg, Dairy Science professor and Extension milk quality specialist, to help Wisconsin dairy producers improve milk quality. The website is not just for farmers. Resources are also available for veterinarians, extension agents, researchers and industry representatives. "Producing high-quality milk is not a one-person job. It takes a team-based approach to be able to evaluate, manage and meet milk quality goals. Including extension and agricultural professionals helps farmers achieve goals more rapidly and increase farm income," said Ruegg.

Reinemann and Ruegg have collaborated before to develop extension programs and publish academic papers focused on herd health and milking management, the UW Milk Quality Website represents the first time these resources are available in one place. "This is an opportunity to share our research, as well as the latest science-based, peer-reviewed information on dairy production from around the world. We are responding to requests for better accessibility," said Ruegg. "The website has now become a comprehensive resource for dairy producers to achieve milk quality success. It's a one-stop-shop." The website will be updated weekly with featured articles and news releases covering various topics on milk quality. Spanish-translated educational materials will also be available.

Scott Sanford Authors New and Revised Energy Publications

There are four new and one newly revised publications on greenhouse energy use and efficiency available from the University of Wisconsin Extension authored by Scott Sanford from the Rural Energy Program. The publications cover general energy efficiency for greenhouses, energy conserving curtain systems, heating systems, the use of biomass energy for greenhouse heating and a case study looking at the biomass heating options for two different size greenhouses and which options make economic dollars and cents. The publications can be downloaded for free at http://learningstore.uwex.edu/Energy-Conservation-C29.aspx.

Reducing Greenhouse Energy Consumption: An Overview - A3907-01
Greenhouse Unit Heaters: Types, Placement, and Efficiency - A3907-02
Using Curtains to Reduce Greenhouse Heating and Cooling Costs - A3907-03
Biomass Energy for Heating Greenhouses - A3907-04
Biomass Heating in Greenhouses: Case Studies - A3907-05

The publications were made possible by a grant from the North Central Sustainable Agricultural Research and Education program (USDA).

NORTH CENTRAL SARE Sustainable Agriculture Research & Education

Alumni Update...

'74 Construction Administration Graduate Honored by


Richard M. Lynch

"I am truly honored and blessed to have received such a great start. My education here in Ag Engineering was a solid foundation for me and my career," said '74 Construction Administration graduate Richard M. Lynch. "Along with enjoying what I do for a living, I have also been able to give back to the community over the years as a volunteer."

BSE faculty, staff and students held a reception in the Ag Engineering building on October 14th to honor and celebrate with Lynch who was presented a 2011 Distinguished Achievement Award during the 64th annual Engineers' Day dinner banquet at the Monona Terrace Convention Center. In a distinguished career that spans nearly 30 years with Madison construction firm J.H. Findorff and Son, Lynch has overseen projects ranging from the Monona Terrace Community and Convention Center and Overture Center for the Arts to the American Family Children's Hospital and Epic Systems campus.

One of Wisconsin's leading builders, Findorff annually completes more than $300 million in construction projects. Lynch started his career with the company in 1984 as a project manager and became an owner and vice president in 1992. He was named executive vice president in 1997 and president in 2002, a role he still fills today. Under Lynch's leadership, Findorff has remained at the forefront of cutting-edge construction processes, equipment and technology. Additionally, the company is committed to using green building practices and includes on its staff Leadership in Energy and Environmental Design (LEED) accredited professionals. As part of its corporate vision, Findorff strives to be a leader in sustainable construction both on and off the job site. In addition to numerous "best contractor" awards, the company also has received many accolades for its environmental excellence.

Beyond Findorff, Lynch contributes his expertise to such organizations as the United Way of Dane County, Downtown Madison Inc., the Madison Community Foundation, the Madison Chamber of Commerce, National W Club, and others. He is past president and an active committee member of the Association of General Contractors of Wisconsin, serves on the UW-Madison Department of Civil and Environmental Engineering advisory board, and is a speaker in various classes at the university. A Prospect Heights, Illinois, native, Lynch worked during high school as a laborer for his father — an engineer, contractor and developer. Lynch entered UW-Madison with medical school in mind, but learned his strongest interests were in architecture and construction. He earned his bachelor's degree in construction administration in 1974 from what now is the Department of Biological Systems Engineering and, before joining Findorff, spent the first nine years of his career working for a smaller family-owned contractor. In his spare time, Lynch enjoys swimming workouts, golf, reading and anything outdoors. He has been married to his wife, Mary, for 37 years and has three children: Courtney, 33; Ryan, 31; and Sean, 29.

Paul Meyer - recently accepted a new position as an Engineering Project Team Lead on the Torque Converter Design Team within Caterpillar's Advanced Component and Systems Division. In this position he is the team lead for a group of five engineers who concept and design torque converters for medium and large Wheel Loader, Wheel Dozer, Compactor and Wheel Skidder applications. He is required to lead interactions with customers, manufacturing, and suppliers to insure that: customer requirements are clearly understood, the design will be capable and reliable, reliability and cost targets are met, and that development timelines adhered to. As a Team Lead, Meyer must also provide guidance, coaching, and direction to the engineers to insure that the team keeps up-to-date on changing processes and technologies.

Prior to taking this job, he was an Application Engineer in Caterpillar's Defense and Federal Product's Truck Engine Group for three years. His role was to provide power solutions for combat and tactical vehicle manufacturers. He was required to be the interface between customers, OEMs and suppliers on **Continued on page 10**

Alumni Update...

Continued from page 9 - Paul Meyer
all engineering integration issuer relative to power train. In addition, Meyer was required to help build relationships and assist in identify business opportunities for expanding Caterpillar's product offerings (engines and transmissions) to foreign and domestic military OMEs. This required domestic travel up to 25 percent.

William C. Baum Jr. (Skip) - is a registered engineer in five states including Wisconsin, Minnesota, South and North Dakota, and Montana specializing in wood frame construction design.

Naomi Bernstein (formerly Uhlenhake) - Naomi married Andy "Bernie" Bernstein (ASABE & 1/4 Scale Member 2006-2009) on June 10, 2011 in Burlington, WI with five BSE graduates in the wedding party and many more in attendance, they want to thank BSE for giving them a wonderful group of friends and family.

Alex Charvat - This 2000 Ag Engineer MS Grad is an engineer by trade but his hobby is mastering weapons. As a structural engineer, he understands and can adapt to all the intricacies of nearly every weapons system. Charvat was one of 16 marksmen featured during Top Shot Season 3 on History Channel. He was the last person eliminated prior to the finals. View his last competition and a follow-up interview at http://www.youtube.com/watch?v=ZSbGjjdxAgk.

Alex Charvat

"It was a fun experience, though I didn't come home any richer because of it," said Charvat. "I guess I'll keep the engineering job, but I like to shoot because I like the mechanics of it. It's like a big puzzle." His passion for shooting runs so deep that his oldest daughter is named after Annie Oakley. A country boy at heart, Charvat lives with his family in the woods and doesn't have cable, so he'd never seen a single episode of Top Shot. But his ROTC background and hunting experience gave him an edge over most of the competition.

While an undergrad at UW-Madison, Charvat was elected Team Captain of the UW Army ROTC Rifle Team three times. He also worked as an Engineering Technician under the supervision of Drs. Dave Green and Jerry Winandy in the Engineering Properties of Wood Group at the USDA Forest Products Lab. Between receiving his undergrad degree and entering his masters program, Charvat worked as a forester in North Bend, Oregon for the Menasha Corporation. After receiving his masters, Charvat worked as an engineer for log builders in Plymouth, WI until leaving to set up his own company, Alexander Structures, in 2002 in Conifer, Colorado. Charvat builds cabins through 8,000+ square feet residential dream homes. He has experience with both full and half-log designs and all national building codes. He is a member of the ASCE and the Log Home Council where he is the former Chairman of the Log Grading Committee, and he is the Engineer of Record on the Log Home Council's Log Grading Program. Alex has also built his own log cabin and his own 3000 sq.ft. log house - performing all labor from site layout through finishing. Because of his experience, plans are engineered for what works on the job site, not what looks good on paper. Charvat received his BS-Natural Science degree in May 96.

Thank You

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We sincerely wish to thank our alumni and friends who have generously supported the College of Agricultural and Life Sciences Department of Biological Systems Engineering. Your gifts today are more important than ever as the University faces challenging budget constraints. Gifts made to the Department of Biological Systems Engineering help us with scholarship, facilities improvement, endowed professorship and graduate fellowships, and carry on our tradition as leaders and innovators in the biological systems engineering field.

An annual household gift of $500 or more qualifies you and your spouse for membership in the College of Agricultural and Life Sciences Dean's Club. As a member of the Dean's Club you will receive special invitations to the Dean's Football Brunch held in the Fall, the annual Dean's Club Recognition program in May, as well as periodic mailings about the College and a Dean's Club Pocket Calendar. An invitation to join the prestigious Bascom Hill Society is extended to those who provide support of $50,000 or more to the department or to a specific project or program of their choice. You can pledge your commitment over a 10-year period, provide for a gift in your will, or give a gift of annuities or appreciated stock. If you have specific questions about giving, please contact Barbara McCarthy at the UW Foundation (Phone: 608-265-5891; e-mail: barb.mccarthy@supportuw.org).

Department of Biological Systems Engineering Funds

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Alumni Update

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