



AETC 2018

February 12-14, 2018

Seelbach Hilton • Louisville, Kentucky

AETC 2018 Meeting Agenda

Monday, February 12

7:00AM-5:00PM

Registration Opens

Location: Medallion C, D, E, F

7:30AM-8:00AM

Conference Kick Off

Location: Medallion C, D, E, F

8:00AM-6:00PM

COMMITTEE MEETINGS

Location: Mezzanine Ballroom A/B, C/ D

8:00AM-11:00AM

CONTINUING PROFESSIONAL DEVELOPMENT 1 & 2

CPD#1 – *Oil Sealing Technologies for Agricultural and Construction Equipment*

Location: Medallion A

Instructor: Jason Huff – Design Engineer and Steve Huston – BDM, ESP International

The mechanical and hydraulic systems on today's agricultural equipment are consistently exposed to some of the harshest environments and conditions. When the components in these systems are not properly sealed, ingress of abrasive contaminants and lubricant/working fluid leakage will lead to inevitable component wear and system degradation. The downtime and repairs associated with this damage cost valuable time and money, resources that are constantly in high demand. Specifying the correct seals from the beginning can dramatically reduce the amount of lost productivity. This session will highlight the design, manufacture, and use of various sealing technologies including O-rings, radial shaft seals, and mechanical face seals. Specific topics for each seal group include the following: physical properties, gland design, and failure modes of O-rings; profile selection, shaft design, installation guidelines, and storage of radial shaft seals; as well as profile options, material selection, and installation guidelines for mechanical face seals.

COST: \$50.00

CPD#2 – Austempering as a Heat Treatment Solution

Location: Medallion B

Instructor: Steve Metz, Applied Process

Are you looking to reduce cost and weight from your metal part design? Are you trying to optimize strength from the materials you've specified? Are you confused by the various heat treatment options available? If you can answer yes to any of these questions, you will benefit from this educational presentation. This CPD will begin with a discussion of the various heat treatment processes used in the metals manufacturing industry and their respective property advantages. After this general introduction, the presentation will focus on austempered ductile iron and steels. Topics presented will include a discussion on the fundamentals of quality ductile iron production, engineering properties, and wear resistance characteristics. Examples of austempered components from across all industries will be shown. Please plan to include this CPD in your AETC plan.

COST: \$50.00

8:45AM-11:30AM

TOUR

Louisville Mega Cavern Tram

Please arrive 15 minutes prior to departure. Bus will depart at 9:00AM from the main entrance of the Seelbach, 500 S. 4th St.

The Historic Tram Tour will take you on an underground adventure rich in history, geology, mining, recycling, green building technology, and just simply HUGE in scale!

The man-made cavern spans under a number of roadways above and is part of 17 miles of corridors located beneath the city of Louisville, Kentucky. It's a great tour for all ages—whether you want to learn about science and history or simply want to see what a giant man-made cavern of this magnitude looks like!

Louisville MEGA Cavern is an all-weather attraction. The temperature inside the cavern hovers at a comfortable 58 to 60 degrees year round.

COST: \$25.00-includes transportation

11:00AM-12:00PM

Student Design Presentations – Electronic Poster Presentations

Location: Medallion C, D, E, F

12:00PM-1:30PM

Luncheon w/Keynote Speaker: Dennis J. Slater, AEM President

[AEM and ASABE: A History of Cooperation](#)

Location: Grand Ballroom – 10th Floor

AEM and ASABE have had a long history of cooperation. Mr. Slater will discuss this history as well as highlight some exciting new collaborations being planned between the two organizations.

1:30PM-3:15PM

TECHNICAL SESSION 1

[TS#1 – Shortline/FEMA Entrepreneurial](#)

Location: Grand Ballroom – 10th Floor

Moderator: Mark Dilts, CNH Industrial

Introductions

1:30PM

1:35PM	<i>Managing a Small Implement Company in the Era of Online Shopping</i> Lance Ireson & Ed Ireson, Wright Fence Mower, LLC
2:00PM	<i>Education, Experience, Engineering, Entrepreneurship: What Makes a Small Business</i> Ron Lubke, Quality Metal Works
2:25PM	<i>Surefire Ag – Where Engineering comes 2nd</i> Josh Wolters, Surefire Ag, LLC
2:50PM	<i>Believing in a Dream</i> Marion Calmer, Calmer Corn Heads
3:15PM-3:30PM	BREAK
3:30PM-5:30PM	TECHNICAL SESSIONS 2 & 3
	<u>TS#2 – Innovations in Size Reduction and Particle Technology</u> Location: Medallion Ballroom A Moderator: Shahab Sokhansanj, University of British Columbia Particle size has emerged as a key physical properties of biomass. Size, shape and geometry of particles are major parameters determining the flowability of biomass and uniformity of conversion processes. The control of size requires precision in the length of cut and information of the cut particle. This session reviews the latest developments in equipment, instrumentation, particle modeling and flows.
3:30PM	Introductions
3:35PM	<i>New Industrial Developments in Precision in Comminuting Biomass for Uniformity in Size and Flowability</i> Jim Dooley, Forest Concepts
4:05PM	<i>Introduction to EDEM</i> Callum Bruce & David Boush, EDEM Simulation
4:35PM	<i>Calibration and Validation of EDEM for Handling Corn</i> Mehari Tekeste, Iowa State University & Kurt Rosentrater, Iowa State University
5:05PM	<i>Development of a Simple Equation to Estimate Power Requirement for Biomass Comminution</i> Ladan Jafari-Naimi & Shahab Sokhansanj, University of British Columbia
	<u>TS#3 – Research and Education in Precision Agriculture and Data Management</u> Location: Medallion Ballroom B Moderator: Michael Sama, University of Kentucky Agriculture is in the early stages of a data revolution that is poised to make the farm of the future a data-driven system. Precision agriculture and data management are key components of the agricultural data revolution and driving forces for new technology development and production practices. This session highlights research and education efforts of faculty from universities across the county.
3:30PM	Introductions
3:35PM	<i>Precision Ag Data Management Education/Extension</i> Dr. Joe Luck, University of Nebraska-Lincoln

- 4:05PM ***Thermal Infrared Sensing Aboard a Small Unmanned Aircraft for In-Season Crop Health Monitoring***
Dr. Ajay Sharda, Kansas State University
- 4:35PM ***Developing Precise Nutrient Recommendations: Gaps Between Practice and Research***
Joshua McGrath, University of Kentucky
- 5:05PM ***The Effect of Cotton Emergence Based on Seedling Vigor and Planter Downforce***
Dr. Wesley Porter, University of Georgia
- 5:30PM-6:45PM AETC 2018 Special Presentation
Location: Medallion A
Hitch Yourself to Success
Brian Olson, President, Power Pin Inc
This special session is an opportunity to take a deeper look at a passion for winning and secrets for success. Brian's story will impact your view of life and provide a positive influence to help you understand what is important in your journey. The basis of this presentation is Brian's journey from his early years on a ranch and farming in southwest Saskatchewan to his current role as President of his successful company, Power Pin Inc.
Today Power Pin Inc. supplies Drop pins to most large tractors over 150 HP and his company ships tractor drawbar hitches to USA, Brazil, Germany, Russia, England, France and Italy. Power Pin has been a supplier to Deere Waterloo, CNH Racine, CNH Fargo, Versatile and AGCO for over 20 years. Over 200 implement manufacturers use the cast ring hitches that he designed. Six years ago his company developed and introduced a new successful product line of automatic locking truck and trailer hitches for on road use.
Brian became active in ASABE standards development for the Tractor Implement Interface in the early 1990's. His inputs have expanded to include ISO standards as well as the Safety Chain Standard.
With 37 patents in process and multiple successful product lines he shares the attributes for success. He comes from an era of riding horses to today's 600 horsepower tractors and 2000 bushel grain carts. In his 30 years of developing successful product lines in various industries he will share the ingredients for success that every participant can use in their career and their life.
- 7:00PM-9:00PM Student / Industry Dinner and Bowling
Location: The Sports & Social Club, 427 South 4th Street
Preregistration required: \$30 industry, \$15 student

Tuesday, February 13

- 7:00AM-5:00PM Registration Opens
Location: Medallion C, D, E, F
- 8:00AM-6:00PM COMMITTEE MEETINGS
Location: Mezzanine Ballroom A, B, C, D, E
- 7:30AM-10:00AM TECHNICAL SESSIONS 4, 5

TS#4 – Emerging Standards

Location: Medallion Ballroom A

Moderator: Scott Cedarquist, ASABE

This session will overview key standards development activities and regulations pertaining to agricultural equipment. A selection of timely topics will be included which cover priority North American and international activities.

8:00AM

Introductions

8:05AM

US Regulatory Issues Associated with Agricultural Equipment

Nick Tindall, Association of Equipment Manufacturers (AEM)

8:15AM

The Shocking Future of Electric Tractors

Arby Bernt, Solectrac

8:30AM

Where will the Braking Standard Stop?

Ron Stoltenberg, AGCO

8:50AM

S318: A Look Under the Hood...

Karl Klotzbach, CNH Industrial

9:00AM

UAVs vs. Tractors: Both Useful Around the Farm

Harold Thistle, USDA FS

9:10AM

We are no Longer in the Dark: Possible Future Revisions to ASAE S279

Ed Brokesh, Kansas State University

9:30AM

Fun with ~~Flags~~ the SMW: Lighting and Marking Around the World

Eric Smith, John Deere

TS#5 – Lighting Technology Trends and Application

Location: Medallion Ballroom B

Brian Huenink, John Deere

LED-based lighting technologies have opened many doors to future lighting solutions and challenges. LEDs have a packaging flexibility, efficiency improvements, control possibilities, and communication opportunities that were not previously available in incandescent or halogen based lights. This session will explore some new applications and how to address associated challenges when designing light systems both in vehicle and growing light scenarios.

7:30AM

Introductions

7:35AM

Future Off-road Lighting

Kirk Knobel, Hella Inc.

8:05AM

Tools for Virtual Verification of Lighting

Kishor Ramaswamy, Optis North America

8:35AM

LED Grow Lights

Dr. Mark Lefsrud, McGill University

9:05AM

Please join the Standards session in progress next door in Medallion Ballroom A to continue the lighting session.

10:00AM-10:15AM

BREAK

10:15AM-12:00PM

TECHNICAL SESSIONS 6, 7

TS#6 – Supplier Showcase

	Location: Medallion Ballroom A
	Moderator: Scott Frost
10:15AM	Introductions
10:20AM	<i>A General Overview of Thermoplastics in Friction and Wear</i>
	Laura Parr, Allegheny Performance Plastics
10:50AM	<i>Manufacturing Hydraulic Hose Process</i>
	Scott Frost, Air-Way Global Manufacturing
11:10AM	<i>Straw Claw™ Straw Chopper Knife</i>
	Andy Theisen, Kondex
11:30AM	<i>Technically, the Correct Way to Thread a Fitting</i>
	Scott Frost, Air-Way Global Manufacturing
	 <u>TS#7 – Sensor Technology</u>
	Location: Medallion Ballroom B
	Moderator: Steven Talsma, Vermeer
10:15AM	Introductions
10:20AM	<i>Time of Flight LIDAR – A Foundational Technology for Collision Avoidance, Navigation and 3D mapping</i>
	Dr. Helge Hornis, Pepperl+Fuchs
10:35AM	<i>Application of Perception Technologies in Agriculture</i>
	Darcy Cook, JCA Electronics
10:50AM	<i>Autonomous Sensing Technology</i>
	Brian Ferguson, SICK
11:25AM	<i>The Challenge of Replacing Human Perception</i>
	Mr. Taylor Bybee, Autonomous Solutions
12:00PM-1:30PM	LUNCHEON – AE50 Recognition Location: Grand Ballroom – 10 th Floor
1:30PM-3:30PM	<u>AE50 Showcase I</u> Location: Medallion Ballroom A, B Moderator: Austin Roepke, John Deere
1:30PM	GrainViz Colin Gilmore, 151 Research, Inc. and Jitendra Paliwal, University of Manitoba
1:55PM	John Deere Connected Support™ – Expert Alerts Robert Margherio, John Deere
2:20PM	Individual Nozzle Boundary Control for PinPoint® II Rob Eckman, Capstan Ag Systems
2:45PM	IntelliTurn™ Drew Ferrier, New Holland Agriculture
3:10PM	CustomSteer™ Drew Ferrier, New Holland Agriculture
3:30PM-4:00PM	BREAK – Supplier and Consultants Display
4:00PM-6:00PM	<u>AE50 Showcase II</u> Location: Medallion Ballroom A, B Moderator: Austin Roepke, John Deere

4:00PM	Merge Maxx® MM 1100 Hay Merger Brandon Pfeuti, Kuhn North America, Inc.
4:25PM	Trident 5550 Liquid/Dry Combination Applicator Rex Ruppert, Case IH Agriculture
4:50PM	S700 Combine Stephen Corban, John Peters, Victor Evjen, John Deere
5:15PM	Double Duty Twin Chain Mark Anderson, GVM, Inc.
6:30PM-8:00PM	AETC Planning Committee Medallion Ballroom C, D

2018 AETC Planning Committee

Andy Theisen, Chair

Rusty Unterzuber, Vice Chair

Brian Huenink, Past Chair

Scott Cedarquist

Mark Dilts

Scott Frost

Andy Lenkaitis

Brian Luck

Douglas Otto

Austin Roepke

Michael Sama

Amelie Sirois-Leclerc

Shahab Sokhansanj

Kent Thoreson

Shane Williams

Chad Yagow

Jessica Bell

Sharon McKnight

THANK YOU!