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GORDON RESEARCH CONFERENCES *frontiers of science*

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Nancy Ryan Gray, Ph.D.
Director

**2011 GORDON RESEARCH CONFERENCE
on PLANT LIPIDS: STRUCTURE, METABOLISM & FUNCTION**

FINAL PROGRESS REPORT

DEPARTMENT OF ENERGY
GRANT NO. DE-SC0004721

The Gordon Research Conference on PLANT LIPIDS: STRUCTURE, METABOLISM & FUNCTION was held at Hotel Galvez, Galveston, Texas on January 30 – February 4, 2011. The Conference was well-attended with 127 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students. Of the 127 attendees, 38 voluntarily responded to a general inquiry regarding ethnicity which appears on our registration forms. Of the 38 respondents, 26% were Minorities – 0% Hispanic, 26% Asian and 0% African American. Approximately 26% of the participants at the 2011 meeting were women.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. Attached is a copy of the formal schedule and speaker program and the poster program. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field.

Thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Sincerely,
Christoph Benning, Conference Chairperson
MICHIGAN STATE UNIVERSITY

PLANT LIPIDS: STRUCTURE, METABOLISM & FUNCTION

January 30 - February 4, 2011

Hotel Galvez

Galveston, TX

Chairs:

Christoph Benning & Jan Jaworski

Vice Chairs:

Ruth Welti & Edgar Cahoon

This is the second Gordon Research Conference on "Plant Lipids: Structure, Metabolism & Function". It covers current topics in lipid structure, metabolism and function in eukaryotic photosynthetic organisms including seed plants, algae, mosses and ferns. Work in photosynthetic bacteria is considered as well as it serves the understanding of specific aspects of lipid metabolism in plants. Breakthroughs are discussed in research on plant lipids as diverse as glycerolipids, sphingolipids, lipids of the cell surface, isoprenoids, fatty acids and their derivatives. The program covers nine concepts at the forefront of research under which afore mentioned plant lipid classes are discussed. The goal is to integrate areas such as lipid signaling, basic lipid metabolism, membrane function, lipid analysis, and lipid engineering to achieve a high level of stimulating interaction among diverse researchers with interests in plant lipids. One Emphasis is on the dynamics and regulation of lipid metabolism during plant cell development and in response to environmental factors.

Contributors



SUNDAY

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|-------------------|--|
| 4:00 pm - 8:00 pm | Arrival and Check-in (Office Closed 6:00 pm - 7:45 pm) |
| 6:00 pm | Dinner |
| 7:30 pm - 7:35 pm | Welcome / Introductory Comments by GRC Site Staff |
| 7:35 pm - 9:30 pm | Lipid Adaptation in Response to a Changing Environment Discussion Leader: Peter Doermann (University of Bonn) |
| 7:35 pm - 7:40 pm | Peter Doermann (University of Bonn) "Introductory Remarks" |
| 7:40 pm - 8:05 pm | Benjamin van Mooy (Woods Hole Oceanographic Institution) |

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|-------------------|---|
| | "Changes in the lipids of marine phytoplankton in response to environmental stressors" |
| 8:05 pm - 8:10 pm | Discussion |
| 8:10 pm - 8:35 pm | Hiroyuki Ohta (Tokyo Institute of Technology) "Metabolic remodeling of glycerolipid synthesis in response to developmental and environmental changes" |
| 8:35 pm - 8:40 pm | Discussion |
| 8:40 pm - 9:00 pm | Jyoti Shah (University of North Texas) "Identification of a diterpenoid as a vasculature translocated signal associated with the activation of systemic acquired resistance" |
| 9:00 pm - 9:05 pm | Discussion |
| 9:05 pm - 9:25 pm | Jedrzej Szymanski (Max Planck Institute, Potsdam) "Gene networks shaping <i>Arabidopsis thaliana</i> membrane lipidome in changing environmental conditions - a systems approach" |
| 9:25 pm - 9:30 pm | Discussion |

MONDAY

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|---------------------|--|
| 7:30 am - 8:30 am | Breakfast |
| 8:30 am | Group Photo |
| 9:00 am - 12:30 pm | Lipids Involved in Endomembrane and Plasma Membrane Structure and Function Discussion Leader: Edgar Cahoon (University of Nebraska) |
| 9:00 am - 9:05 am | Edgar Cahoon (University of Nebraska) "Opening Remarks" |
| 9:05 am - 9:30 am | Sebastien Mongrand (CNRS, Université Victor Segalen Bordeaux 2) "Plasma Membrane Rafts: domains for lipid signal transduction and cell-to-cell communication in plants?" |
| 9:30 am - 9:35 am | Discussion |
| 9:35 am - 10:00 am | Mee-Len Chye (University of Hong Kong) " <i>Arabidopsis</i> and rice Acyl-CoA binding proteins for the endomembrane and plasma membrane" |
| 10:00 am - 10:05 am | Discussion |
| 10:05 am - 10:35 am | Coffee Break |
| 10:35 am - 10:55 am | Jean-Denis Faure (Institut Jean-Pierre Bourgin) "Endomembrane dynamics during cytokinesis require lipids with very long acyl chains" |
| 10:55 am - 11:00 am | Discussion |
| 11:00 am - 11:20 am | Ming Chen (Univ. Nebraska, Lincoln) "Unraveling the function and biosynthetic complexities of glucosylceramides in <i>Arabidopsis</i> " |
| 11:20 am - 11:25 am | Discussion |

11:25 am - 11:40 am **Yasuyo Yamaoka** (Saitama University)
"Phosphatidylserine synthase 1 is required for microspore development in *Arabidopsis thaliana*"

11:40 am - 11:45 am Discussion

11:45 am - 12:00 pm **Markus Gierth** (University of Cologne)
"An acyl-activating enzyme is involved in fatty acid uptake in *Synechocystis*"

12:00 pm - 12:05 pm Discussion

12:05 pm - 12:20 pm **Carlotta Peters** (Danforth Center, St. Louis)
"Metabolic and Signaling functions of Non-Specific Phospholipase Cs NPCs in Plant Adaptation to Abiotic Stress and Nutrient Deprivation"

12:20 pm - 12:25 pm Discussion

12:25 pm - 12:30 pm **Edgar Cahoon** (University of Nebraska)
"Closing Remarks"

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session (*Posters 1-15*)

6:00 pm Dinner

7:30 pm - 9:30 pm **Lipids in Protection of Plants against Abiotic and Biotic Stresses**

Discussion Leader: **Ljerka Kunst** (University of British Colombia)

7:30 pm - 7:35 pm **Ljerka Kunst** (University of British Colombia)
"Opening remarks"

7:35 pm - 8:00 pm **Asaph Aharoni** (Weizmann Institute of Science)
"Transcriptional regulation of cuticular lipids metabolism in vegetative and reproductive plant organs"

8:00 pm - 8:10 pm Discussion

8:10 pm - 8:35 pm **Owen Rowland** (Carleton University)
"Biosynthesis of extracellular lipids in *Arabidopsis*"

8:35 pm - 8:45 pm Discussion

8:45 pm - 9:00 pm **Amelie Bernard** (Laboratoire De Biogenese Membranaire)
"Looking for CER1 partners to elucidate VLC-alkanes production in *Arabidopsis* waxes"

9:00 pm - 9:05 pm Discussion

9:05 pm - 9:20 pm **Anna Maria Zbierzak** (Univ. Bonn)
"The chilling sensitive 1 (CHS1) gene of *Arabidopsis*: A resistance (R)-related protein negatively regulating hypersensitive response"

9:20 pm - 9:25 pm Discussion

9:25 pm - 9:30 pm **Ljerka Kunst** (University of British Colombia)
"Closing Remarks"

TUESDAY

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|---------------------|--|
| 7:30 am - 8:30 am | Breakfast |
| 9:00 am - 12:30 pm | Lipid Signaling in Plant Development and Homeostasis Discussion Leader: Sam Wang (University of Missouri, St. Louis / Donald Danforth Plant Science Center) |
| 9:00 am - 9:05 am | Sam Wang (University of Missouri, St. Louis / Donald Danforth Plant Science Center) "Opening Remarks" |
| 9:05 am - 9:30 am | Glenda Gillaspay (Virginia Tech) "Phosphoinositide signaling and metabolism" |
| 9:30 am - 9:35 am | Discussion |
| 9:35 am - 10:00 am | Kent Chapman (University of North Texas) "N-Acylethanolamines and plant growth and development" |
| 10:00 am - 10:05 am | Discussion |
| 10:05 am - 10:35 am | Coffee Break |
| 10:35 am - 10:55 am | Liang Guo (University of Missouri, St. Louis / Danforth Plant Science Center) "Regulation of Sphingosine Kinase by Phosphatidic Acid in Signaling Stomatal Closure in <i>Arabidopsis</i> " |
| 10:55 am - 11:00 am | Discussion |
| 11:00 am - 11:15 am | Ingo Heilmann (Martin-Luther-University Halle-Wittenberg) "A distinct PtdIns(4,5)P ₂ pool that influences Rac-signaling in pollen tubes of <i>Nicotiana tabacum</i> " |
| 11:15 am - 11:25 am | Discussion |
| 11:25 am - 11:40 am | Günther F.E. Scherer (University Hannover) "Patatin-related Phospholipase A: Functions in Signal Transduction" |
| 11:40 am - 11:45 am | Discussion |
| 11:45 am - 12:00 pm | Johanna M. Rankenberg (Kent State University / University of Amsterdam) "Underlying molecular principles of interactions between signaling lipids and plant protein kinases" |
| 12:00 pm - 12:05 pm | Discussion |
| 12:05 pm - 12:20 pm | Susanne Hoffmann-Benning (Michigan State University) "Characterization of a phloem lipid binding protein with a role in long-distance lipid-mediated regulation of plant development" |
| 12:20 pm - 12:25 pm | Discussion |
| 12:25 pm - 12:30 pm | Sam Wang (University of Missouri, St. Louis / Donald Danforth Plant Science Center) "Closing Remarks" |
| 12:30 pm | Lunch |

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| 1:30 pm - 4:00 pm | Free Time |
| 4:00 pm - 6:00 pm | <u>Poster Session</u> (<i>Posters 16-30</i>) |
| 6:00 pm | Dinner |
| 7:30 pm - 9:30 pm | Lipid Molecules as Building Blocks for the Biogenesis of Organelles |
| | Discussion Leader: Hiroyuki Ohta (Tokyo Institute of Technology) |
| 7:30 pm - 7:35 pm | Hiroyuki Ohta (Tokyo Institute of Technology) "Opening remarks" |
| 7:35 pm - 8:00 pm | Gilles Basset (University of Nebraska) "Exploring phyloquinone biosynthesis and metabolism through plant-prokaryotes phylogenomics" |
| 8:00 pm - 8:10 pm | Discussion |
| 8:10 pm - 8:35 pm | Rebecca Roston (Michigan State University) "Mechanisms of lipid trafficking between the ER and the plastid" |
| 8:35 pm - 8:45 pm | Discussion |
| 8:45 pm - 9:00 pm | Katarzyna J. Lorenc-Kukula (University of North Texas) "Role of the <i>Arabidopsis</i> dihydroxyacetone phosphate reductase SFD1 in lipid metabolism and plant defense" |
| 9:00 pm - 9:05 pm | Discussion |
| 9:05 pm - 9:20 pm | Ikuo Nishida (Saitama University) "The <i>pect1-4</i> mutation affects mitochondrial lipid composition and respiration capacity in <i>Arabidopsis</i> at low temperature" |
| 9:20 pm - 9:25 pm | Discussion |
| 9:25 pm - 9:30 pm | Hiroyuki Ohta (Tokyo Institute of Technology) "Closing Remarks" |

WEDNESDAY

| | |
|---------------------|--|
| 7:30 am - 8:30 am | Breakfast |
| 9:00 am - 12:30 pm | Lipid Body Formation and Regulation of Lipid Metabolism |
| | Discussion Leader: Ivo Feussner (University of Goettingen) |
| 9:00 am - 9:05 am | Ivo Feussner (University of Goettingen) "Opening Remarks" |
| 9:05 am - 9:30 am | Yi Guo (Gladstone Institute of Cardiovascular Disease) "Lipid droplet biology in animals and yeast" |
| 9:30 am - 9:35 am | Discussion |
| 9:35 am - 10:00 am | Quiang Hu (Arizona State University) "Lipid Bodies in Algae: Biogenesis, function and implications for biofuels" |
| 10:00 am - 10:05 am | Discussion |

10:05 am - 10:35 am Coffee Break

10:35 am - 11:00 am **Jay Thelen** (University of Missouri)
"A proteome and phosphoproteome perspective of seed development"

11:00 am - 11:05 am Discussion

11:05 am - 11:20 am **Ljudmilla Borisjuk** (IPK, Gatersleben)
"Unravelling developmental and positional cues for oil storage in rapeseed by 3D-NMR imaging"

11:20 am - 11:25 am Discussion

11:25 am - 11:40 am **Chris Yohn** (Sapphire)
"Identification of the elusive algal lipid accumulation trigger"

11:40 am - 11:45 am Discussion

11:45 am - 12:00 pm **Kenzo Nakamura** (Nagoya University)
"Large scale screening of *Arabidopsis* mutants in seed oil synthesis by using a high-throughput real-time bioluminescence monitoring system"

12:00 pm - 12:05 pm Discussion

12:05 pm - 12:20 pm **Carl Andre** (Brookhaven Natl. Lab)
"Feedback Regulation of Fatty Acid Synthesis Occurs by Biochemical Inhibition of Acetyl-CoA Carboxylase in *Brassica napus* Embryo-like Cell Cultures"

12:20 pm - 12:25 pm Discussion

12:25 pm - 12:30 pm **Ivo Feussner** (University of Goettingen)
"Closing Remarks"

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session (*Posters 31-45*)

6:00 pm Dinner

7:00 pm - 7:30 pm Business Meeting
Nominations for the next Vice Chair; Fill out Conference Evaluation Forms; Discuss future Site & Scheduling preferences; Election of the next Vice Chair

7:30 pm - 9:30 pm **Analysis of Triacylglycerols and other Lipids**
Discussion Leader: **Ruth Welti** (Kansas State University)

7:30 pm - 7:35 pm **Ruth Welti** (Kansas State University)
"Opening Remarks"

7:35 pm - 8:00 pm **Tony Larson** (University of York)
"Analysis of seed oil triacylglycerols by LCMSMS: untargeted screening for novel modifications"

8:00 pm - 8:10 pm Discussion

8:10 pm - 8:35 pm **Jonathan Markham** (Donald Danforth Plant Science Center)
"What sphingolipid profiling of mutants tells us about the function of

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| | sphingolipids in plants" |
| 8:35 pm - 8:45 pm | Discussion |
| 8:45 pm - 9:00 pm | Young Jin Lee (Iowa State University) "Mass Spectrometry Imaging for the Localization of Plant Lipids in High Spatial Resolution" |
| 9:00 pm - 9:05 pm | Discussion |
| 9:05 pm - 9:20 pm | Ivo Feussner (University of Goettingen) "Analysis of galactolipids by LC/MS/MS: a tool to identify new functions of plastidial lipids" |
| 9:20 pm - 9:25 pm | Discussion |
| 9:25 pm - 9:30 pm | Ruth Welti (Kansas State University) "Closing Remarks" |

THURSDAY

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|---------------------|--|
| 7:30 am - 8:30 am | Breakfast |
| 9:00 am - 12:30 pm | Lipids and Fatty Acids for Human Health and Industrial Purposes |
| | Discussion Leader: Anthony Kinney (Dupont) |
| 9:00 am - 9:05 am | Anthony Kinney (Dupont) "Opening Remarks" |
| 9:05 am - 9:30 am | Edgar Cahoon (University of Nebraska) "Unraveling vitamin E biosynthesis for enhanced antioxidant content of oilseeds" |
| 9:30 am - 9:35 am | Discussion |
| 9:35 am - 10:00 am | Toralf Senger (BASF) "Engineering of healthy plants: What is the next silver bullet?" |
| 10:00 am - 10:05 am | Discussion |
| 10:05 am - 10:35 am | Coffee Break |
| 10:35 am - 10:50 am | Chaofu Lu (Montana State University) " <i>Camelina sativa</i> as a platform for the production of biofuels and lubricants" |
| 10:50 am - 10:55 am | Discussion |
| 10:55 am - 11:10 am | John L. Harwood (Cardiff School of Biosciences) "Algal VLC-PUFAs: what are the potential health benefits?" |
| 11:10 am - 11:15 am | Discussion |
| 11:15 am - 11:25 am | Harrie van Erp (Washington State University) "Castor phospholipid: diacylglycerol acyl transferase facilitates engineering of hydroxy fatty acids" |
| 11:25 am - 11:30 am | Discussion |
| 11:30 am - 11:40 am | Philip D. Bates (Washington State University) "The <i>Arabidopsis</i> triacylglycerol synthesis pathway both inhibits and |

promotes accumulation of unusual fatty acids in developing transgenic seeds"

11:40 am - 11:45 am Discussion

11:45 am - 12:00 pm **John Shanklin** (Brookhaven Natl. Lab)

"Unusual fatty acids: Achieving high levels of omega-7 fatty acids in transgenic plants"

12:00 pm - 12:05 pm Discussion

12:05 pm - 12:20 pm **John Ohlrogge** (Michigan State University)

"What determines the >100 Fold Difference In Oil Content between Oil Palm and Date Palm?"

12:20 pm - 12:25 pm Discussion

12:25 pm - 12:30 pm **Anthony Kinney** (Dupont)

"Closing Remarks"

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session (*Posters 46-67*)

6:00 pm Dinner

7:30 pm - 9:30 pm

Regulation of Plant Lipid Metabolism: A Target for Engineering

Discussion Leader: **Jan Jaworski** (Donald Danforth Plant Science Center)

7:30 pm - 7:35 pm **Jan Jaworski** (Donald Danforth Plant Science Center)

"Opening Remarks"

7:35 pm - 8:00 pm **Doug Allen** (USDA-ARS, Donald Danforth Plant Science Center)

"Insights into primary metabolism in oilseeds from labeling and flux analysis"

8:00 pm - 8:10 pm Discussion

8:10 pm - 8:35 pm **John Browse** (Washington State University)

"Reductant supply can limit desaturase activities in transgenic plants"

8:35 pm - 8:45 pm Discussion

8:45 pm - 9:00 pm **Ana Paula Alonso** (Ohio State University)

"Revealing targets for fatty acid synthesis using metabolic flux analysis"

9:00 pm - 9:05 pm Discussion

9:05 pm - 9:20 pm **Knut Meyer** (Dupont)

"Targets for engineering seed oil biosynthesis identified through characterization of enhancer tag lines with a dominant low oil phenotype"

9:20 pm - 9:25 pm Discussion

9:25 pm - 9:30 pm **Jan Jaworski** (Donald Danforth Plant Science Center)

"Closing Remarks"

FRIDAY

7:30 am - 8:30 am Breakfast

9:00 am Departure



Plant Lipids: Structure, Metabolism & Function (2011)

| Name | Organization | Participation | Status |
|---|--|----------------------|---------------|
| AHARONI, ASAPH | WEIZMANN INSTITUTE OF SCIENCES | Speaker | Registered |
| ALLEN, DOUG K | USDA-ARS/ DONALD DANFORTH PLANT SCIENCE CENTER | Speaker | Registered |
| ALLEN, JAMES W | UNIVERSITY OF NEBRASKA LINCOLN | Poster Presenter | Registered |
| ALONSO, ANA PAULA | OHIO STATE UNIVERSITY | Speaker | Registered |
| ANDRE, CARL | BROOKHAVEN NATIONAL LABORATORY | Speaker | Registered |
| BAI, SHUANGYI | WASHINGTON STATE UNIVERSITY | Poster Presenter | Registered |
| BASSET, GILLES | UNIVERSITY OF NEBRASKA | Speaker | Registered |
| BATES, PHILIP D | WASHINGTON STATE UNIVERSITY | Speaker | Registered |
| BAYON-DE-NOYER, SHEN Y | WASHINGTON STATE UNIVERSITY | Poster Presenter | Registered |
| BENNING, CHRISTOPH | MICHIGAN STATE UNIVERSITY | Chair | Registered |
| BERNARD, AMELIE | LABORATOIRE DE BIOGENESE MEMBRANAIRE | Speaker | Registered |
| BIN HAJI MOHD TAHA, AHMAD ISKANDAR | HOKKAIDO UNIVERSITY | Poster Presenter | Registered |
| BLACK, PAUL N | UNIVERSITY OF NEBRASKA | Speaker | Registered |
| BORISJUK , LJUDMILLA | INSTITUTE OF PLANT GENETICS AND CROP PLANT RESEARC | Speaker | Registered |
| BROWSE, JOHN A | WASHINGTON STATE UNIVERSITY | Speaker | Registered |
| BRUNE, DANIEL C. | ARIZONA STATE UNIVERSITY | Poster Presenter | Registered |
| BUCHER, MARCEL | UNIVERSITY OF COLOGNE | Poster Presenter | Registered |
| BUER, BENJAMIN | UNIVERSITY OF COLOGNE | Poster Presenter | Registered |
| BURGOS, ASDRUBAL | MAX PLANCK INSTITUTE FOR MOLECULAR PLANTPHYSIOLOGY | Poster Presenter | Registered |
| CAHOON, EDGAR | UNIVERSITY OF NEBRASKA-LINCOLN | Vice Chair | Registered |
| CHAPMAN, KENT | UNIVERSITY OF NORTH TEXAS | Speaker | Registered |
| CHEN, HUI | DONALD DANFORTH PLANT SCIENCE CENTER | Poster Presenter | Registered |
| CHEN, MING | UNIVERSITY OF NEBRASKA LINCOLN | Speaker | Registered |
| CHYE, MEE LEN | UNIVERSITY OF HONG KONG | Speaker | Registered |
| COTTON, KIMBERLY L | WASHINGTON STATE UNIVERSITY | Poster Presenter | Registered |
| DENOLF, PETER | BAYER CROPSCIENCE | Attendee | Registered |
| DIRUSSO, CONCETTA C | UNIVERSITY OF NEBRASKA - LINCOLN | Attendee | Registered |
| DOERMANN, PETER | UNIVERSITY OF BONN | Discussion Leader | Registered |
| EDSTAM, MONIKA M | LINKOPING UNIVERSITY | Poster Presenter | Registered |

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| FAN, JILIAN | BROOKHAVEN NATIONAL LABORATORY | Poster Presenter | Registered |
| FAURE, JEAN-DENIS | INRA AGROPARISTECH | Speaker | Registered |
| FEUSSNER, IVO | GEORG-AUGUST-UNIVERSITY | Discussion Leader | Registered |
| FUJIKI, YUKI | SAITAMA UNIVERSITY | Poster Presenter | Registered |
| GIERTH, MARCUS | UNIVERSITY OF COLOGNE | Speaker | Registered |
| GILLASPY, GLENDA | VIRGINIA TECH | Speaker | Registered |
| GUO, LIANG | UNIVERSITY OF MISSOURI-SAINT LOUIS/DDPSC | Speaker | Registered |
| GUO, YI | J. DAVID GLADSTONE INSTITUTE | Speaker | Registered |
| HAN, OKSOO | CHONNAM NATIONAL UNIVERSITY | Poster Presenter | Registered |
| HARRISON, MARIA | BOYCE THOMPSON INSTITUTE FOR PLANT RESEARCH | Poster Presenter | Registered |
| HARWOOD, JOHN L | CARDIFF UNIVERSITY | Speaker | Registered |
| HEILMANN, INGO | MARTIN-LUTHER-UNIVERSITY HALLE-WITTENBERG | Speaker | Registered |
| HIRSCHI, KENDAL | BAYLOR COLLEGE OF MEDICINE | Poster Presenter | Registered |
| HOFFMANN-BENNING, SUSANNE | MICHIGAN STATE UNIVERSITY | Speaker | Registered |
| HORN, PATRICK J | UNIVERSITY OF NORTH TEXAS | Poster Presenter | Registered |
| HU, QIANG | ARIZONA STATE UNIVERSITY | Speaker | Registered |
| JAWORSKI, JAN | DONALD DANFORTH PLANT SCIENCE CENTER | Chair | Registered |
| KANEDA, MINAKO | UNIVERSITE DE MONTREAL | Poster Presenter | Registered |
| KANG, SHIN GENE | DONALD DANFORTH PLANT SCIENCE CENTER | Poster Presenter | Registered |
| KEEREETAWEEP, JANTANA | UNIVERSITY OF NORTH TEXAS | Poster Presenter | Registered |
| KIMBERLIN, ATHEN | UNIVERSITY OF NEBRASKA-LINCOLN | Poster Presenter | Registered |
| KINNEY, ANTHONY J | DUPONT EXPERIMENTAL STATION | Discussion Leader | Registered |
| KOLOMIETS, MIKE V | TEXAS A&M UNIVERSITY | Poster Presenter | Registered |
| KOO, ABRAHAM JK | MICHIGAN STATE UNIVERSITY | Poster Presenter | Registered |
| KOOIJMAN, EDGAR E | KENT STATE UNIVERSITY | Poster Presenter | Registered |
| KOSMA, DYLAN K | MICHIGAN STATE UNIVERSITY | Poster Presenter | Registered |
| KUNST, LJERKA | UNIVERSITY OF BRITISH COLUMBIA | Discussion | Registered |

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|---------------------------------------|---|----------------------|------------|
| | | Leader | |
| LABUSCH, CORINNA | UNIVERSITY OF HANNOVER | Poster Presenter | Registered |
| LARSON, TONY | UNIVERSITY OF YORK | Speaker | Registered |
| LEE, YOUNG JIN | IOWA STATE UNIVERSITY | Speaker | Registered |
| LI, MAOYIN | UNIVERSITY OF MISSOURI-ST. LOUIS | Poster Presenter | Registered |
| LI, XIANGJUN | UNIVERSITY OF NEBRASKA-LINCOLN | Poster Presenter | Registered |
| LIU, BENSHENG | MICHIGAN STATE UNIVERSITY | Poster Presenter | Registered |
| LORENC-KUKULA, KATARZYNA J | UNIVERSITY OF NORTH TEXAS | Speaker | Registered |
| LOU, YING | BROOKHAVEN NATIONAL LABORATORY | Poster Presenter | Registered |
| LU, CHAOFU | MONTANA STATE UNIVERSITY | Poster Presenter | Registered |
| MANAS FERNANDEZ, AURORA | UNIVERSITY OF BRITISH COLUMBIA | Poster Presenter | Registered |
| MARILLIA, ELIZABETH F | PBI/NRC | Poster Presenter | Registered |
| MARKHAM, JONATHAN E | DONALD DANFORTH PLANT SCIENCE CENTER | Speaker | Registered |
| MENDEZ, MICHAEL | SAPPHIRE ENERGY INC | Attendee | Registered |
| MEYER, KNUT | DUPONT AGRICULTURAL BIOTECHNOLOGY | Speaker | Registered |
| MOELLERING, ERIC R | SYNTHETIC GENOMICS, INC. | Poster Presenter | Registered |
| MONGRAND, SEBASTIEN | UNIVERSITY OF BORDEAUX | Speaker | Registered |
| MORITA, NAOKI | NATL INST ADV IND SCI & TECHNOL (AIST) | Poster Presenter | Registered |
| NAKAMURA, YUKI | MAX-PLANCK-INSTITUTE FOR PLANT BREEDING RESEARCH | Poster Presenter | Registered |
| NAKAMURA, KENZO | NAGOYA UNIVERSITY | Speaker | Registered |
| NEOGI, PURNIMA | UNIVERSITY OF NORTH TEXAS | Poster Presenter | Registered |
| NGUYEN, TAM H | UNIVERSITY OF NEBRASKA-LINCOLN | Poster Presenter | Registered |
| NIKOLAU, BASIL | IOWA STATE UNIVERSITY | Poster Presenter | Registered |
| NISHIDA, IKUO | SAITAMA UNIVERSITY | Speaker | Registered |
| OHLROGGE, JOHN B | MICHIGAN STATE UNIVERSITY | Speaker | Registered |
| OHTA, HIROYUKI | TOKYO INSTITUTE OF TECHNOLOGY | Discussion Leader | Registered |
| PADDOCK, TROY | NATIONAL RENEWBLE ENERGY LABRATORY | Poster Presenter | Registered |
| PETERS, CARLOTTA | UM-ST LOUIS | Speaker | Registered |

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| PLESKOT, ROMAN | INSTITUTE OF EXPERIMENTAL BOTANY AS CR, V. V. I. | Poster Presenter | Registered |
| PUTTICK, DEBRA M | LINNAEUS PLANT SCIENCES INC | Poster Presenter | Registered |
| RANKENBERG, JOHANNA M | KENT STATE UNIVERSITY | Speaker | Registered |
| RAWAT, RICH A | SUNY STONY BROOK | Poster Presenter | Registered |
| ROBERTS, NICK | AGRESEARCH | Poster Presenter | Registered |
| ROLLETSCHKE, HARDY | INSTITUTE OF PLANT GENETICS AND CROP PLANT RESEARC | Attendee | Registered |
| ROSTON, REBECCA | MICHIGAN STATE UNIVERSITY | Speaker | Registered |
| ROWLAND, OWEN | CARLETON UNIVERSITY | Speaker | Registered |
| RYU, STEPHEN B | KOREA RESEARCH INSTITUTE OF BIOSCIENCE AND BIOTECH | Poster Presenter | Registered |
| SAKURADANI, EIJI | KYOTO UNIVERSITY | Poster Presenter | Registered |
| SANGHANI, PARESH C | DOW AGROSCIENCES LLC | Attendee | Registered |
| SCHERER, GUENTHER F. E. | LEIBNIZ UNIVERSITAET HANNOVER | Speaker | Registered |
| SENGER, TORALF | BASF PLANT SCIENCE COOMPANY GMBH | Speaker | Registered |
| SENGODON, PADMAVATHI | TEXAS A&M UNIVERSITY | Poster Presenter | Registered |
| SHAH, JYOTI | UNIVERSITY OF NORTH TEXAS | Speaker | Registered |
| SHANKLIN, JOHN | BROOKHAVEN NATIONAL LAB | Speaker | Registered |
| SHIVA, SUNITHA | KANSAS STATE UNIVERSITY | Poster Presenter | Registered |
| SIMPSON, JEFFREY P | MICHIGAN STATE UNIVERSITY | Poster Presenter | Registered |
| SMITH, MARK A | NRC PLANT BIOTECHNOLOGY INSTITUTE | Poster Presenter | Registered |
| SNAPP, ANNA R | MONTANA STATE UNIVERSITY | Poster Presenter | Registered |
| SZYMANSKI, JEDRZEJ | MAX PLANCK INSTITUTE | Speaker | Registered |
| TANOUE, RYO | UNIVERSITY OF TOKYO | Poster Presenter | Registered |
| THELEN, JAY | UNIVERSITY OF MISSOURI | Speaker | Registered |
| TJELLSTROM, HENRIK | MICHIGAN STATE UNIVERSITY | Poster Presenter | Registered |
| TOMBOKAN, XENIA | BRUKER OPTICS INC. | Poster Presenter | Registered |
| VAN ERP, HENRICUS E.G. | WSU | Speaker | Registered |
| VAN MOOY, BENJAMIN | WOODS HOLE OCEANOGRAPHIC INSTITUTION | Speaker | Registered |
| VENABLE, MARK E | APPALACHIAN STATE UNIVERSITY | Attendee | Registered |
| VON BERLEPSCH, SIMON | UNIVERSITY OF COLOGNE | Poster | Registered |

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|-----------------------------|---|----------------------|------------|
| | | Presenter | |
| VU, HIEU S | KANSAS STATE UNIVERSITY | Poster Presenter | Registered |
| WANG, PENG | UNIVERSITY OF NEBRASKA-LINCOLN | Poster Presenter | Registered |
| WANG, SAM | DONALD DANFORTH PLANT SCIENCE CENTER | Discussion Leader | Registered |
| WANG, GELIANG | UNIVERSITY OF MISSOURI - ST LOUIS | Poster Presenter | Registered |
| WELTI, RUTH | KANSAS STATE UNIVERSITY | Vice Chair | Registered |
| WHITTLE, EDWARD J | BROOKHAVEN NATIONAL LAB | Poster Presenter | Registered |
| XU, CHANGCHENG | BROOKHAVEN NATIONAL LABORATORY | Poster Presenter | Registered |
| YAMAOKA, YASUYO | SAITAMA UNIVERSITY | Speaker | Registered |
| YAN, YI | BROOKHAVE NATIONAL LAB | Attendee | Registered |
| YAN, YUANXIN | TEXAS A&M UNIVERSITY | Poster Presenter | Registered |
| YOHN, CHRISTOPHER | SAPPHIRE ENERGY | Speaker | Registered |
| YU, OLIVER | DANFORTH PLANT SCIENCE CENTER | Poster Presenter | Registered |
| YU, XIAOHONG | STONYBROOK UNIVERSITY | Poster Presenter | Registered |
| ZARSKY, VIKTOR | CHARLES UNIVERSITY AND IEB ASCR | Poster Presenter | Registered |
| ZBIERZAK, ANNA MARIA | IMBIO, UNIVERSITY OF BONN | Speaker | Registered |
| 127 Attendees | | | |