

ASABE Quad City Section Newsletter

ASABE - The Society for Engineering in Agricultural, Food, and Biological Systems

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Winter

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From the Chair Hi everyone! I can not believe that my year of being Chair for the ASABE Quad City Section is almost over. It has been a great run and I want to thank my Executive Committee for helping make this year a very successful one so far.

The Winter Meeting in January was a great success. We had 39 people attend the meeting and the speakers and foods were great. The meeting was held at the Viking Club and they did an excellent job as usual. I want to give special thanks to Eric Viall and Joel Werling, our Program Committee, for lining up another great meeting. Our upcoming Spring Awards Meeting is also shaping up to be an excellent meeting. The Spring Meeting is a great time to recognize the individuals that are doing outstanding things inside and outside of work. Over the years, our Section has produced numerous award recipients at the local and national levels. The Quad City Section of ASABE is very luck to have such great members associated with it. Even if you don't get formally recognized at the local or national level, I want to thank everyone for continuing to show a high interest in our ever changing fields. It is

because of folks like yourselves, the industry is continually growing leaps and bounds.

I am excited to announce that the Executive Committee has elected Joel Werling of the John Deere Seeding Group to serve as the this year's Chair-Elect for the Quad City Section. The Executive Committee and I felt that Joel is more than equipped to serve as the Chair next year for our Section. He is not only currently serving on the AMC Planning Committee but he is also still very active in helping plan the local Section events. So it is with my deepest gratitude that I want to thank Joel for all his efforts this year.

Enjoy the rest of the year everyone. We have a couple more exciting events coming up besides the Spring Meeting. We are planning a hockey game and a tour to name just a couple. So be sure to stay tuned and enjoy the benefits of being a member of one of the most active engineering organizations in the Quad Cities.

As always, if you have a friend, neighbor, or family member who is interested in our meetings or ASABE in general, invite them along! If you have any ideas for speakers, themes, or new projects, please let us know. The Executive Committee and I try to serve as your voice for the Section. We are always striving to provide topics and events that meet your needs. We are always interested in thoughts and ideas from our Section members. Thanks! - Eric Windeknecht, 2009-2010 Section Chair

Winter Meeting Review The 2010 ASABE Quad City Section Winter Meeting was held at the Viking Club in Moline on January 21st with 39 in attendance. The meeting began with two concurrent technical sessions.

In one tech session, Harlon Neumann with the Genesis Systems Group in Davenport (see <http://www.genesis-systems.com/>) discussed several recent developments in "Robotic Technology". Founded in 1983, Genesis is the largest builder of robotic arc welding systems in North America. Advances in modeling and simulation have enabled not only a complete visualization of the parts being assembled by welding but also checks for interference between the robot, the parts and the welding fixture. The addition of vision capabilities provides operation control, the ability for the robot to automatically locate and pick up parts from conveyors and the capability to sense where another robot is located in cases where two robots work together to produce an assembly.

Josh Shircliff, an Application Engineer with Sauer Danfoss in Ames, Iowa, discussed European Union Safety Integrity Level (SIL) Legislation Compliance Challenges. Recent trends to GPS based automatic steering and higher road speeds have led to increased concern about the consequences of the failure of agricultural vehicle steering systems. The European Union's Machinery Directive 2006/42/EC, which became effective on December 29, 2009, mandates a Risk and Hazard Analysis on all vehicle functions. Such an analysis must be done by the vehicle's OEM using a procedure defined in ISO 25119. Sauer Danfoss now offers a steering valve that addresses the challenges presented in complying with this legislation – see <http://www.sauer-danfoss.com/Products/Steering/ElectroHydraulicSteeringComponents/OSPE/index.htm> for more details.

In the other tech session, T. J. Taylor, Director of Global Technical services with Drives, LLC, described "Documented Savings with Innovative Products" in a number of diverse industries: packaging, forest products, food processing, mining, automotive, and primary metals. His examples showed that the additional cost of higher performance chain could be more than offset by

savings in reduced downtime or by extended life of the chain. The challenges of operating without lubrication in food processing applications, and of operating in even mildly corrosive environments were unfamiliar to a novice metallurgist. The failure of hardened conveyor chain for the Denver International Airport while still in its shipping cartons, due to exposure to calcium chloride snow melter, illustrated the challenges of material selection for even a seemingly benign environment.

Neil Feczko, Account Manager for Loctite Division of Henkel Corporation, described the latest advancements in the thread locking products for which Loctite is well known. Neil began with a short introduction to the chemistry of anaerobic adhesives: they polymerize in a thin (.020 inch max) film in the absence of air in the presence of an active metal. The familiar red bottle is air permeable to prevent polymerization in storage. Metals that can't oxidize, such as stainless steel or anodized aluminum, may need a primer to initiate activation. Heat aging can increase bond strength by 100%. New, higher temperature (450 F) and oil-tolerant thread lockers are available and in development. Neil also described a line of two-part structural adhesives and several applications. These products utilize the entire contact area of mating surfaces to hold structural elements together, rather than creating stress concentrations like conventional fasteners. Application include bonding the deck to the hull of Donzi power boats, body construction on Thomas school buses, and internal locking tracks in Group Hesse aluminum semi-trailers.

The after-dinner speaker, James Sears, Executive Director of the Quad Cities Manufacturing Lab (see <http://qcml.org/Home.aspx>), spoke on Laser Additive Manufacturing for Improved Wear and Performance. As opposed to machining operations, laser additive manufacturing uses a laser to add powder metal to an existing part by driving a numerically controlled manipulator to reproduce the required shape via sequential laser-directed metal-powder deposition passes. This technique has been developed especially for improving the wear life of expensive metal forming tools. However other applications include providing wear resistant coatings for high maintenance parts such as the bed

knife in golf course mowing equipment. Biomedical applications also are being explored in the joint replacement area.

Section Scholarships – The Quad City Section will again be offering two \$ 500 scholarships this year. Scholarship applications are available on the Section's website at <http://www.qcesc.org/ASAE/Awards.htm>. High school seniors as well as college students are eligible to apply. Alumni, be sure that your alma mater is represented by sending a copy of the application (or the link) to the Preprofessional branch at your school. The scholarship winners will be invited to our Quad City Section Spring Meeting on March 23rd. Remember, applications are preferred in Word format and must be postmarked by March 11, 2010. – Cody Freehill, Scholarship Chair.

Section Awards – Help recognize one of our Section's outstanding members by making a nomination for the Section's Outstanding Engineering Achievement Award, Young Member of the Year and/or Member of the Year Awards. Nomination forms for these awards are available at the Section's website at <http://www.qcesc.org/ASAE/Awards.htm> with a due date of March 1. Past recipients of these awards are listed at <http://www.qcesc.org/ASAE/LocalRecognitionMarch2009.pdf>. This year's recipients will be recognized at the March 23rd Spring/Awards Meeting.

2010-11 Section Officers Needed - The Nominating Committee is looking for smart, energetic, professional members like you. We need leaders to provide your Section members with quality programs and services next year. Offices open are Chair-Elect, Treasurer, Secretary and three Nominating Committee positions. If you would like to serve as an officer or know of a qualified person to consider, let one of the members of the Nominating Committee know. Serving as an officer of the ASABE Quad City Section is an excellent way to develop your leadership skills while working with your peers to promote the engineering profession.

Nominating Committee Members can be reached at:

Nathan Vandike, Chair
John Deere Harvester Works
Ph. 309-765-2027
VandikeNathanR@JohnDeere.com

Will Corman
John Deere Harvester Works
Ph. 309-765-2048
CormanWillD@JohnDeere.com

Todd Van Hal
John Deere Harvester Works
Ph. 309-765-2098
VanHalToddE@JohnDeere.com

Nominees will be announced at the March 23rd Section Meeting.

Closing Notes – Don't forget to cast your ballot in the ASABE national election. Section Member and Past Chair Chad Yagow is one of the candidates for the Board of Trustees. ASABE is using electronic voting this year for the first time with voting closing on March 1st. See <http://www.asabe.org/2010candidates.pdf>

Section Member and Past Chair Mark Bowers is one of ASABE's 16 nominees for the "New Faces of Engineering" recognition program associated with National Engineers Week Feb. 14-20. See <http://www.asabe.org/pr/eweek/faces/index2010.html#bowers> and <http://www.eweek.org/Home.aspx>

Marlin Weakly, a former ASABE member and the Section's 1955-1956 Chair, passed away on December 21 at age 85. An agricultural engineering graduate of the University of Missouri, Marlin was a retiree of the John Deere Harvester Works.

As of November 25th, the Section had balances of \$ 2,029.18 in its checking account, \$ 442.41 in its savings account and two certificate of deposit's valued at a total of \$ 4,581.10 .

Theo Brown, one of the charter members of the Quad City Section when it was formed 60 years ago, was one of John Deere's early engineers and a prolific inventor with over 100 patents (see

<http://theo.wpi.edu/Biography/>). His diaries were donated to his alma mater, Worcester Polytechnic Institute, which has made some of them available online - see <http://theo.wpi.edu/Collection/>. This latter page has a search capability so that you can find items of interest. The diaries are a great resource for following Deere product development, particularly of the two cylinder tractors.

Upcoming Events - Check the Section's web site at <http://www.qcesc.org/ASAE> for the most recent information on the Section and the following events:

February 14-20, 2010

National Engineers Week – see <http://www.eweek.org/Home.aspx>

February 19, 2010

Quad City Engineering and Science Council Engineers Week Banquet – see <http://www.qcesc.org/banquet.htm>

February 24, 2010

Quad City Mallards Hockey Outing (game starts at 7:05 pm), iWireless Center, Moline.

March 1, 2010

Deadline for Quad City Section local award nominations and ASABE national election voting.

March 11, 2010

Deadline for Quad City Section scholarship applications

March 12-13, 2010

Engineering and College of ACES Open House at University of Illinois – see <http://eoh.ec.uiuc.edu/> and <http://aces.illinois.edu/ExplorACES/>

March 17-20, 2010

Gathering of the Green (John Deere enthusiasts), River Center, Davenport. See <http://www.gatheringofthegreen.com/>

March 23, 2010

Quad City Section Awards Meeting, Viking Club, Moline.

April 20, 2010

Quad City Section Spring Tour

May 3-5, 2010

Agricultural Machinery Conference, Crowne Plaza Five Seasons Hotel, Cedar Rapids, Iowa. See <http://www.amc-online.org/>

ASAE Quad City Section Officers 2009-2010

Chair:

Eric Windeknecht
John Deere Seeding Group
Ph. 309-765-7591
WindeknechtEricD@JohnDeere.com

Chair-Elect:

Joel Werling
John Deere Seeding Group
Ph. 309-765-2227
WerlingJoelC@JohnDeere.com

Past Chair:

Mark Bowers
John Deere Harvester Works
Ph. 309-748-2025
BowersMarkD@JohnDeere.com

Secretary:

Lindsey Dietz
John Deere Harvester Works
Ph. 309-748-2015
DietzLindseyA@JohnDeere.com

Treasurer:

Curt Elpers
John Deere Harvester Works
Ph. 309-748-2081
ElpersCurtA@JohnDeere.com

Nominating Committee:

Nathan Vandike, Chair
John Deere Harvester Works
Ph. 309-765-2027
VandikeNathanR@JohnDeere.com

Will Corman
John Deere Harvester Works
Ph. 309-765-2048
CormanWillD@JohnDeere.com

Todd Van Hal
John Deere Harvester Works
Ph. 309-765-2098
VanHalToddE@JohnDeere.com

Local & National Awards:

David Smith
Ph. 309-755-8934
dave.smith8633@sbcglobal.net

Communications:

Marilyn Dumolien
John Deere Seeding Group
Ph. 309-765-7699
DumolienMarilynA@JohnDeere.com

Community Outreach:

Open position

Continuing Education:

Open Position

Great Lakes Regional Conference Liaison:

Brad Yanke
John Deere Harvester Works
Ph. 309-765-2111
YankeBradleyK@JohnDeere.com

Membership:

Will Corman
John Deere Harvester Works
Ph. 309-765-2048
CormanWillD@JohnDeere.com

Newsletter Editor:

David Smith
Ph. 309-755-8934
dave.smith8633@sbcglobal.net

Program:

Eric Viall
John Deere Harvester Works
Ph. 309-765-2044
ViallEricN@JohnDeere.com

Joel Werling
John Deere Seeding Group
Ph. 309-765-2227
WerlingJoelC@JohnDeere.com

QCESC Liaison:

Mark Bowers
John Deere Harvester Works
Ph. 309-748-2025
BowersMarkD@JohnDeere.com

Scholarship:

Cody Freehill
John Deere Harvester Works
Ph. 309-765-2282
FreehillJustinC@JohnDeere.com

Suppliers Coordinator:

Clifford Pim
H&H Sales
Ph. 563-391-3900
cpim@hhsales.net

Young Professionals:

Kent Brown
John Deere Harvester Works
Ph. 309-765-2224
BrownKentS@JohnDeere.com

Social Hour Sponsors

The following sponsors are generously providing the beverages for the social hours at our meetings this year.

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Our thanks to Clifford Pim for organizing this support activity.