

American Society of Agricultural and Biological Engineers



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News for and about ASABE members

July 01, 2019

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From the Executive Director



ASABE is fortunate to have a low rate of staff turnover because it helps ensure the continuity and stability of the numerous programs and services that we provide. However, from time to time, we'll have staff changes, and currently we are saying goodbye to two longtime colleagues, Sue Mitrovich, who is retiring, and Mark Crossley, who is moving to California. Sue began her Society tenure with the November 2002 issue of *Resource* and went on to become the magazine's managing editor, with the motto "Every issue better than the last." Mark started 19 years ago as the membership director and brought

passion and enthusiasm to everything he engaged in. Join me in wishing Sue and Mark all the best with their future endeavors.

The job posting for Mark's replacement will be coming soon. Stepping up as Sue's replacement is Melissa Miller, a 27-year staffer with wide experience in our publications area. Melissa will bring new ideas in magazine design and features to the *Resource* readership. Speaking of personnel, I'm pleased to announce that Sarah Hill has joined us as a part-time, independent contractor working as our social media strategist. Sarah brings a wealth of knowledge in communications and marketing and will expand our digital capabilities significantly. Experience and innovation—we offer both here at headquarters.

Darrin J. Drollinger
Executive Director

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AIM 2019 - Online Registration Closed; App Now Available



ASABE 2019 Annual
International Meeting



Upcoming
Meetings
and
Other Events

Florida
June 26 - 29

2019 AIM
July 7 - 10

Fountain
Wars
July 8

Robotics
July 8 & 9

More
Information





Marriott Copley Place, Boston
July 7-10, 2019
#ASABE19

Advance registration is now closed. If you missed the deadline, we will look forward to registering you onsite at the Marriott Copley.

Check your email for details on downloading the meeting app, which launched earlier this week.

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Discipline and Leadership Earn Top Trophy for UNL Design Team



Focus on executing an appropriate design and stick to schedule. That was the governing principle that the University of Nebraska-Lincoln followed in achieving success at the 22d annual International 1/4-Scale Tractor Student Design Competition. This is the second time that the Huskers have taken the Wehner-Detra

traveling trophy: they won also in 2016.

In the runner-up position was last year's winner, South Dakota State University, who has now placed among the top two teams for the last three years. They were followed by the University of Missouri, the Ohio State University, and North Carolina State University, in third through fifth places, respectively,

"Team captains Devon Vancura, Zak Kurkowski, Jonah Bolin, and Noah Bolin focused the team on appropriate designs based on what was expected at competition," said Roger Hoy, faculty advisor to the Nebraska team. "Further, they forced the team to be disciplined with the timeline so that ample time was present for testing and required redesign based on test results." The team was well prepared for competition, with few surprises to deal with, Hoy added.

Twenty-four teams, from the US, Canada, and Israel, competed in the 2019 competition. The 1/4-scale tractor contest is unique among student engineering-design events, providing a realistic 360-degree workplace experience. It is a popular recruiting event for many sponsors, who find among the participants practiced, high-achieving prospects with strong technical, communication and leadership skills honed by competition experience.

The event was held May 30 to June 2, in Peoria, Illinois. Sponsors of the 2019 competition include: AGCO Corporation - Jackson, Briggs & Stratton, Campbell Scientific, Case IH, Caterpillar, Danfoss, Deere & Company, Kubota, New Holland North America, SolidWorks, Thomson, Titan International, and Applied Industries. Also, Claas, GSI Grain Systems, Katie McDonald Photography, MacDon, and AGCO Corporation - Hesston, as well as Igus, Miller Electric Manufacturing Co., and RCI Engineering. Other supporting sponsors include AC McCartney Farm Equipment, HarvestMaster, Kelly Sauder Rupiper LLC, Kondex Corp, Martin Sullivan Inc., Precision Planting, SJ Smith Co, Star Equipment, and Walz Scale.

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Support the ASABE Foundation: Join Us for Dinner in Boston!

ASABE Foundation Dinner
Tuesday, July 9, 7:00 to 10:00 pm
\$150 per plate; \$125 for students

Join us for a truly Boston dining experience—from lobster to Boston cream pie—in the elegant Staffordshire Room of the Westin Copley Place overlooking historical Copley Square, a three-minute walk from the Marriott. After dinner, enjoy an engaging presentation by ASABE Fellow Chandra Madramootoo, who will share his deep insights on "How to Feed Nine Billion People in a Resource-Constrained World."

The Foundation dinner is the pinnacle AIM event for good conversation, food, drink, and entertainment—the single best opportunity to mingle outside of your usual circles, network with fellow members, and enjoy the sights. This annual tradition will enhance your meeting experience while advancing the good work of the Foundation.

Purchase tickets onsite at the meeting, or contact [Mark Crossley](#), ASABE director of advancement.

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Join us in
welcoming
our most recent

NEW
MEMBERS

May
2019

[Click Here](#)

President-Elect, Trustee Nominees Sought for 2020; Nominating Committee Positions to Be Filled

With this year's elections behind us, and new officers prepared to take their positions in July, at the end of the Annual International Meeting, it is time to look ahead to the 2020 Leadership Ballot. Nominees are being sought for president-elect and three trustee positions. Nominating committee positions will also be filled for the Technical Communities and Districts, including EOPD, ESH, PAFS, International, District 1, District 3, and District 5.

Members of the Nominating committee have the serious but rewarding task of securing candidates for the Society's annual election of officers, which include the president-elect, board trustees, and members of the Nominating committee itself. The slate they prepare is then presented in January for ballot by the general ("corporate") membership. The committee comprises representatives from each of the Society's technical and geographic units, as well as the International membership, who currently serve on staggered two-year terms.

Those wishing to put forth nominations are encouraged to submit names and supporting materials to the Nominating committee before the start of the 2019 Annual International Meeting (see contact information below). Current committee members are as follows, with the group each represents shown in parentheses: [Maynard Herron](#) (chair), [Carmen Agouridis](#) (NRES), [Tami Brown-Brandl](#) (PAFS), [Oladiran Fasina](#) (PRS), [Bill Field](#) (ESH), [Paul Funk](#) (District 4), [Dick Godwin](#) (International), [Jay Harmon](#) (District 3), [Kenneth Hellevang](#) (District 5), [Carol Jones](#) (District 2), [Laura Pepple](#) (ASE), [Dana Porter](#) (EOPD), [Randall Reeder](#) (District 1), [Shahab Sokhansani](#) (ES), [Travis Tsunemori](#) (MS), and [Tamie Veith](#) (ITSC).

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Biosystems Engineering Digital Library - Thank You for Completing the Survey!

Many of you received an email from Darrin Drollinger in early April about ASABE supporting development of the open access Biosystems Engineering Digital Library (BEDL). BEDL will include a variety of digital content (eg, images, data, video) and, most importantly, link that content to metadata describing context and use. The context of BEDL is both educational (a place to find materials for use in developing and delivering courses) and professional (a place to find examples, data, specifications, etc.) linked to metadata providing geographical context. You were invited to complete a survey to let the BEDL development team know how you might use BEDL and what features would be helpful.

We have received 170 responses to the survey. Thank you to all who completed it! The BEDL development team is using your responses to inform final design of BEDL. Thank you also to those of you who volunteered to participate in testing BEDL or receive BEDL updates. We will be in touch in the coming months.

If you did not complete the survey, we would still be glad to hear from you. Please click [here](#) for more information and to complete the brief survey. If you would like to participate in testing BEDL or receive BEDL updates, please send an email to bedl@asabe.org with your name and contact information.

The BEDL project is made possible by ASABE Initiative Fund support.

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Journal Publishing Session at the Annual Meeting

Join us in Boston, at the Annual International Meeting, for a conversation on ASABE peer-reviewed publications.

On Wednesday, July 10, from 10:15 am to 12:15 pm, a panel moderated by Garey Fox, journals editor in chief, will discuss publishing in our journals.

If you have questions or are new to publishing, this session is a great opportunity to learn more.

Consult the [meeting program](#) for complete details.

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Survey for ASABE Journals and Publishing

Help us determine the future direction of ASABE journals by responding to a [survey](#).

The survey is anonymous. Initial results will be shared at the annual meeting in a special session on "Publishing in ASABE Journals and Navigating the Publication Process," detailed elsewhere in this newsletter.

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AIM Attendees: Join Us for the Student Awards Breakfast

Please join us to honor our student competitors at the annual AEM/ASABE Student Awards Breakfast on July 10, at the Copley Place in Boston, during the ASABE Annual International Meeting

This event begins at 7:30 am and includes a hot breakfast buffet. Tickets are available at the registration desk during the annual meeting. Tickets are \$5 for students and \$20 for non-students.

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ASABE Journals Name Superior Award Winners for 2019

The articles published by ASABE in its peer-reviewed journals during 2018 are eligible for 2019 superior paper awards. Each technical community selects up to 5% of the papers published by their community for awards based on the article's timeliness, fundamental value, originality, and benefits to society, as well as for the quality of writing. Winning authors are presented with a certificate at the annual international meeting. Below are the papers that were selected for recognition this year.

Energy Systems

"Assessment of Perennial Grass Inventories Predicted in the Billion-Ton Studies," D. S. Jones, S. W. Searcy, L. M. Eaton. *Transactions of the ASABE* 61(2): 331-340 (doi: 10.13031/trans.12505)

Ergonomics, Safety, & Health

"Estimating Passive Stress Acting on a Grain Entrapment Victim's Chest," S. F. Issa, C. Wassgren, C. V. Schwab, R. Strohshine, W. E. Field. *Journal of Agricultural Safety and Health* 24(3): 113-126 (doi: 10.13031/jash.12552)

Information Technology, Sensors, & Control Systems

"A Computational Fluid Dynamics Model of Biological Heat and Gas Generation in a Dairy Holding Area," J. L. Drewry, M. R. Mondaca, B. D. Luck, C. Y. Choi. *Transactions of the ASABE* 61(2): 449-460 (doi: 10.13031/trans.12394)

"Structured Illumination Reflectance Imaging for Enhanced Detection of Subsurface Tissue Bruising in Apples," R. Li, Y. Lu, R. Lu. *Transactions of the ASABE* 61(3): 809-819 (doi: 10.13031/trans.12243)

Machinery Systems

"Prediction of Aerial Spray Release from UAVs," M. E. Teske, D. A. Wachspress, H. W. Thistle. *Transactions of the ASABE* 61(3): 909-918 (doi: 10.13031/trans.12701)

"A Precision Pruning Strategy for Improving Efficiency of Vibratory Mechanical Harvesting of Apples," X. Zhang, L. He, Y. Majeed, M. D. Whiting, M. Karkee, Q. Zhang. *Transactions of the ASABE* 61(5): 1565-1576 (doi: 10.13031/trans.12825)

Natural Resources & Environmental Systems

"Identification of Hydrologically Sensitive Areas Considering Watershed Process Dynamics," Y. Her, C. Heatwole. *Transactions of the ASABE* 61(6): 1891-1906 (doi: 10.13031/trans.12792)

"How Do Temperature and Rainfall Affect Nitrous Oxide Emissions from Open-Lot Beef Cattle Feedyard Pens?" D. B. Parker, H. M. Waldrip, K. D. Casey, B. L. Woodbury, M. J. Spiehs, K. Webb, W. M. Willis. *Transactions of the ASABE* 61(3): 1049-1061 (doi: 10.13031/trans.12788)

"Improved APEX Model Simulation of Buffer Water Quality Benefits at Field Scale," G. M. M. A. Senaviratne, C. Baffaut, J. A. Lory, R. P. Udawatta, N. O. Nelson, J. R. Williams, S. H. Anderson. *Transactions of the ASABE* 61(2): 603-616 (doi: 10.13031/trans.12655)

"Process-Based Modeling of Infiltration, Soil Loss, and Dissolved Solids on Saline and Sodic Soils," S. K. Nouwakpo, M. A. Weltz, A. Arslan, C. H. Green, O. Z. Al-Hamdan. *Transactions of the ASABE* 61(3): 1033-1048 (doi: 10.13031/trans.12705)

Plant, Animal, & Facility Systems

"Carbon Footprint Assessment of a Large-Scale Pig Production System in Northern China: A Case Study," Y. Q. Zhou, H. M. Dong, H. W. Xin, Z. Z. Zhu, W. Q. Huang, Y. Wang. *Transactions of the ASABE* 61(3): 1121-1131 (doi: 10.13031/trans.12805).

"Dimensions of the Modern Pig," I. C. F. S. Condotta, T. M. Brown-Brandl, J. P. Stinn, G. A. Rohrer, J. D. Davis, K. O. Silva-Miranda. *Transactions of the ASABE* 61(5): 1729-1739 (doi: 10.13031/trans.12826).

"Simulation of Hydrogen Sulfide Emission from Deep-Pit Manure Storage During Agitation," H. Lin, W. Liu, J. Gan, Y. Wang, B. Hu. *Transactions of the ASABE* 61(6): 1951-1967 (doi: 10.13031/trans.12866)

Processing Systems

"Thermal Conductivity of Selected Foods at High-Pressure Processing Conditions," W. Sun, S. Zhu, H. S. Ramaswamy, Y. Yu, J. Li. *Transactions of the ASABE* 61(1): 317-325 (doi: 10.13031/trans.12435)

"Nanoporous Stainless Steel Surfaces for Anti-Bacterial Adhesion Performances," G.-H. Ban, N. Rungraeng, Y. Li, S. Jun. *Transactions of the ASABE* 61(3): 1175-1179 (doi: 10.13031/trans.12677)

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Editors and Reviewers Recognized for Outstanding Contributions for 2019

The high quality of ASABE'S peer-reviewed journals could not be maintained without reviewers willing to spend hours evaluating author manuscripts and making suggestions for improvements, nor without the dedicated service of associate editors, who work closely with reviewers, authors and editors during the peer review process for each manuscript.

Outstanding Reviewers

The reviewer recognition program developed by the refereed publications committee honors up to 11 outstanding reviewers each year. For the 2018 publication year, more than 900 reviewers participated in the review process. During the year, associate editors ranked reviewer timeliness and review quality. Each technical community then selects an allotted number of reviewers based on the number of manuscripts reviewed. This year's outstanding reviewers are:

Akinbode A. Adedeji
Lilong Chai
Daniel K. Fisher
Robert S. Freeland
Yufeng Ge
John E. Gilley
David L. Hard
Ganti S. Murthy
Jaume Puig-Barguès
Jianfeng Zhou

Outstanding Associate Editors

The associate editor recognition program developed by the Refereed Publications committee honors up to six outstanding associate editors each year. Editors of individual technical communities first submitted an allotted number of nominees to the P-511 Selection committee, based on workload, timeliness and review quality over the previous three years, from more than 140 associate editors. The Selection committee then applied the same criteria plus the editor's justifications for each nominee to make the final selection of the award recipients. This year's honorees are:

Haiyan Cen
Paul D. Colaizzi
Sudhagar Mani
Jaume Puig-Barguès
Mark R. Wilkins
Sarah Xiao Wu

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ITSC Community Paper Award Winners for 2019

The Information Technology, Sensors, and Controls Technical Community Meeting Paper Award competition was established in 1999 to encourage high-quality conference papers. The ITSC judges select the top papers from the community that will be presented at the annual international meeting each year.

The following papers and their authors will be reconized at the 2019 ASABE Annual International Meeting:

"An Online Unsupervised Deep Learning Approach for an Automated Pest Insect Monitoring System," Dan Jeric Arcega Rustia, Jun-Jee Chao, Jui-Yung Chung, Ta-Te Lin

"Deriving Vegetation Indices from High-throughput Images by Using Unmanned Aerial Systems in Soybean Breeding," Beichen Lyu, Stuart D. Smith, Yexiang Xue, Keith A. Cherkauer

"Combining UAV-based vegetation indices, canopy height and canopy coverage to improve rice yield prediction under different nitrogen levels," Liang Wan, Haiyan Cen, Jiangpeng Zhu, Yijian Li, Yueming Zhu, Dawei Sun, Haiyong Weng, Yong He

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Journal Article Tips

Avoid immediate rejection or delays by making sure that:

- In the reference list, the author names are in the right format (last name, initials)
- The reference list is accurate using DOI, where possible (copy references into free [check references utility](#))
- The English is clear, correct, and consistent (for translation assistance, see [English-Language Editing](#))

Download the latest [manuscript template](#) and check the latest [Guide for Authors](#) for best results. Changes continue, including requiring "highlights" for your manuscript. See our web page for [authors](#) for more details.

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VisualChallenge9



Show us what you see. Submit your agricultural and biological engineering images by October 4, 2019.

Here is your chance to convey and celebrate the beauty of your work, your research, or your technical community. It's up to you and your camera, so be creative!

Submit as many entries as you want. All entries should be original work, and the image resolution must be 300 dpi or greater.

E-mail your entries, as attachments to [Melissa Miller](#). Write *VisualChallenge9* in the subject line, and include a title and brief description for each image. If necessary, include a name for crediting the image and written assurance that permission has been granted to submit and possibly publish the image.

The best images will be selected by ASABE staff and published in the January/February 2020 issue of *Resource*. Good luck! Have fun! We'd love to see what you do!

To see the winning entries from previous Visual Challenges, visit www.asabe.org/VisualChallenge.

Previous VisualChallenge entry (above) courtesy of ASABE member John Lumkes.

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In Memoriam - Ralph E. Baumheckel



ASABE Fellow Ralph Edmund Baumheckel was born October 23, 1927. He was born on the farm of his maternal grandparents, Edmund Bryson and Effie Bell Remy Trusler in Connersville, Ind. He was the only child of William Martin and Irene Josephine Trusler Baumheckel. He attended the first grade in a one-room schoolhouse east of Connersville and completed grades one through six in Cincinnati. He graduated from Arsenal Technical High School, Indianapolis, where he received the Milo H. Stewart award, was Lieutenant Commander of the Tech Legion Honor Society, and gave the student commencement address, representing the class of 1946.

Baumheckel graduated from Purdue University with a BS in mechanical engineering in 1950. He was elected a member of Phi Tau Sigma Mechanical Engineering Honor Society as well a member of the Pi Kappa Alpha fraternity. Following graduation, he and Priscilla McLaughlin of Indianapolis were married in 1950 at Tabernacle Presbyterian Church, Indianapolis. He was employed as a product development engineer with the Link-Belt Company, Indianapolis, and was granted three patents that included one for a pressed steel bearing housing that became the new JPS product line.

He and his wife became partners in the family farm and Trusler Hybrid Seed Corn business and moved to the farm, in Connersville, in 1952. He was past president of the Connersville Kiwanis Club and the Indiana Crop Improvement Association, ICIA, receiving its Recognition of Service to the ICIA and the Seed Industry award in February 2007. Baumheckel joined the International Harvester Company, IH, in product planning research at the world headquarters in Chicago in 1962. During his 20 years with IH he progressed through many areas of responsibility, retiring as manager of research for Corporate Advanced Harvesting Systems. As adjunct professor at Purdue University-Indiana University, Richmond, Ind., he taught technical report writing. The last eight years of his business career were as the Uni System project manager; White New-Idea Corporation, Coldwater, Ohio. He served two terms as chairman of the American Seed Trade Association Machinery committee.

Baumheckel was senior author for *International Harvester Farm Equipment Product History 1831-1985*, published by ASABE. He was a past board member of the International Harvester Collectors Club #7 of Indiana and was the editor of *The Indiana Harvester* newsletter for six years. His lifelong love of photography resulted in exhibition awards and publication in various periodicals. He was a volunteer photographer for the Indiana State Museum and was a consultant to the Indiana State Museum Corn exhibit that became "Amazing Maze." Ralph has served as a trustee and an elder in the Presbyterian church and was a member of Second Presbyterian Church, Indianapolis. He was

also an associate member of Castleton United Methodist Church, Indianapolis, where he was group leader of their Variety Bunch. He was a member of the Indianapolis Literary Club. He was recognized by the Breakfast Optimist Club of Indianapolis as Optimist of the Year in 2006.

Baumheckel is remembered as a brilliant man and storyteller, a giving Christian servant, loving husband and father. He is survived by his wife, Priscilla; son David, and his wife Maria Hortensia Patiño de Baumheckel, of St. Louis; daughters Carol Ann Baumheckel, of Indianapolis, and Linda Sue Baumheckel and her son Gabriel Kyler, of San Antonio, Tex. Services were held June 4. Memorial contributions are suggested to: Arsenal Technical High School, 1500 East Michigan Street, Indianapolis, IN 46202.

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Recent Standards Activities

New Standards

- ANSI/ASABE S638 MAY2019, Pintle Hitch and Ring for Over the Road Towed Implements

New Revisions

- ASAE S431.4 MAY2019, 2000-RPM Front and Mid PTO for Lawn and Garden Ride-on Tractors and Commercial Turf Equipment, Mid PTO for Compact Utility Tractors

Press Releases

- June 6, 2019, ASABE Develops Standard for Pintle Hitching Systems
- June 7, 2019, ASABE Expands Scope of Standard for Lawn and Garden Tractors

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