

35th  
General  
Meeting

of

**American Society  
of  
Sugar Beet Technologists**



Wyndham Orlando Resort  
Orlando, Florida  
February 25 – February 28, 2009

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## SCHEDULE

### **Wednesday – February 25**

9:00 A.M. – 6:00 P.M.

Registration – Citrus Ballroom Foyer

1:00 P.M. – 4:00 P.M.

Program Committee – Hibiscus Room

6:00 P.M. – 8:00 P.M.

President's Reception – Grand Lawn

### **Thursday – February 26**

8:00 A.M. – 5:00 P.M.

Registration – Citrus Ballroom Foyer

9:00 A.M. – Noon

General Session – Jasmine/Magnolia Rooms

1:15 P.M. – 5:00 P.M.

\*Section A – Jasmine/Magnolia Rooms

\*Section C – Orange/Lemon Rooms

\*Section F – Lime/Tangerine Rooms

### **Friday – February 27**

7:55 A.M. – Noon

\*Section A – Jasmine/Magnolia Rooms

\*Section C – Orange/Lemon Rooms

\*Section F – Lime/Tangerine Rooms

1:15 P.M. – 4:00 P.M.

\*Section F – Lime/Tangerine Rooms

1:15 P.M. – 3:08 P.M.

Section A – Jasmine/Magnolia Rooms

Section B & E – Orange/Lemon Rooms

3:08 P.M. – 5:00 P.M.

Break

Posters – Oleander Room

### **Saturday – February 28**

8:00 A.M. – 10:00 A.M.

Poster Session – Oleander Room

9:55 A.M. – 12:06 P.M.

Section A – Jasmine/Magnolia Rooms

Section C – Orange/Lemon Rooms

Section D – Lime/Tangerine Rooms

1:15 P.M. – 3:06 P.M.

Section A & C – Jasmine/Magnolia Rooms

1:15 P.M. – 3:06 P.M.

Agriculture & Operations – Lime/Tangerine Rooms

Forum: Beet Storage

6:30 P.M. – 7:30 P.M.

Reception – West Pool Pavilion

7:30 P.M. – 11:00 P.M.

Banquet and Awards Program – Palms Ballroom E

\*Includes Forum

**THURSDAY MORNING  
FEBRUARY 26, 2009**

**General Session  
Jasmine/Magnolia**

- 9:00 Call to Order:  
Mr. Calvin K. Jones  
President & CEO  
Wyoming Sugar Company, LLC
- 9:05 Welcome and Announcements:  
Mr. Robert O. Hatch  
General Chairman  
Organic Defoamer Group

**INVITED SPEAKERS**

Mr. John Prince  
Agricultural Development Director  
Botian Sugar Industries  
Beijing, China  
Parent Company: British Sugar plc  
Peterborough, England  
*North China - Opportunities for Sugar Beet Production*

Dr. Peter Baron  
Executive Director  
International Sugar Organization  
London, England  
*Key Factors Shaping the Future World of Sugar Economy*

Questions and Answers for Panel:  
Mr. Robert O. Hatch, Moderator

**Panel sponsored, in part, by the Corsberg, Grinde,  
Shemilt Memorial Fund\***

\*Three Holly Sugar Corporation executives, Jack Corsberg (Operations), Harold Grinde (Environmental Affairs) and Gordon Shemilt (Commodity Supply) were killed in an airplane crash while enroute to inspect a coal mine which was supplying coal to one of its factories. A fund was set up with contributions from company staff, other industry members and associated industry suppliers to honor the memory of these three respected sugar industry members. The fund was created to provide funding to encourage guest speakers for selected Beet Sugar Development Foundation or American Society of Sugar Beet Technologists meetings or schools.

- 11:15 Presidential Address: Mr. Calvin K. Jones
- 11:30 Reports: Executive Vice President and  
Committees; Announcements

## THURSDAY AFTERNOON FEBRUARY 26

### Section A, Agronomy Jasmine/Magnolia

*Session Leader:* Allan Cattanach

- 1:15 Announcements
- 1:20 **Glyphosate influence on sugarbeet production and control of *Abutilon theophrasti*, *Chenopodium album*, and *Amaranthus* species using weed growth stage and growing degree days.**  
Bredehoeft, Mark W.\*, Mark W. Bloomquist, Chris C. Dunsmore and Cody W. Bakker, Southern Minnesota Beet Sugar Cooperative, Renville, MN.
- 1:38 **Number and timing of glyphosate applications in glyphosate-tolerant sugarbeets.**  
Stewart, James F.\*, Corey J. Guza and Lee A. Hubbell, Michigan Sugar Company, Bay City, MI.
- 1:56 **Strategies for controlling glyphosate-tolerant weeds in glyphosate-tolerant sugarbeets.**  
Wilson, Robert G., University of Nebraska, Panhandle Research and Extension Center, Scottsbluff, NE.
- 2:14 **Weed control in glyphosate-resistant sugar beets.**  
Stachler, Jeff M.\*, Alan G. Dexter and John L. Luecke, Dept. of Plant Sciences, North Dakota State University and University of Minnesota, Fargo, ND.
- 2:32 **Weed control challenges in glyphosate-resistant sugar beets in Minnesota and eastern North Dakota.**  
Stachler, Jeff M.\* and John L. Luecke, Dept. of Plant Sciences, North Dakota State University and University of Minnesota, Fargo, ND.
- 2:50 **Advantages and challenges of commercial production of Roundup Ready® sugarbeet in the US.**  
Khan, Mohamed F. R., Dept. of Plant Pathology, North Dakota State University and University of Minnesota, Fargo, ND.

\*Presenting Author

- 3:08 Break
- 3:30 Forum: **Roundup Ready®**  
Moderator: Andrew Kniss
- 5:00 Conclude

## THURSDAY AFTERNOON FEBRUARY 26

### Section C, Entomology and Plant Pathology Orange/Lemon

*Session Leader:* Linda Hanson

- 1:15 Announcements
- 1:20 **Occurrence of different *Fusarium* species in sugar beet.**  
Christ, Daniela and Mark Varrelmann\*, Institute of Sugar Beet Research, Dept. of Phytopathology, Göttingen, Germany.
- 1:38 ***Fusarium* seed stalk blight and rot in sugar beet.**  
Hanson, Linda E., USDA-ARS, SBRU, Michigan State University, East Lansing, MI.
- 1:56 **Rhizoctonia root and crown rot interactions with fungicide and glyphosate in glyphosate-tolerant sugar beet.**  
Franc, Gary D.\*, Andrew R. Kniss and William L. Stump, University of Wyoming, Plant Sciences, Laramie, WY.
- 2:14 **Potential interaction between *Rhizoctonia* and *Rhizopus* causing root rot in sugarbeet.**  
Hanson, Linda E., USDA-ARS, SBRU, Michigan State University, East Lansing, MI.
- 2:32 **Long term preservation of a collection of *Rhizoctonia solani*, using cryogenic storage.**  
Hill, Amy L.<sup>1</sup>, Kimberly M. Webb<sup>1\*</sup>, Julie Laufmann<sup>2</sup>, Linda E. Hanson<sup>3</sup> and Lee Panella<sup>1</sup>,  
<sup>1</sup>USDA-ARS, Sugarbeet Research Unit, Fort Collins, CO, <sup>2</sup>US Forest Service, Fort Collins, CO and <sup>3</sup>USDA-ARS, Sugarbeet and Bean Research, East Lansing, MI.

- 2:50 **Genetic diversity and pathogenicity of Rhizoctonia on sugarbeet.**  
Strausbaugh, Carl A.<sup>1\*</sup>, Imad A. Eujayl<sup>1</sup>, Lee W. Panella<sup>2</sup> and Linda E. Hanson<sup>3</sup>, <sup>1</sup>USDA-ARS, NWISRL, Kimberly, ID, <sup>2</sup>USDA-ARS, Fort Collins, CO and <sup>3</sup>USDA-ARS, Michigan State University, East Lansing, MI.
- 3:08 Break
- 3:30 Forum: **Rhizoctonia**  
Moderator: Gary Franc
- 5:00 Conclude

## THURSDAY AFTERNOON FEBRUARY 26

### Section F, Factory Operations Lime/Tangerine

*Session Leader:* Ron Kawlewski

- 1:15 Announcements
- 1:20 **Meeting customer expectations to disclose green house gas emissions.**  
Braun, Robert L., The Amalgamated Sugar Company LLC, Boise, ID.
- 1:38 **Demonstration of biogasification of sugarbeet tailings.**  
Pullammanappallil, Pratap<sup>1\*</sup>, Paul Lane<sup>1</sup>, Abhay Koppa<sup>1</sup>, Doug Renk<sup>1</sup>, Ioannis Polematidis<sup>1</sup>, David Chynoweth<sup>1</sup> and Robert Legrand<sup>2</sup>, <sup>1</sup>Department of Agricultural and <sup>2</sup>Biological Engineering, University of Florida, Gainesville, FL and URS Corporation, Austin, TX.
- 1:56 **Experiences of plate falling film evaporators at the back end of the evaporator station.**  
Bierbaum, Mario\* and Joachim Braasch, GEA Ecoflex GmbH, Duisburg, Germany.
- 2:14 **Improvement in first carbonation sludge settling by selection of a better flocculent addition point and the addition of starch as a second flocculent.**  
Carlson, Jeffrey L.\* and Upasiri Samaraweera, Minn-Dak Farmers Cooperative, Wahpeton, ND.

- 2:32 **Wedge-wire screens for continuous centrifugals.**  
Ekern, Eric P., Michigan Sugar Company, Bay City, MI.
- 2:50 **Separation and removal of preliner suspended solids.**  
Kawlewski, Ron<sup>1</sup>, Dennis J. Saye<sup>2\*</sup> and David W. Scheimann<sup>2</sup>, <sup>1</sup>Southern Minnesota Beet Sugar Cooperative, Renville, MN and <sup>2</sup>Nalco Company, Naperville, IL.
- 3:08 Break
- 3:30 Forum: **Carbon Foot Print**  
Moderator: Dean DeLorey
- 5:00 Conclude

## FRIDAY MORNING FEBRUARY 27

### Section A, Agronomy Jasmine/Magnolia

*Session Leader:* Wade Wimmer

- 7:55 Announcements
- 8:00 **Understanding the use of Glyphosate/ Glyphosate resistant technology and how it may change grower cultural practices.**  
Dean, Greg A.<sup>\*</sup>, David M. Elison<sub>1</sub>, David L. Scantlin<sub>1</sub> and Tim Pierson<sub>1</sub>, <sub>1</sub>The Amalgamated Sugar Company, LLC and <sub>1</sub>Grower/Cooperator, Nampa, ID.
- 8:18 **Strip tillage in sugarbeets.**  
Downard, Robert W.<sup>1\*</sup> and David Elison<sup>2</sup>, <sup>1</sup>The Amalgamated Sugar Company LLC, Twin Falls, ID and <sup>2</sup>The Amalgamated Sugar Company LLC, Paul, ID.
- 8:36 **Reclaiming beet ground soil quality and productivity with low-intensity tillage, biosuppressive covers and organic inputs.**  
Harrigan, Timothy M.<sup>1\*</sup>, Steve Poindexter<sup>2</sup>, Kurt Ewald<sup>3</sup> and Tom Wenzel<sup>2</sup>, <sup>1</sup>Biosystems and Agricultural Engineering Dept., Michigan State University, East Lansing, MI, <sup>2</sup>Michigan State University Extension, Saginaw, MI and <sup>3</sup>Lakke-Ewald Farms Inc., Unionville, MI.

- 8:54 **Comparison of strip tillage versus broadcast N application for sugar beets.**  
Hergert, Gary W.\* and Rex A. Nielsen, University of Nebraska, Panhandle Research and Extension Center, Scottsbluff, NE.
- 9:12 **Evaluating zone tillage for sugar beet production in Alberta.**  
Regitnig, Peter J.\* and Bryan Avison, Lantic Inc., Taber, Alberta, Canada.
- 9:30 **Development of season long deficit irrigation strategies for sugarbeets.**  
Yonts, C. Dean, University of Nebraska, Panhandle Research and Extension Center, Scottsbluff, NE.
- 9:48 **Environmental impact of sugar beet production in Germany.**  
Märlander, Bernward\*, Julia Fuchs, Heinrich Reineke and Nicol Stockfisch, Institute of Sugar Beet Research, Göttingen, Germany.
- 10:06 Break
- 10:30 Forum: **Reduced/Strip Tillage**  
Moderator: Clark Millard
- 12:00 Lunch

## **FRIDAY MORNING FEBRUARY 27**

### **Section C, Entomology and Plant Pathology Orange/Tangerine**

*Session Leader:* Mohamed Khan

- 7:55 Announcements
- 8:00 **The P25 pathogenicity factor of Beet necrotic yellow vein virus physically interacts with several sugar beet proteins possibly involved in virus pathogenicity or plant resistance.**  
Thiel, Heike and Mark Varrelmann\*, Institute of Sugar Beet Research, Dept. of Phytopathology, Göttingen, Germany.

- 8:18     **In search of predictors of sugarbeet resistance durability to *Beet necrotic yellow vein virus*.**  
Acosta-Leal, Rodolfo\*, Becky K. Bryan and Charles M. Rush, Texas AgriLife Research (Texas A&M University System), Amarillo, TX.
- 8:36     **Interactions between resistance-breaking *Beet necrotic yellow vein virus* and *Beet oak-leaf virus* in sugar beet.**  
Liu, Hsing-Yeh\* and Robert T. Lewellen, USDA-Agricultural Research Service, Salinas, CA.
- 8:54     **Generation and dispersion of resistance breaking variants of *Beet necrotic yellow vein virus* in the field.**  
Acosta-Leal, Rodolfo\*, Becky K. Bryan and Charles M. Rush, Texas AgriLife Research (Texas A&M University System), Amarillo, TX.
- 9:12     **Evaluation of program approaches for foliar disease control in sugar beets with prothioconazole.**  
Martin, John O.\*, Kevin Thorsness, Kelven Luff, Charles Hicks, Dean Maruska, George Simkins and James Bloomberg, Bayer CropScience, Research Triangle Park, NC.
- 9:30     **Fertilizer N effects on yield and root quality for high-yielding, fall-planted sugarbeets in the Imperial Valley.**  
Kaffka, Stephen R., University of California - Davis, Department of Plant Sciences, Davis, CA.
- 9:48     Open
- 10:06    Break
- 10:30    Forum: **Fusarium**  
Moderator: Lee Panella
- 12:00    Lunch

**FRIDAY MORNING  
FEBRUARY 27**

**Section F, Factory Operations  
Lime/Tangerine**

*Session Leader:* David Groom

- 7:55     Announcements

- 8:00 **Water footprint concepts applied to sugar beet processing facilities.**  
DeLorey, Dean C., The Amalgamated Sugar Company LLC, Boise, ID.
- 8:18 **Elimination of settling pond for dirt in flume water.**  
Rogers, Galan M.\*, Karen Cummings and Tom Dolecheck, The Amalgamated Sugar Company LLC, Paul, ID.
- 8:36 **Results and experiences with the Putsch Jet Wash Roller Table.**  
Bloom, Kevin, American Crystal Sugar Company, East Grand Forks, MN.
- 8:54 **Improved betaine recovery during molasses desugarization using the NS2P chromatography process.**  
Burris, Brian<sup>1\*</sup>, Yvan Bathany<sup>2</sup> and Hannu Paananen<sup>3</sup>, <sup>1</sup>Novasep Inc., Boothwyn, PA, <sup>2</sup>Novasep Process, Site de Saint-Maurice de Beynost, Miribel, France and <sup>3</sup>Danisco, Finland.
- 9:12 **Successful odor control in flume water, ponds, and mud presses in sugar beet processing plants.**  
Baures, Marc A., Hydrite Chemical Co., La Crosse, WI.
- 9:30 **Microbial issues encountered in wastewater treatment at Moorhead factory and remedial measures.**  
Samaraweera, Indrani S.\*, Terry D. McGillivray, Diane L. Rheault and Dennis Burthwick, American Crystal Sugar Company, Moorhead, MN.
- 9:48 **Enzymatic Reduction of Hydrogen Sulfide Formation in Beet Sugar Wastewaters.**  
Govind, Rakesh<sup>1\*</sup> and David Ferguson<sup>2</sup>, <sup>1</sup>Department of Chemical & Materials Engineering, University of Cincinnati, Cincinnati, OH and <sup>2</sup>LCP Tech, Inc., Cincinnati, OH.
- 10:06 Break
- 10:30 Forum: **Environmental, Water Uses and Odor Reduction**  
Moderator: Dave Braseth
- 12:00 Lunch

## FRIDAY AFTERNOON FEBRUARY 27

### Section A, Agronomy Jasmine/Magnolia

*Session Leader:* Len Kerbs

- 1:15 Announcements
- 1:20 **Volunteer potato density interference in sugar beet.**  
Morishita, Don W.<sup>1\*</sup>, Robyn C. Walton<sup>2</sup> and Michael P. Quinn<sup>3</sup>, <sup>1</sup>University of Idaho, Twin Falls R&E Center, Twin Falls, ID, <sup>2</sup>Seminis Seed Company, Filer, ID and <sup>3</sup>Oregon State University, Crop and Soil Science, Corvallis, OR.
- 1:38 **Volunteer potato timing of removal with and without glyphosate in sugar beet.**  
Shouse, Donald L.<sup>1\*</sup>, Don W. Morishita<sup>1</sup>, Joel Felix<sup>2</sup> and Daniel Henningsen<sup>1</sup>, <sup>1</sup>University of Idaho, Twin Falls R&E Center, Twin Falls, ID and <sup>2</sup>Oregon State University, Malheur Experiment Station, Ontario, OR.
- 1:56 **What controls respiration rate in stored sugarbeet roots?**  
Klotz, Karen L.\* and Abbas M. Lafta, USDA-ARS, Northern Crop Science Laboratory, Fargo, ND.
- 2:14 **Effect of forced air ventilation on sugarbeet storage in Michigan.**  
Guza, Corey J.\*, Dennis E. Montei and Richard R. List, Michigan Sugar Company, Bay City, MI.
- 2:32 **Construction of facility and development of protocol for sugarbeet storage trial(s).**  
Wishowski, David B.<sup>1\*</sup>, James F. Stewart<sup>1</sup>, Lee A. Hubbell<sup>1</sup>, Ralph Fogg<sup>2</sup> and Corey J. Guza<sup>2</sup>, <sup>1</sup>Michigan Sugar Company, Agricultural Research Center, Bay City, MI and <sup>2</sup>Michigan Sugar Company, Bay City, MI.
- 2:50 **Sugarbeet pile recovery using a modified Ropa Maus.**  
Kalso, Keith W.\* and Wayne Martin, Michigan Sugar Company, Croswell, MI.

3:08 Break and Posters

5:00 Conclude

## **FRIDAY AFTERNOON FEBRUARY 27**

### **Section B & E, Physiology, Biotechnology, Genetics and Germplasm Orange/Lemon**

*Session Leader:* Bill Wintermantel

1:15 Announcements

1:20 **Acceleration of Rhizoctonia resistance breeding.**

Janssen, Geert<sup>1\*</sup>, Roy Martens<sup>2</sup>, Rebecca Larson<sup>2</sup>, Maria Nihlgard<sup>1</sup> and Thomas Kraft<sup>1</sup>, <sup>1</sup>Syngenta Seeds, Landskrona, Sweden and <sup>2</sup>Syngenta Seeds, Longmont, CO.

1:38 **Breeding perspectives and programs at East Lansing, MI ARS.**

McGrath, J. Mitchell\* and Linda E. Hanson, USDA-ARS, SBRU, Michigan State University, East Lansing, MI.

1:56 **Long-term survival of cryopreserved sugarbeet pollen.**

Panella, Lee<sup>1</sup>, Lana Wheeler<sup>2</sup> and Mary McClintock<sup>1</sup>, <sup>1</sup>USDA-ARS, Sugarbeet Research Unit, Fort Collins, CO and <sup>2</sup>USDA-ARS, National Center for Genetic Resources Preservation, Fort Collins, CO.

2:14 **Bolting control in sugar beet.**

Gielen, Jan<sup>1</sup>, Elisabeth Wremerth-Weich<sup>2</sup>, Pierre Pin<sup>2</sup>, Petra Van Roggen<sup>2</sup>, Thomas Kraft<sup>2\*</sup>, Karsten Harms<sup>3</sup> and Gerhard Steinrucken<sup>2</sup>, <sup>1</sup>Syngenta Seeds, Saint-Sauveur, France, <sup>2</sup>Syngenta Seeds, Landskrona, Sweden, <sup>3</sup>Südzucker Mannheim/Ochsenfurt, ZAFES, Obbrigheim/Pfalz, Germany.

2:32 **Insect resistance to sugar beet pests mediated by a Beta vulgaris proteinase inhibitor gene BvSTI in transgenic plants.**

Smigocki, Ann C.<sup>1\*</sup>, Sabina Zuzga<sup>2</sup>, Jelena Savic<sup>3</sup> and Snezana D. Ivic-Haymes<sup>1</sup>, <sup>1</sup>USDA-ARS,

Molecular Plant Pathology Laboratory, Beltsville, MD, <sup>2</sup>Polish Academy of Sciences, Warsaw, Poland and <sup>3</sup>University of Belgrade, Belgrade, Serbia.

- 2:50 **Resistance to curly top viruses through virus induced gene silencing.**  
Wintermantel, William M.\* and Laura L. Hladky, USDA-ARS, Salinas, CA.
- 3:08 Break and Posters
- 5:00 Conclude

## FRIDAY AFTERNOON FEBRUARY 27

### Section F, Factory Operations Lime/Tangerine

*Session Leader:* Indrani Samaraweera

- 1:15 Announcements
- 1:20 **Low raw crystallization – is there room for improvement?**  
Kochergin, Vadim, Audubon Sugar Institute, LSU AgCenter, St. Gabriel, LA.
- 1:38 **Optimization of betaine recovery in a coupled loop molasses desugarization separator.**  
Groom, David\*, Heather Jarski and Terry McGillivray, American Crystal Sugar Company, Moorhead, MN.
- 1:56 **Performance data of the new BMA cylindrical steam dryer.**  
Krell, Lothar, Braunschweigische Maschinenbauanstalt AG, Braunschweig, Germany.
- 2:14 **Fractal applications for sugar factory decolorization processes.**  
Tzschaetzsch, Oliver<sup>1\*</sup>, Bill Jacob<sup>2</sup> and Tim Pryor<sup>2</sup>, <sup>1</sup>ESCON, Berlin, Germany and <sup>2</sup>ARI, Twin Falls, ID.
- 2:32 Break
- 2:50 Forum: **Safety**  
Moderator: Joe Huff
- 4:20 Posters
- 5:00 Conclude

**FRIDAY AFTERNOON**  
**FEBRUARY 27**  
**POSTER SESSION**  
**3:08 – 5:00**  
**Oleander Room**

**Agronomy**

*Chairperson:* Linda Hanson

1. **Sugarbeet tops help insulate roots from heat in the daytime and freezing nighttime temperatures.**  
Dean, Greg A.\* and Clark W. Millard, The Amalgamated Sugar Company LLC. Nampa, ID.
2. **Nitrogen mineralized during the Minnesota sugar beet growing season as affected by previous crops.**  
Sims, Albert L.<sup>1\*</sup>, John A. Lamb<sup>2</sup>, Mark W. Bredehoeft<sup>3</sup>, Kim R. Hoff<sup>1</sup> and Chris Dunsmore<sup>3</sup>,  
<sup>1</sup>Northwest Research and Outreach Center, University of Minnesota, Crookston, MN, <sup>2</sup>Dept. of Soil, Water and Climate, University of Minnesota, St. Paul, MN, and <sup>3</sup>Southern Minnesota Beet Sugar Cooperative, Renville, MN.
3. **Sugar beet production following wheat, corn, and soybean in the Red River Valley.**  
Sims, Albert L., Northwest Research and Outreach Center, University of Minnesota, Crookston, MN.
4. **Sugar beet production following corn, BtRR corn, sweet corn, spring wheat, and soybean in Southern Minnesota.**  
Lamb, John A.<sup>1\*</sup>, Mark W. Bredehoeft<sup>2</sup> and Chris Dunsmore<sup>2</sup>, <sup>1</sup>Dept. of Soil, Water and Climate, University of Minnesota, St. Paul, MN and <sup>2</sup>Southern Minnesota Beet Sugar Cooperative, Renville, MN.
5. **Strip tillage and high-efficiency spray irrigation in a sugarbeet-malting barley cropping system.**  
Stevens, W. Bart.\*, Robert G. Evans, William M. Iversen and Jay D. Jabro, USDA- ARS, Sidney, MT.
6. **Using strip tillage in a sugarbeet rotation in the Red River Valley of North Dakota and Minnesota.**  
Overstreet, Laura F.\*, Norman R. Cattanach, Sarah Gegner and David Franzen, Soil Science Dept., North Dakota State University, Fargo, ND.

7. **Development of an efficient sugar beet cultivation support system using the agricultural spatial information – prediction of root yield using meteorological data and satellite data.**  
Hongo, Chicharu.<sup>1\*</sup>, Katsuhisa Niwa<sup>2</sup>, Jun Yokobori<sup>2</sup>, Ryutaro Yamada<sup>3</sup> and Masato Kuwahara<sup>4</sup>, <sup>1</sup>Center for Environmental Remote Sensing, Chiba University, Chiba, Japan, <sup>2</sup>Zukosha Co. Ltd., Hokkaido, Japan, <sup>3</sup>National Agriculture and Food Research Organization, Ibaraki, Japan and <sup>4</sup>Green Techno Bank, Hokkaido, Japan.
8. **Sugarbeet pile recovery using a modified ropa maus.**  
Martin, Wayne D.\* and Keith Kalso, Michigan Sugar Company, Croswell, MI.
9. **Damage to sugar beet roots caused by harvesters; influence on rots and sugar losses during storage.**  
Olsson, Åsa.\*, Lars Persson and Robert Olsson, Nordic Beet Research Foundation, Bjärred, Sweden.
10. **Effect of row width and plant population on weeds and yields in glyphosate-resistant sugar beet.**  
Armstrong, Jon-Joseph Q. and Christy L. Sprague\*, Michigan State University, East Lansing, MI.
11. **When and what herbicides to apply for layby weed control in sugarbeets.**  
Wilson, Robert G., University of Nebraska, Scottsbluff, NE.
12. **Comparing fungicide use with defoliation as management strategies for economic control of *Cercospora* leaf spot in sugarbeet.**  
Khan, Mohamed F. R.<sup>1\*</sup> and Randy Nelson<sup>2</sup>, <sup>1</sup>Dept. of Plant Pathology, North Dakota State University, Fargo, ND and <sup>2</sup>University of Minnesota, Moorhead, MN.

#### **Entomology and Plant Pathology**

13. **Glyphosate and fungicide effects on *Cercospora* leaf spot in four glyphosate-resistant sugar beet (*Beta vulgaris*) varieties.**  
Kirk, William W.<sup>1\*</sup>, Linda E. Hanson<sup>1&2</sup> and Christy L. Sprague<sup>3</sup>, <sup>1</sup>Dept. of Plant Pathology, Michigan State University, East Lansing, MI, <sup>2</sup>USDA-ARS, SBRU, East Lansing, MI and <sup>3</sup>Dept. of Crop and Soil Sciences, Michigan State University, East Lansing, MI.

14. **The evaluation of sugar beet lines bred in Japan for resistance to damping-off caused by *Aphanomyces cochlioides*.**  
Okazaki, Kazuyuki\*, Hiroyuki Takahashi, Kazunori Taguchi, Yousuke Kuroda and Hideyuki Abe, National Agricultural Research Organization, Hokkaido, Japan.
15. **Seedling disease resistance screening assays.**  
Hanson, Linda E.\* and J. Mitchell McGrath, USDA-ARS, SBRU, East Lansing, MI.
16. **Preliminary evaluation of *Laetisaria arvalis* as chemical seed treatment alternative in sugarbeet.**  
Lartey, Robert T.<sup>1</sup>, Andrew Lenssen<sup>1</sup>, TheCan Caesar-TonThat<sup>1</sup>, Joyce Eckhoff<sup>2</sup>, Sophia Hanson<sup>1</sup> and Robert G. Evans<sup>1</sup>, <sup>1</sup>USDA-ARS, Northern Plains Agricultural Laboratory, Sidney, MT and <sup>2</sup>Eastern Agricultural Research Center, Sidney, MT.
17. **Unknown sterile fungi used as biological control agents for managing multiple root pathogens under field conditions.**  
Harveson, Robert M., University of Nebraska, Panhandle Research and Extension Center, Scottsbluff, NE.
18. **Strobilurin applications for managing *Rhizoctonia* root and crown rot in Nebraska based on soil temperature measurements.**  
Harveson, Robert M., University of Nebraska, Panhandle Research and Extension Center, Scottsbluff, NE.
19. **The effect of temperature on *Rhizoctonia* disease development and fungicide efficacy in controlling *Rhizoctonia* root rot on sugarbeet.**  
Khan, Mohamed F. R.<sup>1</sup>, Issa Qandah<sup>1</sup> and Melvin D. Bolton<sup>2\*</sup>, <sup>1</sup>Dept. of Plant Pathology, North Dakota State University and <sup>2</sup>USDA-ARS, Northern Crop Science Laboratory, Fargo, ND.
20. **Impact of glyphosate and fungicides on the disease severity of *Rhizoctonia* crown and root rot in four glyphosate-resistant sugar beet (*Beta vulgaris*) varieties.**  
Sprague, Christy L.<sup>1\*</sup>, Kelly A. Barnett<sup>1</sup>, Linda E. Hanson<sup>2</sup> and William W. Kirk<sup>3</sup>, <sup>1</sup>Dept. of Plant and Soil Sciences, Michigan State University, East Lansing, MI, <sup>2</sup>Sugar Beet & Bean Research Unit, USDA-ARS, East Lansing, MI and <sup>3</sup>Dept. of Plant Pathology, Michigan State University, East Lansing, MI.

21. **Root rot of sugar beet caused by *Fusarium culmorum*; impact of crop rotation on disease severity.**  
Persson, Lars\*, Åsa Olsson and Robert Olsson, Nordic Beet Research Foundation, Bjärred, Sweden.
22. **Rhizomania resistance in the Tandem sugar beet variety.**  
De Temmerman, Nele<sup>1</sup>, Mark Anfinrud<sup>2</sup>, Marc Meulemans<sup>1</sup>, Alexandra Burkholz<sup>1</sup>, Erik de Bruyne<sup>1</sup>, Guy Weyens<sup>1</sup>, Steve Barnes<sup>1</sup>, Stefaan Horemans<sup>1</sup>, Marc Lefebvre<sup>1</sup> and Melvin D. Bolton<sup>3\*</sup>, <sup>1</sup>SESVanderHave, Tienen, Belgium, <sup>2</sup>SESVanderHave, Fargo, ND and <sup>3</sup>USDA-ARS, Northern Crop Science Laboratory, Fargo, ND.
23. **Soil persistence of *Metarhizium anisopliae* Strain F52 applied to manage sugarbeet root maggot in a cover crop microenvironment.**  
Majumdar, Ayanava<sup>1</sup>, Mark A. Boetel<sup>2\*</sup> and Stefan T. Jaronski<sup>3</sup>, <sup>1</sup>Gulf Coast Research and Extension Center, Fairhope, AL, <sup>2</sup>Entomology Dept., North Dakota State University, Fargo, ND and <sup>3</sup>USDA-ARS, Northern Plains Agricultural Research Laboratory, Sidney, MT.

#### **Genetics and Germplasm Improvement**

24. **Molecular genetics of effective pathogen defense response in *Beta vulgaris* L.**  
Kuykendall, L. David\*, Jonathan Shao, Tatsiana Kurushko and Kate Burdekin. USDA-ARS, BARC, PSI, MPPL, Beltsville, MD.
25. **Evaluation of population structure for association mapping of resistance to curly top in sugar beet.**  
Eujayl, Imad A.<sup>1\*</sup>, Ivan Simko<sup>2</sup> and Carl A. Strausbaugh<sup>1</sup>, <sup>1</sup>USDA-ARS, Northwest Irrigation and Soils Research Laboratory, Kimberly, ID and <sup>2</sup>USDA-ARS, Crop Improvement and Protection Unit, Salinas, CA.
26. **Flow distance and crossing ability of dispersed pollen in sugar beet.**  
Takahashi, Hiroyuki<sup>1\*</sup>, Y. Shimamoto<sup>2</sup>, K. Okazaki<sup>1</sup>, K. Taguchi<sup>1</sup>, Y. Kuroda<sup>1</sup> and H. Abe<sup>1</sup>, <sup>1</sup>National Agricultural Research Center for Hokkaido Region Hokkaido, Japan and <sup>2</sup>Tokyo University of Agriculture, Hokkaido, Japan.

27. **Sugar beet germplasm collection in the National Plant Germplasm System.**

Hu, Jinguo and Barbara Hellier, USDA-ARS, Western Regional Plant Introduction Station, Pullman, WA.

**Physiology and Biotechnology**

28. **Differential sugar beet gene expression during the defense response to challenge by *Cercospora beticola*.**

Larson, Rebecca L.<sup>1</sup>, Mary E. McClintock<sup>2</sup>, Robert A. Cramer<sup>3</sup>, Amy L. Hill<sup>2</sup>, Ann Fenwick<sup>2</sup>, Patrick A. Reeves<sup>4</sup>, Kimberly M. Webb<sup>2</sup> and Lee Panella<sup>2\*</sup>.  
<sup>1</sup>Syngenta Seeds, Inc., Longmont, CO, <sup>2</sup>USDA-ARS, Sugarbeet Research Unit, Fort Collins, CO, <sup>3</sup>Montana State University, Bozeman, MT and <sup>4</sup>USDA-ARS, National Center for Genetic Resources Preservation, Fort Collins, CO.

29. **Using *Barley stripe mosaic virus* to induce gene silencing of a gene repressing flowering in sugar beet.**

Fenwick, Ann<sup>1</sup>, Rebecca L. Larson<sup>2</sup>, Patrick A. Reeves<sup>3</sup>, Amy L. Hill<sup>1</sup>, Chris Richards<sup>3</sup> and Lee Panella<sup>1\*</sup>, <sup>1</sup>USDA-ARS, Sugarbeet Research Unit, Fort Collins, CO, <sup>2</sup>Syngenta Seeds, Inc., Longmont, CO, <sup>3</sup>USDA-ARS, National Center for Genetic Resources Preservation, Fort Collins, CO.

30. **Dehydration accelerates root respiration and impacts sugarbeet raffinose metabolism.**

Lafta, Abbas M. and Karen L. Klotz\*, USDA-ARS, Northern Crop Science Laboratory, Fargo, ND.

**SATURDAY MORNING**

**FEBRUARY 28**

**POSTER SESSION**

**8:00 – 10:00**

**Oleander Room**

**See Friday Afternoon for Poster Titles**

*Chairperson:* Linda Hanson

## SATURDAY MORNING FEBRUARY 28

### Section A, Agronomy Jasmine/Magnolia

*Session Leader:* Lee Hubbell

- 9:55 Announcements
- 10:00 **Effect of *Cuscuta* spp parasitization on sugar beet root yield and sugar content.**  
Felix, Joel\* and Joey Ishida, Oregon State University/Malheur Experiment Station, Ontario, OR.
- 10:18 **Herbicide, insecticide and fungicide tank mixtures with glyphosate in glyphosate tolerant sugar beet.**  
Henningsen, J. Daniel\*, Don W. Morishita and Donald L. Shouse, University of Idaho, Twin Falls R&E Center, Twin Falls, ID.
- 10:36 **Effect of Headline (pyraclostrobin) as a yield enhancer for sugarbeets in Michigan.**  
Hubbell, Lee A.\*, James F. Stewart and David B. Wishowski, Michigan Sugar Company, Agricultural Research Center, Bay City, MI.
- 10:54 **Impact of fungicides on sugarbeet yield, quality, and storage respiration rate in the absence of disease.**  
Khan, Mohamed F. R.<sup>1\*</sup>, Larry Campbell<sup>2</sup>, Norman Cattanch<sup>3</sup> and Aaron Carlson<sup>3</sup>, <sup>1</sup>North Dakota State University and University of Minnesota, Department of Plant Pathology, Fargo, ND, <sup>2</sup>USDA, Agricultural Research Service, Northern Crop Science Laboratory, Fargo, North Dakota and <sup>3</sup>North Dakota State University, Soil Science Department, Fargo, ND.
- 11:12 **A study of the control of powdery mildew using nine commercially available fungicides and three experimentals.**  
Searle, Dennis W.<sup>1\*</sup>, Don Morishita<sup>2</sup> and Tamara Keeth<sup>2</sup>, <sup>1</sup>The Amalgamated Sugar Company LLC, Nampa, ID and <sup>2</sup>University of Idaho, Twin Falls R&E Center, Twin Falls, ID.

11:30 **Phosphorus starter fertilizer studies in the southern Red River Valley.**

Franzen, David, North Dakota State University, Fargo, ND.

11:48 ***Cercospora* leaf spot on over-wintered sugarbeets in California was controlled using tetraconazole and strobularin fungicides.**

Kaffka, Stephen R.<sup>1\*</sup> and Scott Shepard<sup>2</sup>,  
<sup>1</sup>University of California - Davis, Department of Plant Sciences, Davis, CA and <sup>2</sup>University of California Cooperative Extension, Merced, CA.

12:06 Lunch

## **SATURDAY MORNING FEBRUARY 28**

### **Section C, Entomology and Plant Pathology Orange/Lemon**

*Session Leader:* Kimberly Webb

9:55 Announcements

10:00 **Storage diseases – assessment and implications for breeding.**

Nihlgård, Maria<sup>1\*</sup>, Britt-Louise Lennefors<sup>1</sup>,  
Rebecca Larson<sup>2</sup> and Gerhard Steinrucken<sup>1</sup>,  
<sup>1</sup>Syngenta Seeds, Landskrona, Sweden and  
<sup>2</sup>Syngenta Seeds, Longmont, CO.

10:18 **Sugarbeet cultivar selection for storability and rhizomania resistance.**

Strausbaugh, Carl A.<sup>1\*</sup>, Imad A. Eujayl<sup>1</sup>, Eugene Rearick<sup>2</sup>, Paul Foote<sup>3</sup> and Dave Elison<sup>3</sup>, <sup>1</sup>USDA-ARS, NWISRL, Kimberly, ID, <sup>2</sup>Amalgamated Research Inc., Twin Falls, ID and <sup>3</sup>Amalgamated Sugar Company LLC, Paul, ID.

10:36 **Seed treatment insecticides for managing soil insect pests of sugarbeet.**

Boetel, Mark A.<sup>1</sup>, Ayanava Majumdar<sup>2\*</sup>, Robert J. Dregseth<sup>1</sup> and Allen J. Schroeder<sup>1</sup>, <sup>1</sup>Department of Entomology, North Dakota State University, Fargo, ND and <sup>2</sup>Gulf Coast Research and Extension Center, Alabama Extension Service, Fairhope, AL.

- 10:54 **Impact of Quadris and Proline fungicides on yields of sugarbeets with natural infection of Rhizoctonia crown rot.**  
Poindexter<sup>1\*</sup>, Steven S. and James F. Stewart<sup>2</sup>,  
<sup>1</sup>Michigan State University Extension, Sugarbeet Advancement, Saginaw, MI and <sup>2</sup>Michigan Sugar Company, MI.
- 11:12 **Inspire XT, a new triazole mixture fungicide for sugar beet disease control.**  
Tedford, Eric C.\*, David Laird, Brett Miller and Gary Pastushok, Syngenta Crop Protection, Greensboro, NC.
- 11:30 **Suppression of Aphanomyces root rot in Alberta.**  
Regitnig, Peter J.\* and Bryan Avison, Lantic Inc., Taber, Alberta, Canada.
- 11:48 **Intraspecific group of Rhizoctonia solani AG 2-2 and rotation with corn affect sugar beet.**  
Windels, Carol E.\* and Jason R. Brantner, University of Minnesota, Northwest Research and Outreach Center, Crookston, MN.
- 12:06 Lunch

## SATURDAY MORNING FEBRUARY 28

### Section D, Chemistry & Instrumentation Lime/Tangerine

*Session Leader:* Charley Richard

- 9:55 Announcements
- 10:00 **Use of NIR spectroscopy for on-site betaine measurement in the ACS Hillsboro molasses desugarization plant.**  
Jarski, Heather R.\*, David R. Groom and Terry D. McGillivray, American Crystal Sugar Company, Moorhead, MN.
- 10:18 **Increase sugar house throughput by measurement and automation.**  
Nielsen, Bjarne Christian, Neltec Denmark, Bevfot, Denmark.

- 10:36 **Indicators of extract storage under microbial challenge conditions: chemical and microbial changes.**  
McGillivray, Terry\*, Indrani Samaraweera and Diane Rheault, American Crystal Sugar Company, Moorhead, MN.
- 10:54 **Color increase during laboratory storage of sugarbeet processing streams.**  
McKee, Marianne\*, Ronnie Triche, Mary An Godshall and Charley Richard, Sugar Processing Research Institute, Inc., New Orleans, LA.
- 11:12 **Continuous real-time monitoring of factory water systems identifies opportunities for process and operating cost improvements.**  
Helge, John M.\*, Thomas D. Charboneau, Scott A. Niswander, Xiaojun Dang and Dennis J. Saye, Nalco Company, Naperville, IL.
- 11:30 **Sugar beet processing applications of the determination of fermentation products by liquid chromatography.**  
Rearick, D. E.\*, Cheri McKay and Diane Patterson, Amalgamated Research Inc., Twin Falls, ID.
- 11:48 Open
- 12:06 Lunch

## **SATURDAY AFTERNOON FEBRUARY 28**

### **Section A & C, Agronomy, and Entomology and Plant Pathology Jasmine/Magnolia**

*Session Leader:* Terry Butcher

- 1:15 Announcements
- 1:20 **Strip trial evaluation of Poncho Beta insecticide in the RRV.**  
Cattanach, Allan<sup>1\*</sup>, Jeff Daniels<sup>2</sup>, Mark A. Boetel<sup>3</sup> and Robert J. Dregseth<sup>3</sup>, <sup>1</sup>American Crystal Sugar Company, Moorhead, MN, <sup>2</sup>Bayer CropScience, West Des Moines, IA and <sup>3</sup>Department of Entomology, North Dakota State University, Fargo, ND.

- 1:38 **Long-term effect of a single soil application of factory lime on *Aphanomyces* root rot and sugar beet yield.**  
Windels, Carol E.<sup>1\*</sup>, Jason R. Brantner<sup>1</sup>, Albert L. Sims<sup>1</sup> and Carl A. Bradley<sup>2</sup>, <sup>1</sup>University of Minnesota, NW Research and Outreach Center, Crookston, MN and <sup>2</sup>University of Illinois, Crop Sciences Department, Urbana, IL.
- 1:56 **Volunteer glyphosate-resistant corn interference in glyphosate-resistant sugarbeet.**  
Kniss, Andrew R.\* , University of Wyoming, Department of Plant Sciences, Laramie, WY.
- 2:12 **Proteome changes in sugarbeet in response to *Beet necrotic yellow vein virus* infection.**  
Wintermantel, W. M.<sup>1\*</sup>, A. Gulati-Sakhuja<sup>1</sup>, R. L. Larson<sup>2</sup>, L. L. Hladky<sup>1</sup>, A. Nunez<sup>3</sup> and A. Hill<sup>4</sup>, <sup>1</sup>USDA-ARS, Salinas, CA, <sup>2</sup>Syngenta Seeds, Longmont, CO, <sup>3</sup>USDA-ARS-ERRC, Wyndmoor, PA and <sup>4</sup>USDA-ARS, Fort Collins, CO.
- 2:30 **Addition of a thermostabilized pectin methylesterase significantly enhances the rate of saccharification of sugar beet pulp by the commercial pectinase preparation Pectinex® Ultra SPL.**  
Kozak, Robert<sup>1\*</sup> and Craig S. Laufer<sup>1,2</sup>, <sup>1</sup>Atlantic Biomass Conversions, Frederick, MD and <sup>2</sup>Hood College, Dept. of Biology, Frederick, MD.
- 2:48 **Examining early events during beet seed germination for enhancing seedling vigor.**  
Naegele, Rachel P.<sup>1</sup> and J. Mitchell McGrath<sup>2\*</sup>, <sup>1</sup>Plant Breeding and Genetics Program, Michigan State University and <sup>2</sup>USDA-ARS, SBRU, Michigan State University, East Lansing, MI.
- 3:06 Conclude

## SATURDAY AFTERNOON FEBRUARY 28

### Agriculture and Operations Lime/Tangerine

*Session Leader:* Dan Bernhardson

- 1:15 Announcements
- 1:20 Forum: **Beet Storage**  
Moderator: Dan Bernhardson
- 3:06 Conclude

**SUNDAY MORNING  
MARCH 1**

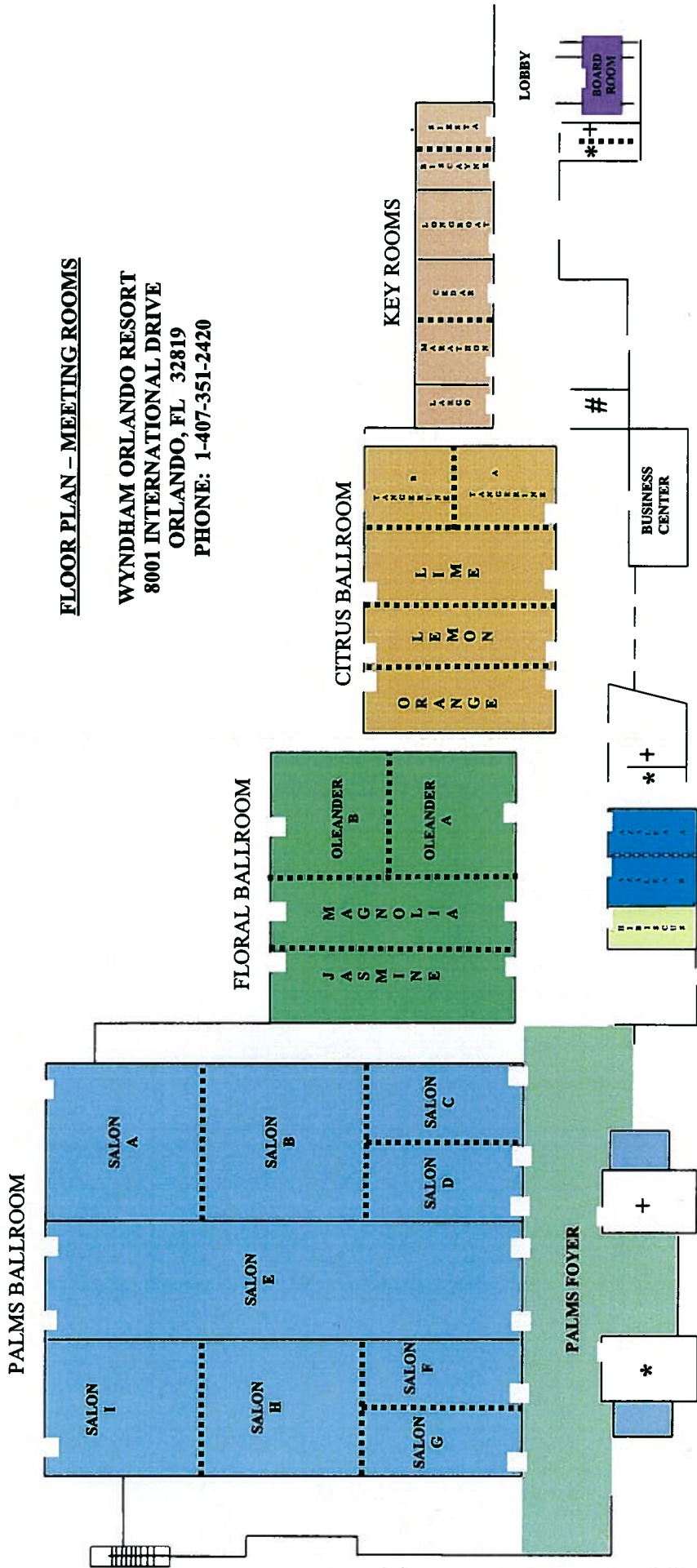
**Board of Directors Meeting  
Largo Key**

8:00 ASSBT – Old and New Board of Directors  
Breakfast Meeting

12:00 Conclude

**FLOOR PLAN - MEETING ROOMS**

**WYNDHAM ORLANDO RESORT  
8001 INTERNATIONAL DRIVE  
ORLANDO, FL 32819  
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\* Men's Restroom  
+ Women's Restroom  
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