

**2018 Annual Meeting  
Midwestern Section  
American Society of Plant Biologists**

**March 3 – 4, 2018  
Howe Hall  
Iowa State University  
Ames, Iowa**



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Stinziano JR, Morgan PB, Lynch DJ, Saathoff AJ, McDermitt DK, and Hanson DT. (2017) The rapid A-C<sub>i</sub> response: photosynthesis in the phenomic era. Plant, Cell & Environment, 40:1256-1262. doi: 10.1111/pce.12911



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## **American Society of Plant Biologists Midwestern Section**

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### **Short Program**

#### **Saturday, March 3**

7:00 – 8:00 .....	Registration/Check-in/Poster Set-up/Breakfast
8:00 – 8:30 .....	Featured Speaker Dr. Patrick Schnable
8:30 – 10:00 .....	Oral Session I (T1-T6)
10:00 – 11:30 .....	Poster Session I (Even #s)/ Morning Refreshments
11:30 – 1:00 .....	Oral Session II (T7-T12)
1:00 – 2:00 .....	Lunch
2:00 – 2:30 .....	Featured Speaker Dr. Harry Klee
2:30 – 4:00 .....	Oral Session III (T13-T18)
4:00 – 4:15 .....	Coffee Break
4:15 – 5:15 .....	Keynote Speaker Dr. Ruth Welti
5:15 – 6:45 .....	Poster Session II (Odd #s) / Appetizers
6:45 – 9:00 .....	Banquet Dinner

#### **Sunday, March 4**

7:15 – 8:15 .....	Registration/Check-in/Career Panel Discussion/Breakfast
8:15 – 10:00 .....	Oral Session IV (T19-T25)
10:00 – 10:30 .....	Morning Refreshments/ Remove Posters
10:30 – 11:00 .....	Featured Speaker Dr. Reuben Peters
11:00 – 12:15 .....	Oral Session V (T26-T29)
12:15 – 1:00 .....	Business Meeting, Announcements, Awards

#### **Meeting Locations..... (Howe Hall)**

Registration .....	<b>Howe Hall Atrium</b>
Saturday Featured and Oral Presentations .....	<b>Alliant Lee Auditorium</b>
Saturday Keynote Address .....	<b>Alliant Lee Auditorium</b>
Sunday Career Panel Discussion .....	<b>Alliant Lee Auditorium</b>
Sunday Featured, and Oral Presentations .....	<b>Alliant Lee Auditorium</b>

Poster Viewing.....	<b>Howe Hall Atrium</b>
Saturday Continental Breakfast .....	<b>Howe Hall Atrium</b>
Saturday, Lunch, Dinner Banquet .....	<b>Howe Hall Atrium</b>
Sunday Continental Breakfast .....	<b>Howe Hall Atrium</b>

***Vegetarian options will be available as part of all meals provided; however, preference will be given to individuals who requested vegetarian meals during meeting registration***

**Posters:** Posters need to be placed on poster boards between 7:00am and 9:30am on Saturday, March 3. Due to space limitations, poster measurements should be NO larger than 42 in. wide X 36 in. tall. Please bring a sufficient supply of pushpins to affix your poster to the poster board. Pins will be available on-site but in limited quantity. Posters need to be removed from poster boards on Sunday, March 4 between 10am and 12pm (noon). Any items remaining on display after 12pm on Sunday will be discarded.

Photographing, videotaping, or recording of any kind is prohibited (including but not limited to camera phones and digital devices).

**Notice to Oral Presenters:** The preferred format for presentations is PowerPoint. As oral presenters check in at registration, they will be directed to an area to upload a new version of presentation. Presenters are expected to provide their presentation a minimum of 1 hour prior to their oral session. This will help keep the session on schedule and allow each oral presenter the full amount of time to present. The presentation room will have a pc, projector, screen and remote mouse for your use.

2018 Annual MW ASPB Meeting, Iowa State University, Ames  
**Saturday, March 3**

**Morning**

- 7:00 – 8:00 Registration/Check-in/Poster Set-up/Breakfast ..... Howe Hall Atrium**
- 8:00 Welcoming Remarks ..... Alliant Lee Auditorium**
- 8:05 – 8:30 Featured Speaker – Dr. Patrick Schnable, Iowa State University**  
 Community building for transformation science: A case study in predictive plant phenomics.
- 8:30 – 10:00 Oral Session I ..... Moderator – Dr. Diane Bassham, Iowa State University**
- 8:30 T1.** Dissecting the metabolic and transcriptomic networks underlying the surface lipid metabolome on maize silks: The impact of genotype, environment, and silk development  
*Keting Chen, Roy J. Carver Dept. of Biochemistry, Biophysics and Molecular Biology, Iowa State University*
- 8:45 T2.** Defining the functions of ORM proteins as regulators of sphingolipid metabolism  
*Ariadna Gonzalez-Solis, Dept. of Biochemistry, University of Nebraska, Lincoln*
- 9:00 T3.** Interaction between brassinosteroids and TOR signaling regulates growth and stress responses in *Arabidopsis*  
*Ching-Yi Liao, Dept. of Genetics, Development and Cell Biology, Iowa State University*
- 9:15 T4.** Novel roles of clathrin-coat components in plant immune signaling and development  
*Gayani Ekanayake, Dept. of Biochemistry, University of Missouri, Columbia*
- 9:30 T5.** An insect inhibitor of apoptosis (SfIAP) interacts with SQUAMOSA promoter binding protein (SBP) transcription factors that exhibit pro-cell death characteristics  
*Ryan Kessens, Dept. of Plant Pathology, University of Wisconsin, Madison*
- 9:45 T6.** Crystal structure of xyloglucan xylosyltransferase 1 reveals a mechanism for biologically observed patterns of xylosyl transfer during xyloglucan biosynthesis  
*Alan Culbertson, Roy J. Carver Dept. of Biochemistry, Biophysics and Molecular Biology, Iowa State University*
- 10:00 – 11:30 Poster Session I (Even Numbered Posters) and Refreshments ..... Howe Hall Atrium**
- 11:30 – 1:00 Oral Session II ..... Moderator – Dr. William Serson, Ave Maria University**
- 11:30 T7.** Defining the circadian clock interactome using tandem affinity purification coupled with mass spectrometry  
*Maria Sorkin, Dept. of Biology, Washington University, St. Louis*
- 11:45 T8.** The GmNAC42-1 transcription factor regulates the biosynthesis of glyceollin phytoalexins in soybean in response to abiotic and fungal elicitors  
*Md Asraful Jahan, Div. of Plant and Soil Sciences, West Virginia University*
- 12:00 T9.** Transcriptome analysis of a very short root phenotype in wheat  
*Ghana Challa, Dept. of Biology and Microbiology, South Dakota State University*
- 12:15 T10.** Maize carbohydrate partitioning *defective33* functions in sucrose export from leaves  
*Thu Tran, Div. of Biological Sciences and Interdisciplinary Plant Group, University of Missouri, Columbia*

- 12:30 T11.** Using CRISPR/Cas9 genome editing technology to discover biological functions of plant cell wall proteins  
*Yuan Zhang, Dept. of Environmental and Plant Biology, Ohio University*
- 12:45 T12.** Utilizing CRISPR-Cas9 genome editing to improve agronomic traits of the oilseed-producing winter cover crop pennycress (*Thlaspi arvense*)  
*Malihe Esfahanian, School of Biological Sciences, Illinois State University*

***Lunch and Afternoon, March 3***

**1:00 – 2:00 Lunch..... Howe Hall Atrium**

**2:00 Featured Speaker Dr. Harry Klee, Horticultural Sciences Dept., University of Florida**  
The State of the ASPB Union

**2:30 – 4:00 Oral Session III ..... Moderator – Dr. Emily Heaton, Iowa State University**

**2:30 T13.** The morphological and transcriptomic impact of silver quantum dots in *Arabidopsis thaliana* during early development  
*Natalie Smith, Dept. of Biology, Missouri State University*

**2:45 T14.** Induction of stress response, cell wall damage and cell death in determination of silver nanoparticle toxicity threshold of the heavy-metal accumulating fern, *Azolla caroliniana*  
*Shayla Gunn, Dept. of Plant Biology, Southern Illinois University*

**3:00 T15.** Sex-dependent variation of pumpkin (*Cucurbita maxima* cv Big Max) nectar and nectaries as determined by proteomics and metabolomics  
*Elizabeth Chatt, Roy J. Carver Dept. of Biochemistry, Biophysics and Molecular Biology, Iowa State University*

**3:15 T16.** The role of rolling leaves: Phenomic dissection of the interplay among drought responses across a diverse panel of 501 maize lines  
*Colton McNinch, Dept. of Molecular, Cellular and Developmental Biology, Iowa State University*

**3:30 T17.** Glandular trichome-derived terpenes of wild tomato accessions affect aphid performance and feeding behavior  
*Fumin Wang, Division of Plant and Soil Sciences, West Virginia University*

**3:45 T18.** Not another *Miscanthus* × *giganteus* nitrogen trial. It is a REPLAY  
*Mauricio Tejera, Dept. of Agronomy, Iowa State University*

**4:00 – 4:15 Break ..... Howe Hall Atrium**

**4:15 – 5:15 KEYNOTE SPEAKER**  
**Dr. Ruth Welti, Div. of Biology, Kansas State University**  
Using lipidomics to understand plant response to the environment

**5:15 – 6:45 Poster Session II (Odd Numbered Posters) and Appetizers..... Howe Hall Atrium**

***Evening***

**6:45 – 9:00 Dinner Banquet and Networking.....Howe Hall Atrium**

## Sunday, March 4

### Morning

7:15 – 8:15     **Registration/Check-In/Breakfast**..... **Howe Hall Atrium**

7:30 – 8:15     **Career Panel Discussion** ..... **Alliant Lee Auditorium**

8:15 – 9:45     **Oral Session IV** ..... **Moderator – TBD**

8:15     T19.     Drought stress activates NAC transcription factor RD26 through gsk3-like kinase BIN2 and protein phosphatase 2c ABI1 in *Arabidopsis*  
*Hao Jiang, Dept. of Genetics, Development and Cell Biology, Iowa State University*

8:30     T20.     Antimicrobial lipid transfer proteins are a common feature of floral nectar  
*Anthony Schmitt, Dept. of Plant and Microbial Biology, University of Minnesota*

8:45     T21.     Enhanced MALDI mass spectrometry imaging of amino acids in maize root tissue through chemical derivatization  
*Kelly O'Neill, Dept. of Chemistry, Iowa State University*

9:00     T22.     Functional characterization of compromised hydrolysis of triacylglycerol 7 (CHT7) protein and its CXC domain in *Chlamydomonas reinhardtii*  
*Nick Fekaris, Dept. of Biochemistry and Molecular Biology, Michigan State University*

9:15     T23.     Characterization and mapping of the *suppressor of sessile spikelet 3 (sos3)* mutant which functions in paired spikelet development in maize  
*Amanda Blythe, Dept. of Biological Sciences, University of Missouri, Columbia*

9:30     T24.     Understanding the metabolic flux of rhamnose in plant cells  
*Kyler Weingartner, Dept. of Biochemistry and Molecular Biophysics, Kansas State University*

9:45     T25.     An acyl carrier protein mutant links auxin signaling and fatty acid biosynthesis  
*Clarissa Lewis, Dept. of Genetics, Development and Cell Biology, Iowa State University*

10:00 – 10:30   **Refreshment Break & Poster Removal**..... **Howe Hall Atrium**

10:30 – 11:00   **Featured Speaker, Dr. Reuben Peters, Iowa State University**  
From angströms to agriculture with diterpenoid natural products

11:00 – 12:15   **Oral Session V** ..... **Moderator – Raimund Nagel, Iowa State University**

11:00     T26.     A homeodomain transcription factor, its START domain and epidermal development in plants  
*Thiya Mukherjee, Div. of Plant Biology, Kansas State University*

11:15     T27.     NEMATE, a nectary-enriched multidrug and toxic extrusion protein involved in nectar production in *Arabidopsis*  
*Rahul Roy, Dept. of Plant and Microbial Biology, University of Minnesota*

11:30     T28.     Type-I MADS-box transcription factors play a critical role during early seed development in rice  
*Puneet Paul, Dept. of Agronomy and Horticulture, University of Nebraska*



**11:45 T29.** An engineered novel plasma membrane protein provides broad-spectrum pathogen and pest immunity in soybean  
*Micheline Ngaki, Dept. of Agronomy, Iowa State University*

**12:00 T30.** Traveling two diverging roads, cytochrome-P450 catalyzed demethylation and lactone formation in bacterial gibberellin biosynthesis  
*Raimund Nagel, Roy J. Carver Dept. of Biochemistry, Biophysics and Molecular Biology, Iowa State University*

*Afternoon*

**12:15 – 1:00 Business Meeting, Announcements, Award Presentations .....Alliant Lee Auditorium**

**1:00 pm Meeting ends. Safe travels.**