2nd International Research Conference on Huanglongbing
January 10-14, 2011

Agenda

Day 1: Monday, 10 January 2011

7:00 am – 9:00 pm  Registration

7:00 – 8:00 am  Continental Breakfast (tour attendees only)

8:15 am – 4:30 pm  Preconference Tour (by reservation only, tour sold out)

7:00 – 9:00 pm  Welcome Reception

Day 2: Tuesday, 11 January 2011

7:30 am – 5:00 pm  Registration

7:30 – 8:30 am  Continental Breakfast

8:30 – 9:15 am  Welcome
   Introduction – Mike Sparks, Jim Graham
   Mission, Goals, and Objectives – Wayne Dixon
   Rules of the House – Jackie Burns

9:15 – 10:15 am  Opening Keynote Address
   Geographical Distribution of Huanglongbing: Before and After 2004 – Joseph Bové

10:15 – 10:30 am  Break

10:30 am – 12:00 pm  Session 1: Pathogen Genomics, Bioinformatics, Phylogenetics, and Culturing – John Hartung, Moderator
   Oral Presentations
   10:30  1.1  Genomic comparisons of the ‘Ca. Liberibacter asiaticus’ chromosome with other members of the Rhizobiales – JS Hartung, J Shao, LD Kuykendall
   10:45  1.2  Genetic and functional characterization of the znu operon in the intracellular citrus pathogen, Candidatus Liberibacter asiaticus – CM Vahling, LS Benyon, Y-P Duan
### 11:00 – 1.3
Genomic comparison of *Ca. Liberibacter asiaticus* with a draft *Ca. L. americanus* genome reveal similar prophage with likely pathogenicity factors – SJ Zhang, NA Wulff, Z Flores-Cruz, LJ Zhou, B-K Kang, LA Fleites, MD Gooch, MJ Davis, Y-P Duan, DW Gabriel

### 11:15 – 1.4
Analysis of *Candidatus Liberibacter americanus* genome - NA Wulff, S Zhang, AJ Ayres, JM Bové, DW Gabriel

### 11:30 – 1.5
Population genetics analysis of *Candidatus Liberibacter asiaticus* from multiple continents – JM Glynn, Y Bai, C Chen, Y-P Duan, EL Civerolo, H Lin

### 11:45 – 1.6
Phylogenetic analysis of Asian *Candidatus Liberibacter asiaticus*; Asian common strains are distributed in Northeast India, Papua New Guinea, and Timor-Leste – S Miyata, H Kato, K Tomimura, R Davis, MW Smith, M Weinert, T Iwanami

### Posters

1. **1.7** Bioinformatic analysis of genome sequence data for *Ca. Liberibacter asiaticus* – M Lindeberg, S Saha

2. **1.8** Genetic diversity of *Candidatus Liberibacter* asiaticus isolates from Parana State, Brazil – L Menegium, VV Marques, MM Murata, TP Barreto, G Vasquez-Souza, LA Villas-Boas, LD Paccola-Meirelles, RP Leite Jr

3. **1.9** Analysis of endophytic bacterial diversity from huanglongbing pathogen-infected citrus tissues – A Wang, Y Yin, Y Li, J Li, J Xian, Z Wang

4. **1.10** Evolving diversity of *Candidatus Liberibacter asiaticus* revealed by comparative analysis of two intragenic tandem repeat genes – LJ Zhou, CA Powell, M Hoffman, WB Li, GC Fan, B Liu, Y-P Duan

5. **1.11** *In vitro* culture of the fastidious bacteria *Candidatus Liberibacter asiaticus* in association with insect feeder cells – L Fontaine-Bodin, S Fabre, F Gattineau, M Dollet

6. **1.12** Preliminary report of cultivation of *Candidatus Liberibacter asiaticus* ‘from citrus tissue with huanglongbing’ – P Xie, Y Yin, Y Li, J Li, Z Wang

7. **1.13** Genetic diversity of *Candidatus Liberibacter asiaticus* strains – XF Wang, CY Zhou, X Deng, M Irey, J Chen

8. **1.14** Further evidence that U. S. and China populations of "Candidatus Liberibacter asiaticus" are different – X Deng, R Liu, P Zhang, J Chen

### 12:00 – 1:30 pm
Lunch and Keynote Lecture 1

RNAi strategies for insect vectors of plant pathogens – Bryce Falk

### 1:30 – 2:30 pm
Session 2: Asian Citrus Psyllid Biology and Genomics – David Hall, Moderator

#### Oral Presentations

1. **1:30 – 2.1** Phylogeographic and population genetic studies uncover two founding events in Asian citrus psyllid populations collected in the Americas – JH de León, M Sétamou, GA Gastaminza, J Buenahora, S Cáceres, PT Yamamoto, GA Logarzo, CRW Stańgret

2. **1:45 – 2.2** Alteration of microbiome of *Bactericera cockerelli* and *Diaphorina citri* based on *Candidatus Liberibacter* sp. infection – D Hail, W Hunter, B Bextine

3. **2:00 – 2.3** Oral uptake of dsRNA increases mortality in diet fed psyllids – RG Shatters Jr, CA Powell, D Borovsky

Posters

2.5 A new method for short-term rearing of psyllid adults and nymphs on detached citrus leaves and young terminal shoots – E-D Ammar, DG Hall

2.6 Comparative analysis of Asian citrus psyllid and potato psyllid antennae – J Arras, W Hunter, B Bextine

2.7 The emerging psyllid genome: RNA-interference and insect biology – WB Hunter, BR Bextine, RG Shatters, J Reese, KS Shelby, DG Hall

2.8 Bacterial population diversity in Diaphorina citri: analysis by PCR-DGGE and RFLP methodology – Z Wang, S Tian, T Liu, Y Yin

2:30 – 2:45 pm Break

2:45 – 4:45 pm Session 3: Asian Citrus Psyllid Ecology and Transmission – Lukasz Stelinski, Moderator

Oral Presentations

2:45 3.1 Antennal responses of Diaphorina citri to host plant volatiles recorded using a coupled gas chromatograph electroantennogram detector system – PS Robbins, RT Alessandro, SL Lapointe

3:00 3.2 Population dynamics of the Asian citrus psyllid and potential generations in Northern Sinaloa, Mexico – E Cortez-Mondaca, JI López-Arroyo, J Pérez-Márquez, VM González

3:15 3.3 Localization of Candidatus Liberibacter asiaticus in dissected organs of its psyllid vector Diaphorina citri using fluorescent in situ hybridization and quantitative PCR – E-D Ammar, RG Shatters, DG Hall

3:30 3.4 Interactions of the Asian citrus psyllid, Diaphorina citri, with Candidatus Liberibacter asiaticus – KS Pelz-Stelinski, ME Rogers

3:45 3.5 Seasonal changes in numbers of Asian citrus psyllids carrying Candidatus Liberibacter asiaticus – TA Ebert, RH Bransky, ME Rogers

4:00 3.6 Understanding Diaphorina citri-Candidatus Liberibacter asiaticus interactions and D. citri behavior for managing huanglongbing (HLB) in Florida – RS Mann, KS Pelz-Stelinski, RL Rouseff, LL Stelinski

4:15 3.7 Effects of soil-applied and foliar-applied insecticides on Asian citrus psyllid (Diaphorina citri) feeding behavior and their possible implication for HLB transmission – RH Serikawa, DM Okuma, EA Backus, ME Rogers

4:30 3.8 Effect of insecticides and mineral oil on probing behavior of Diaphorina citri Kuwayama (Hemiptera: Psyllidae) in citrus – MP de Miranda, MR Felippe, RB Garcia, PT Yamamoto, JRS Lopes

Posters

3.9 A new detached-leaf assay method to test the inoculativity of psyllids with Candidatus Liberibacter asiaticus associated with huanglongbing disease – E-D Ammar, A Walter, DG Hall

3.10 Preliminary study of comparative acquisition of ‘Candidatus Liberibacter asiaticus’ and ‘Ca. L. americanus’ by Diaphorina citri under different temperatures – JC Barbosa, B Eckstein, J Belasque Jr, AB Filho

3.11 Host range of Diaphorina citri Kuwayama and Leuonota fagaceae on citrus and Zanthoxylum spp. – DN Russell, SE Halbert, PD Roberts

Difference of gender and effect of photoperiod on Asian citrus psyllid feeding behavior – **DM Okuma**, RH Serikawa, ME Rogers

Seasonal abundance of *Diaphorina citri* (Hemiptera: Psyllidae) and natural enemies in citrus groves of Yucatán, Mexico – **J Jasso-Argumedo**, M Lozano-Contreras, H Barroso-Aké, JL López-Arroyo

Host plant usage by adult psyllids in South Texas – **DB Thomas**

**4:45 – 6:00 pm**  
Poster Session 1

**7:00 – 8:15 pm**  
Conference Dinner

## Day 3: Wednesday, 12 January 2011

**7:00 am – 5:00 pm**  
Registration

**7:00 – 8:00 am**  
Continental Breakfast

### Oral Presentations

**8:00 – 10:15 am**  
Session 4: Survey, Detection and Diagnosis – **John da Graça**, Moderator

**8:00 4.1** Development and reactivity of polyclonal antibodies based on OMP sequences of *Candidatus Liberibacter asiaticus* – **HD Coletta-Filho**, LA Peroni, AA De Souza, MA Takita, DR Stach-Machado

**8:15 4.2** Development of single-chain antibody fragments (scFvs) against ‘*Candidatus Liberibacter asiaticus*’ by phage display – Q Yuan, R Jordon, R Brlansky, O Minenko, **J Hartung**

**8:30 4.3** Highly sensitive detection by real-time PCR targeting the multiple tandem-repeats of two prophage region genes of the citrus huanglongbing disease bacterium, ‘*Candidatus Liberibacter asiaticus*’ – **JK Morgan**, L Zhou, RG Shatters Jr, K Manjunath, Y-P Duan

**8:45 4.4** Comparison of different extraction and assay protocols in different laboratories to develop a standardized assay for detection of huanglongbing-associated bacteria from psyllids – **K Manjunath**, M Irey, C Ramadugu, RF Lee, C Levesque, B Brady, M Polek, H Lin, E Civerolo, M Afunian, G Vidalakis

**9:00 4.5** Assessment of various spectroscopic techniques for detection of HLB – **GH Poole**, SA Hawkins, WR Windham, J Heitschmidt, JP Albano, B Park, KC Lawrence, **TR Gottwald**

**9:15 4.6** Seasonal variability in HLB testing data in plant and psyllid samples in Florida – **M Irey**, T Gast, J Cote, P Gadea, O Santiago, L Briefman, J Graham

**9:30 4.7** Survey to estimate the rate of HLB infection in Florida citrus groves – **M Irey**, RA Morris, M Estes

**9:45 4.8** Two survey protocols to detect newly introduced HLB and other exotic pathogens and pests – **T Gottwald**, T Riley, M Irey, S Parnell, D Hall

**10:00 4.9** Distribution of ‘*Candidatus Liberibacter americanus*’ and ‘Ca. L. asiaticus’ in foliage of naturally infected citrus trees – **MC Sousa**, MVF Lemos, GF Frare, MA Santos, **SA Lopes**

### Posters

**4.10** A perspective on the activities of Texas HLB Diagnostic Laboratory – **M Kunta**, **JV da Graça**, M Sétemou, M Skaria
<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.11</td>
<td>Two new real-time PCR-based surveillance systems for “Candidatus Liberibacter” species detection</td>
<td>H Lin, Y Bai, EL Civerolo</td>
</tr>
<tr>
<td>4.12</td>
<td>Detection of Candidatus Liberibacter solanacearum in potato psyllid isolated from sticky traps</td>
<td>K Kwok, CS LeVesque, K Manjunath, M Irey, M Polek</td>
</tr>
<tr>
<td>4.13</td>
<td>Detection of Candidatus Liberibacter asiaticus (Las) on yellow sticky traps by real-time PCR</td>
<td>M Irey, P Gadea, D Hall</td>
</tr>
<tr>
<td>4.14</td>
<td>Validation of the starch-iodine reaction for field pre-diagnosis of huanglongbing in citrus of Mexico</td>
<td>RX Loredo-Salazar, A Uribe-Bustamante, CG Rodríguez-Quibrera, SA Curtí-Diaz, El Alanís-Martínez, JJ Velázquez-Monreal, JI López-Arroyo</td>
</tr>
<tr>
<td>4.15</td>
<td>Detecting HLB using NIR remote sensing</td>
<td>J Gonzalez-Mora, CS Dima, M Irey, R Ehsani</td>
</tr>
<tr>
<td>4.16</td>
<td>Isothermal detection of huanglongbing in psyllids and citrus tree samples</td>
<td>PF Russell, N McGowen, R Bohannon</td>
</tr>
<tr>
<td>4.17</td>
<td>Assessment of ‘Candidatus Liberibacter asiaticus’ in the psyllids, Diaphorina citri collected from Muraya paniculata in Thailand</td>
<td>A Jantasorn, Y-P Duan, M Hoffman, Z Zhang, T Puttamuk, N Thaveechai</td>
</tr>
<tr>
<td>4.18</td>
<td>Liberibacter reservoirs in cities and villages in the state of São Paulo, Brazil</td>
<td>SA Lopes, GF Frare, LEA Camargo, NA Wulff, DC Teixeira, RB Bassanezi, GAC Beattie, AJ Ayres</td>
</tr>
<tr>
<td>4.19</td>
<td>Pictorial gallery of foliar HLB symptoms on various citrus varieties and citrus relatives</td>
<td>DJ Robl, TD Riley, H Gomez</td>
</tr>
</tbody>
</table>

**10:15 – 10:30 am** Break

**10:30 – 11:45 pm** Session 5: Economics, Fruit Quality, and Crop Loss – Mike Irey, Moderator

### Oral Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30</td>
<td>Evaluation of chemical flavor compounds in orange juice from multiple harvests of Hamlin and Valencia fruit from HLB-symptomatic versus healthy trees</td>
<td>E Baldwin, J Bai, S Dea, A Plotto, J Manthey, R Rouseff, M Irey</td>
</tr>
<tr>
<td>10:45</td>
<td>Evaluation of bitterness caused by huanglongbing disease in orange juice</td>
<td>S Dea, A Plotto, J Manthey, E Baldwin, M Irey</td>
</tr>
<tr>
<td>11:00</td>
<td>Sensory evaluation of juice made with fruit from huanglongbing (HLB) affected trees</td>
<td>A Plotto, F Valim, R Rouseff, S Dea, J Manthey, J Narciso, J Bai, M Irey, E Baldwin</td>
</tr>
<tr>
<td>11:15</td>
<td>Economic considerations to treating HLB with the standard protocol or an enhanced foliar nutritional program</td>
<td>RA Morris, RP Muraro</td>
</tr>
</tbody>
</table>

### Posters

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:30</td>
<td>Use of electronic sensor technology to discriminate between juices from huanglongbing infected and healthy orange trees</td>
<td>J Bai, S Dea, A Plotto, E Baldwin, M Irey</td>
</tr>
<tr>
<td>5.6</td>
<td>A regional epidemiological approach for yield loss estimates due to Candidatus Liberibacter under different risk scenarios</td>
<td>G Mora-Aguilera, G Acevedo, J López-Arroyo, J Velazquez, R Gómez, M Robles, D Salcedo</td>
</tr>
</tbody>
</table>

**12:00 – 1:30 pm** Lunch and Keynote Lecture 2
Lessons from Zebra Chip: Prospects for HLB Management – Dennis Gross

1:30 – 2:30 pm
Session 6: Epidemiology – Tim Gottwald, Moderator

Oral Presentations
1:30  6.1 Five years of experience with huanglongbing in Florida: current assessment; how did we get here? – SE Halbert, K Manjunath, C Ramadugu, RF Lee
1:45  6.2 Designing sampling schemes to maximize the probability of early detection of a huanglongbing outbreak – SR Parnell, TR Gottwald, F van den Bosch
2:00  6.3 Spatial increase and temporal spread of HLB affected by management practices – T Gottwald, C Gilligan, M Irey
2:15  6.4 “Candidatus Liberibacter africanus” subspecies capense on Calodendrum capense in South Africa – MNB Phahladira, R Viljoen, G Pietersen

Posters
6.5 Distribution of psyllids positive for Candidatus Liberibacter asiaticus in citrus groves in southwest Florida – SE Halbert, K Manjunath, C Ramadugu, P Mears, RF Lee
6.6 Seasonal prevalence of citrus huanglongbing (Candidatus Liberibacter asiaticus) in a central Florida sweet orange grove – V Parkunan, N-Y Wang, TA Ebert, ME Rogers, MM Dewdney
6.7 A mathematical model for transmission of HLB by psyllids – C Chiyaka, B Singer, S Halbert, AHC van Bruggen
6.8 Potential spread of huanglongbing through soil – U Nunes da Rocha, ER Dickstein, AHC van Bruggen

2:30 – 2:45 pm
Break

2:45 – 4:30 pm
Session 7: International Citrus Industries, Regulation, and Grower Experiences – MaryLou Polek, Moderator

Oral Presentations
3:00  7.2 Distribution of citrus huanglongbing in the Dominican Republic – L Matos, ME Hilf, X Cayetano, A Feliz, H Puello, F Méndez, J Borbón, SY Folimonova
3:30  7.4 Spreading and symptoms of huanglongbing in Mexican lime groves in the state of Colima, Mexico – MM Robels Gonzalez, JJ Velázquez Monreal, MA Manzanilla Ramirez, M Orozco Santos, R Flores Virgen, VM Medina Urrutia, SH Carrillo Medrano
3:45  7.5 The Asian Citrus Psyllid/huanglongbing detection, treatment, and regulatory program in California – T Galindo
4:00  7.6 Detection and reporting of Asian citrus psyllid and huanglongbing in commercial citrus within California: an industry program – BJ Taylor, ML Polek, T Batkin
4:15  7.7 Citrus Health Research Forum: a national research effort – M Polek, G Wisler

IRCHLB program 6
The identification and distribution of citrus greening disease in Jamaica – AP Oberheim, **SE Brown**, WA McLaughlin

Fitting a spatial analysis grid for research on huanglongbing in Mexico – **C Aldama-Aguilera**, LA Olvera-Vargas, MG Galindo-Mendoza

**4:30 – 5:45 pm**  
Poster Session 2

**6:00 pm**  
Dinner on your own

---

**Day 4: Thursday, 13 January 2011**

**7:00 am – 5:00 pm**  
Registration

**7:00 – 8:00 am**  
Continental Breakfast

**8:00 – 10:00 am**  
Session 8: Host-Pathogen Interactions – Bill Dawson, Moderator

**Oral Presentations**

**8:00**  
8.1 Examination of stages of HLB disease development in citrus trees – **SY Folimonova**, DS Achor, ME Hilf

**8:15**  
8.2 New defense response insights of sweet orange infected with two *Candidatus Liberibacter* species – VS Mafra, PK Martins, EC Locali-Fabris, M Ribeiro-Alves, CS Francisco, J Freitas-Astúa, LT Kishi, **MA Machado**

**8:30**  
8.3 Differential expression of potential virulence genes of *Candidatus Liberibacter asiaticus* in infected plants and psyllids – A Sreedharan, S Wei, **N Wang**

**8:45**  
8.4 Metabolome analysis of tolerant and susceptible citrus varieties in response to infection with *Candidatus Liberibacter asiaticus* – **U Albrecht**, K Skogerson, KD Bowman, O Fiehn

**9:00**  
8.5 Deep transcriptome profiling of citrus fruit in response to huanglongbing disease – F Martinelli, SL Uratsu, U Albrecht, RL Reagan, E Leicht, R D’Souza, KD Bowman, **AM Dandekar**

**9:15**  
8.6 Carbohydrate metabolism and related gene expression changes in huanglongbing-affected sweet orange – **C Chen**, J Fan, Q Yu, R Bransky, Z-G Li, F Gmitter Jr

**9:30**  
8.7 Analysis of colonization of citrus seeds by ‘Ca. Liberibacter asiaticus’ and its possible role in seed transmission – **ME Hilf**

**9:45**  
8.8 Natural transmission of huanglongbing caused by ‘*Candidatus Liberibacter americanus*’ and ‘Ca. L. asiaticus’ and with two different sources of inoculum plants (*Citrus sinensis* or *Murraya exotica*) – MCG Gasparoto, **RB Bassanezi**, L Amorim, LH Montesino, SA Lourenço, NA Wulff, A Bergamin Filho

**Posters**

**8.9**  
Calllose predominates over phloem protein 2 in phloem plugging of trees affected with huanglongbing – **LG Albrigo**, DS Achor

**8.10**  
Influence of HLB on the oligosaccharides of citrus leaves – **PF Cancalon**, C Bryan, C Haun, J Zhang

**8.11**  
Gene expression in *Citrus sinensis* fruit tissues harvested from huanglongbing-affected trees – **H-L Liao**, JK Burns

**8.12**  
Expression profiling of host response of citrus to *Candidatus Liberibacter asiaticus* infection – **V Aritua**, **N Wang**
8.13 Arabidopsis responses to the HLB-relative Candidatus Liberibacter psyllaurous – S Patne, KL Manjunath, ML Roose
8.14 Comparative studies of the endophytic microbial community structures in huanglongbing-infected and non-infected citrus plants – X-F Zheng, B Liu, C-Q Ruan, Y-Z Lin, R-F Xiao, Y-J Zhu, G-C Fan, Z-J Cai, Y-P Duan
8.15 HLB influences the diversity, structure, and function of the bacterial community associated with citrus – P Trivedi, N Wang
8.16 Functional studies of putative effectors of ‘Candidatus Liberibacter asiaticus’ using citrus tristeza virus vector – S Hajeri, Y-P Duan, S Gowda
8.17 First report of a new host (Pithecellobium luctidum Benth) of the citrus huanglongbing bacterium, ‘Candidatus Liberibacter asiaticus’ – GC Fan, ZJ Cai, QY Weng, C Ke, B Liu, LJ Zhou, Y-P Duan
8.18 Citrus seed grafting a simple technology for testing seed transmission of citrus greening/HLB and of other pathogenic agents – M Bar-Joseph, C Robertson, M Hilf, WO Dawson
8.19 Lack of transmission of HLB by citrus seed – JH Graham, EG Johnson, DB Bright, MS Irey
8.20 Visualization of ’Ca. Liberibacter asiaticus’ in immature citrus seed coats by Fluorescent In Situ Hybridization (FISH) of 16S rRNA – ME Hilf
8.21 Rapid, sensitive, and non-radioactive tissue-blot diagnostic method for the detection of citrus greening disease (HLB) – S Gowda, N Nageswara Rao, S Miyata, DK Ghosh, MS Irey, ME Rogers, SM Garnsey

10:00 – 10:15 am Break

10:15 – 12:00 pm Session 9: Asian Citrus Psyllid Management – Michael Rogers, Moderator

10:15 9.1 A database for analysis of Diaphorina citri population monitoring data from commercial groves – T Gast, M Irey, H Hou
10:30 9.2 RNAi strategy in citrus trees to reduce Hemipteran pests: psyllids and leafhoppers – W Hunter, E Glick, BR Bextine, N Paldi
10:45 9.3 Application of insecticidal sprays to citrus in winter provide significant reduction in Asian citrus psyllid Diaphorina citri populations and opportunity for additional suppression through conservative and augmentative biological control – JA Qureshi, PA Stansly
11:00 9.4 Studies on imidacloprid and management of ACP in California – F Byrne, J Morse, J Bethke
11:30 9.6 Asian citrus psyllid (ACP) control: potential use of systemic insecticides in citrus bearing trees – PT Yamamoto, MP Miranda, MR Felippe
11:45 9.7 Insecticide resistance and susceptibility of uninfected and Candidatus Liberibacter asiaticus-infected Asian citrus psyllid in Florida – S Tiwari, ME Rogers, LL Stelinski

Posters

9.8 Development of area-wide Asian citrus psyllid management strategies in Texas – DW Bartels, M Sétamou, MA Ciomperlik, JV da Graça
| 9.9 | Asian citrus psyllid management strategies for California citrus growing regions – **EE Grafton-Cardwell**, JG Morse, BJ Taylor |
| 9.10 | Area wide management of Asian citrus psyllid in Southwest Florida – **PA Stansly**, HA Arevalo, M Zekri, R Hamel |
| 9.11 | Evaluation of low volume sprayers used in citrus psyllid control applications – CHoffmann, B Fritz, D Martin, R Atwood, T Hurner, M Ledebuhr, M Tandy, **JL Jackson**, G Wisler |
| 9.13 | Host specificity testing of *Tamarixia radiata* for the classical biological control of Asian citrus psyllid, *Diaphorina citri*, in California – **RR Pandey**, MS Hoddle |
| 9.14 | Predators in non-commercial citrus and preliminary evaluation of their potential against the Asian citrus psyllid in Texas – **RS Pfannenstiel**, TR Unruh |
| 9.15 | Suitability of *Diaphorina citri*, *Toxoptera citricida*, and *Aphis spiraeola* as prey for *Hippodamia convergens* – **JA Qureshi**, PA Stansly |
| 9.16 | Molecular analysis of *Tamarixia radiata* from America uncovers extensive haplotype variation: multiple groups? – **JH de León**, GA Gastaminza, M Sétamou, S Cáceres, LHB Kanga, J Buenahora, JR Parra, GA Logarzo, CRW Stańgret |
| 9.18 | RNAi – evaluating injection into citrus trees and grapevine to target psyllids and leafhoppers – **W Hunter**, E Stover, E Glick, BR Bextine, N Paldi |
| 9.19 | Using novel photonic fence technology to protect foundation block and nursery stock from Asian citrus psyllid – **E Johanson**, J Patt, E Mullen, P Rutschman, N Pegram |
| 9.20 | Development of a *Diaphorina citri*-specific molecular diagnostic marker for gut content examinations – **JH de León**, D Thomas, M Sétamou, JR Hagler |
| 9.21 | Development of a pathogen dispenser to control Asian citrus psyllid (ACP) in residential citrus – **J Patt**, M Jackson, C Dunlap, W Meikle, J Adamczyk |
| 9.22 | Producing new flush at will in citrus to study ACP-plant interactions – NSA Malik, **J Brockington**, JL Perez, RL Mangan |
| 9.23 | Thresholds for vector control in young citrus treated for symptoms of HLB with a nutrient/SAR package – **C Monzó**, HA Arevalo, PA Stansly |
| 9.24 | Experimental release rate analysis of volatile compounds from wax-based dispensers – **RD Neuman**, AB Shelton, DR Mills |
| 9.25 | Vegetation canopy airflow modeling for airborne dispersion of DMDS – **AB Shelton**, RD Neuman |
| 9.26 | Methods and systems to deliver volatile compounds for biological control strategies – **RD Neuman**, AB Shelton, RH Zee |

**12:00 – 1:30 pm**  
Lunch and Keynote Lecture 3:  
Viral Vectors and Prospects for HLB Control – **Bill Dawson**

**1:30 – 3:00 pm**  
**Session 10: HLB Management** – Tim Spann, Moderator
1:30 10.1  Trunk injection of copper sulfate pentahydrate (Magna-Bon) affects expression of HLB – **JH Graham**, MS Irey, F Meile

1:45 10.2  Chemical compounds effective against the citrus huanglongbing bacterium, *'Candidatus Liberibacter asiaticus' in planta* – **M Zhang**, CA Powell, L Zhou, Z He, E Stover, **Y-P Duan**

2:00 10.3  Regional HLB management on the effectiveness of local strategies of inoculum reduction and vector control – **RB Bassanezi**, PT Yamamoto, LH Montesino, TR Gottwald, L Amorim, A Bergamin Filho

2:15 10.4  The theory of managing huanglongbing with plant nutrition and real world success in Florida – **TM Spann**, RE Rouse, AW Schumann

2:30 10.5  Nutritional treatments: inconsequential effect on HLB control and promote areawide titer increase and disease spread – **T Gottwald**, M Irey, J Graham, B Wood

2:45 10.6  Nutritional approaches for management of huanglongbing (citrus greening) in China – **Y Xia**, R Sequeira

Posters

10.7  First steps towards rescuing Las-infected citrus germplasm – **G McCollum**, E Stover

10.8  Screening chemical compounds against citrus huanglongbing using an optimized grafting system from *'Candidatus Liberibacter asiaticus'-infected citrus scions* – M-Q Zhang, Y-P Duan, **CA Powell**

10.9  Discovery of antimicrobial small molecules against *Candidatus Liberibacter asiaticus* by screening novel SecA inhibitors using structure based design – N Akula, **N Wang**

10.10  The low pressure trunk injection system: a technology to fight against HLB – **J Tomas**

10.11  Does systemic acquired resistance (SAR) control HLB disease development? – **JH Graham**, MM Myers, MS Irey, TR Gottwald

10.12  Use of growth-priming agents to extend the growth of HLB-affected citrus – **Z He**, M-Q Zhang, E Viana, T Merlin, Y-P Duan, PJ Stoffella, A Liptay, CA Powell

10.13  Evaluation of foliar zinc and manganese for control of HLB or associated symptom development – **EG Johnson**, MS Irey, T Gast, DB Bright, JH Graham

10.14  Role of nutritional and insecticidal treatments in mitigation of HLB: main effects and interactions – **PA Stansly**, HA Arevalo, RE Rouse

10.15  Use of horticultural practices in citriculture to survive huanglongbing – **ES Stuchi**, EA Girardi

10.16  Critical control point (CCP) analysis to build a model system for measuring citrus propagation risk mitigations II. Sampling and monitoring – **LG Brown**, EM Jones, HM Hartzog

10.17  The need of an epidemi-surveillance network to prevent huanglongbing arrival in the south of the Mediterranean Basin – **M Dollet**, B Aubert, E Imbert, F Gatineau

10.18  Presence of *Candidatus Liberibacter asiaticus* in *Diaphorina citri* Kuwayama collected from plants for sale in Florida – **SE Halbert**, K Manjunath, C Ramadugu, RF Lee

10.19  A model system for studying huanglongbing – **K Manjunath**, C Ramadugu, G Kund, J Trumble, RF Lee

3:00 – 3:15 pm  Break

IRCHLB program
### Session 11: Host Tolerance and Resistance – Fred Gmitter, Moderator

<table>
<thead>
<tr>
<th>3:15 – 5:00 pm</th>
<th>Oral Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:15</td>
<td>11.1</td>
</tr>
<tr>
<td>Incidence of huanglongbing on several sweet orange cultivars budded onto different rootstocks at the Citrus Experimental Station (EECB), Bebedouro, São Paulo, Brazil – <strong>ES Stuchi</strong>, ET Reiff, OR Sempionato, EA Girardi, LG Parolin, DA Toledo</td>
<td></td>
</tr>
<tr>
<td>3:30</td>
<td>11.2</td>
</tr>
<tr>
<td>Host preference and suitability of native North American Rutaceae for the development of the Asian citrus psyllid, <em>Diaphorina citri</em> Kuwayama – JL Sandoval Il, M Sétamou, <strong>JV da Graça</strong></td>
<td></td>
</tr>
<tr>
<td>3:45</td>
<td>11.3</td>
</tr>
<tr>
<td>Progress using transgenic approaches and biotechnology-facilitated conventional breeding to develop genetic resistance/tolerance to HLB in commercial citrus – <strong>JW Gresser</strong>, M Dutt, A Shohael, GA Barthe</td>
<td></td>
</tr>
<tr>
<td>4:00</td>
<td>11.4</td>
</tr>
<tr>
<td>Promoter regulation of the beta-glucoronidase (GUS) gene and antimicrobial peptide D4E1 in a citrus rootstock – <strong>LS Benyon</strong>, E Stover, K Bowman, G McCollum, R Niedz</td>
<td></td>
</tr>
<tr>
<td>4:15</td>
<td>11.5</td>
</tr>
<tr>
<td>Responses of transgenic ‘Hamlin’ sweet orange plants expressing the <em>attacin A</em> gene to <em>Candidatus</em> Liberibacter asiaticus infection – <strong>RTA Felipe</strong>, FA Mourão-Filho, EV Pereira Jr, SA Lopes, MC Sousa, BMJ Mendes</td>
<td></td>
</tr>
<tr>
<td>4:30</td>
<td>11.6</td>
</tr>
<tr>
<td>Screening antimicrobial peptides <em>in vitro</em> for use in developing huanglongbing and citrus canker resistant transgenic citrus – <strong>E Stover</strong>, R Stange, G McCollum, J Jaynes</td>
<td></td>
</tr>
<tr>
<td>4:45</td>
<td>11.7</td>
</tr>
<tr>
<td>Response of citrus transgenic plants expressing <em>STX 1A</em> gene to <em>Candidatus</em> Liberibacter asiaticus – <strong>VV Marques</strong>, TZ Bagio, VH Sugahara, GV Vasquez, L Meneguim, L Grange, J Bespalhok, AK Kobayashi, LFP Pereira, LGE Vieira, RP Leite Jr</td>
<td></td>
</tr>
</tbody>
</table>

### Posters

<table>
<thead>
<tr>
<th>11.8</th>
<th>Rootstocks and pruning effects on huanglongbing incidence on Tahiti limes in Bebedouro, Northern São Paulo State, Brazil – <strong>ES Stuchi</strong>, ET Reiff, OR Sempionato, T Cantuarias-Avilés, EA Girardi, LG Parolin, DA Toledo</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.9</td>
<td><em>Candidatus</em> Liberibacter asiaticus (CLas) titer in field HLB-exposed commercial citrus cultivars – <strong>E Stover</strong>, G McCollum, RG Shatters Jr, D Hall, Y-P Duan</td>
</tr>
<tr>
<td>11.10</td>
<td>Host response of different citrus genotypes and relatives to <em>Candidatus</em> Liberibacter asiaticus infection – RL Boscariol-Camargo, M Cristofani-Yaly, A Malosso, <strong>HD Coletta Filho</strong>, MA Machado</td>
</tr>
<tr>
<td>11.11</td>
<td><em>Candidatus</em> Liberibacter asiaticus (CLas) titer in <em>Poncirus trifoliata</em> and <em>P. trifoliata</em> hybrids: inferences on components of HLB resistance – <strong>E Stover</strong>, RG Shatters Jr, G McCollum, D Hall, Y-P Duan</td>
</tr>
<tr>
<td>11.12</td>
<td>The role of salicylic acid and systemic acquired resistance in the response of citrus to HLB – <strong>A Khalaf</strong>, VJ Febres, RH Brlansky, FG Gmitter, GA Moore</td>
</tr>
<tr>
<td>11.13</td>
<td>Observations of <em>Citrus × Poncirus</em> hybrid tolerance to infection with <em>Candidatus</em> Liberibacter asiaticus – <strong>KD Bowman</strong>, U Albrecht</td>
</tr>
<tr>
<td>11.15</td>
<td>Genome sequences of haploid Clementine mandarin and diploid sweet orange – <strong>FG Gmitter Jr</strong></td>
</tr>
<tr>
<td>11.16</td>
<td>Exploring metabolic profiles of plant tissue with increased or decreased susceptibility – NSA Malik, JL Perez, <strong>J Brockington</strong>, RL Mangan</td>
</tr>
</tbody>
</table>

### 5:00 – 6:15 pm

**Poster Session 3**
7:00 – 8:15 pm  Conference Banquet and Keynote Lecture 4
Understanding the Lifestyle of Plant Pathogens Towards Successful Management of Vectored Plant Diseases – Steven Lindow

8:15 – 9:30 pm  Entertainment

Day 5: Friday, 14 January 2011
Grower Day

7:00 am – noon  Registration

7:00 – 8:00 am  Continental Breakfast

8:00 am – 12:45 pm  Session 12: Grower Day – Megan Dewdney, Moderator

8:00 – 9:30 am  Take Home Messages: What Can Be Implemented Now or in the Near Future?
8:00  HLB Pathology Lessons – M Dewdney/T Schubert
8:30  Entomology Lessons – LL Stelinski/M Setamou
9:00  Horticulture Lessons – C Oswalt/E Stover

9:30 – 11:15 am  Managing HLB in Florida and Brazil
9:30  The Florida Experience – M Irey
10:00  The Brazil Experience – R Bassanezi

10:30 – 10:45 am  Break

10:45  Citrus Health Management Areas – ME Rogers
11:15 – 12:15 pm  WORKSHOP: Nutrition and Tree Health – TM Spann/JH Graham/Y Xia
12:15 – 12:45 pm  Grower/Industry Responses – Jerry Newlin/Bobby Barben/Others

12:45 – 2:15 pm  Lunch and Keynote Lecture 5
Sustaining Productivity in an Endemic HLB Environment – J Ayres

2:15 – 5:00 pm  CHRP HLB Research Coordinating Group Meeting – G Wisler, M Polek