77th Annual Meeting of the

Northeastern Division

The American Phytopathological Society

Program and Abstracts

November 1-3, 2017

Hôtel Palace Royal
775, avenue Honoré-Mercier
Québec, Canada G1R 6A5

Northeastern Division Officers
2016-2017

Margaret T. McGrath, President
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Local Arrangements 2017

Russell J. Tweddell - Chair
Danny Rioux
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Maxime Delisle-Houde
Vanessa Tremblay

ON THE COVER: Fire blight (*Erwinia amylovora*) on apple tree
(courtesy of Kari Peter, Penn State University, Biglerville, PA)

Program Design

R. E. Marra and A. B. Gould

WEDNESDAY, NOVEMBER 1, 2017

7:30 – noon	**Tree Diseases: Tour of Quebec City's eastern areas** meet in Lobby at 7:30 AM. (pre-registration required)
8:00 – noon	**Quebec City Tour** meet in Lobby at 8:00 AM (pre-registration requested)
noon – 6:00	**REGISTRATION –** Ballroom Hall
1:00 – 5:00	**EXTENSION/INDUSTRY MEETING –** Amboise Room Open to anyone interested in applied plant pathology. Presiding: Angela Madeiras and Erika Saalau Rojas
5:30 – 8:00	**DIVISION SOCIAL –** Second Floor Hallway Light refreshments and cash bar
8:00 - ?	**DINNER** (On Your Own) **GRADUATE STUDENT NIGHT ON THE TOWN** (Meet in lobby)

THURSDAY, NOVEMBER 2, 2017

7:00 – 8:00	**CONTINENTAL BUFFET BREAKFAST –** Ballroom Hall
7:30 – 5:00	**REGISTRATION –** Ballroom Hall
8:00 – 8:05	**WELCOME AND OPENING REMARKS –** Valençay-Chambord Meg McGrath, NED-APS President
8:05 – 10:00	**GRADUATE STUDENT AWARD COMPETITION, SESSION 1** Valençay-Chambord Presiding: Wade Elmer
8:05 – 8:10	**INTRODUCTION**
8:10 – 8:25	**Evaluation of different salts for the control of lettuce varnish spot: when phytotoxicity rules.** M. DELISLE-HOUDE (1), V. Toussaint (2), H. Affia (1), R. J. Tweddell (1), (1) Université Laval, Québec, QC, Canada; (2) Agric & Agri-Food Canada, Saint-Jean-sur-Richelieu, QC, Canada
8:25 – 8:40	**Interaction between soybean cyst nematode (*Heterodera glycines*) and Phytophthora root rot (*Phytophthora sojae*) on soybean.** C. AUDETTE (1), R. R. Bélanger (2), B. Mimee (1), (1) Agriculture and Agri-Food Canada, Saint-Jean-sur-Richelieu, QC, Canada; (2) Université Laval, Quebec, QC, Canada

8:40 – 8:55	***Potato leafroll virus* alters small RNA production in its aphid vector during plant viral infection to promote virus dispersal.** J. WILSON (1), P. Pinheiro (2), Y. Xu (1), Y. Zheng (3), A. R. Rebelo (3), S. Fattahalhosseini (3), A. Kruse (1), R. Santos Dos Silva (3), Y. Xu (3), J. Giovannoni (3,4,5), Z. Fei (1,3), S. Gray (1,6), M. Cilia (1,3,6), (1) Section of Plant Pathology and Plant-Microbe Biology, Cornell University, Ithaca, NY, USA; (2) Embrapa Rice and Beans, Santo Antonio de Goias, BRAZIL; (3) Boyce Thompson Institute, Ithaca, NY, USA; (4) Plant, Soil and Nutrition Research Unit, USDA-ARS, Ithaca, NY, USA; (5) Section of Plant Biology, Cornell University, Ithaca, NY, USA; (6) Emerging Pest and Pathogen Research Unit, USDA-ARS, Ithaca, NY, USA
8:55 – 9:10	**Host range and genetic characterization of the stem and bulb nematode, *Ditylenchus dipsaci*, from Eastern Canada.** S. POIRIER (1), N. Dauphinais (1), H. Van Der Heyden (2), G. Belair (1), V. Gravel (3), B. Mimee (1), (1) Agriculture and Agri-Food Canada, Saint-Jean-sur-Richelieu, QC, Canada; (2) Compagnie de recherche Phytodata, Sherrington,, QC, Canada; (3) Department of Plant Science, McGill University, Sainte-Anne-de-Bellevue, QC, Canada
9:10 – 9:25	**Dollar Spot Control Affected by Bentgrass Susceptibility and Fungicide Programming.** J. HEMPFLING, J. Murphy, B. Clarke, Rutgers University, New Brunswick, NJ, USA
9:25 – 9:40	**Comparative transcriptomic analysis of soybean root response to *Phytophthora sojae* reveals new insights into silicon-mediated disease resistance** A. RASOOLIZADEH (1), C. Labbe (1), H. Sonah (1), F. Belzile (1), R. Deshmukh (1), J. G. Menzies (4), R. R. Bélanger (1), (1) Université Laval, Québec, QC, Canada; (4) Agric & Agri-Food Canada, Morden, MB, Canada
9:40 – 9:55	**Development of molecular assays to detect the presence and viability of *Phytophthora ramorum* and *Grosmannia clavigera*.** B. WONG (1), R. C. Hamelin (1,2), (1) Institut de Biologie Intégrative des Systèmes, Université Laval, Québec, Canada; (2) Department of Forest and Conservation Sciences, University of British Columbia, Vancouver, BC, Canada
9:55 – 10:10	**BREAK** for refreshments – Ballroom Hall

10:10 – 12:00	**GRADUATE STUDENT AWARD COMPETITION, SESSION 2** Valençay-Chambord Presiding: Nicholas Brazee
10:10 – 10:15	**INTRODUCTION**
10:15 – 10:30	**Application of CRISPR-Cas9 Technology to Study the *Epichloë Festucae* Antifungal Protein Gene.** R. WANG, Z. Tian, B. Clarke, F. C. Belanger, Rutgers University, New Brunswick, NJ, USA
10:30 – 10:45	**Host community as a predictor of *Fusarium graminearum* populations.** M. FULCHER, G. C. Bergstrom. Cornell University, Ithaca, NY, USA
10:45 – 11:00	**Susceptibility of fine fescue cultivars to *Colletotrichum cereale*, an aggressive pathogen causing Anthracnose Disease.** T. TATE (1), S. Yin (2), W. A. Meyer (1), B. Clarke (1), D. Ward (3), L. A. Beirn (1,4), (1) Rutgers University, New Brunswick, NJ, USA; (2) Beijing Forestry University, Beijing, CHINA; (3) Rutgers University, Bridgeton, NJ, USA; (4) Syngenta, Washington, NJ, USA
11:00 – 11:15	**Survival of *Peronospora belbahrii* sporangia affected by temperature and relative humidity.** K. S. ALLEN, G. Higgins, L. J. Ma, R. L. Wick, University of Massachusetts Amherst, Amherst, MA, USA
11:15 – 11:30	**Development of a NGS-based detection method to identify exotic forest pathogens from fungal spores suspended in air and occurring on insect vectors.** E. D. TREMBLAY (1), M. O. Duceppe (1), J. Berube (2), T. Kimoto (3), C. Lemieux (4), G. J. Bilodeau (1), (1) Canadian Food Inspection Agency, Ottawa, ON, Canada; (2) Canadian Forest Service, Ste Foy, QC, Canada; (3) Canadian Food Inspection Agency, Burnaby, BC, Canada; (4) Universite Laval Institut de Biologie Integrative et des systèmes, Quebec, QC, Canada
11:30 – 11:45	**DNA sequence analysis of microbiomes on the surface of sour rot-infected grapes.** I. O'BRYON (1), M. Hall (2), W. F. Wilcox (2), L. E. Cadle-Davidson (3), M. Osier (1), (1) Thomas H. Gosnell School of Life Sciences, Rochester Institute of Technology, Rochester, NY, USA; (2) School of Integrative Plant Science State Agr. Expt. Sta., Cornell University, Geneva, NY, USA; (3) USDA Grape Genetics Research Unit, Geneva, NY, USA
11:45 – 12:00	**Understanding *Byssochlamys nivea*: A new problem for apples?** M. BIANGO-DANIELS (1), A. Snyder (1,2), K. D. Cox (3), R. Worobo (1), K. T. Hodge (1), (1) Cornell University, Ithaca, NY, USA; (2) Ohio State University, Columbus, OH, USA; (3) Cornell University, Geneva, NY, USA
12:00 – 1:00	**LUNCH** – Restaurant Beffroi Steak House

1:10 – 2:30	**GRADUATE STUDENT AWARD COMPETITION, SESSION 3** Valençay-Chambord Presiding: Margery Daughtrey
1:10 – 1:15	**INTRODUCTION**
1:15 – 1:30	**A programmable *Arabidopsis* resistance response conserved in barley?** M. CARTER (1), A. Chapman (2), M. Helm (3), G. Fuerst (2,4), R. W. Innes (3), A. J. Bogdanove (1), R. P. Wise (2,4), (1) Cornell University, Ithaca, NY, USA; (2) Iowa State University, Ames, IA, USA; (3) Indiana University, Bloomington, IN, USA; (4) USDA ARS, Ames, IA, USA
1:30 – 1:45	**Development of microsatellite markers for quantifying genetic diversity of *Pleospora betae*.** L. KOENICK (1), N. Vaghefi (2), N. L. Knight (1), L. du Toit (3), S. J. Pethybridge (1), (1) Cornell University, Plant Pathology & Plant Microbe Biology Section, Geneva, NY, USA; (2) Centre for Crop Health, University of Southern Queensland, Queensland, Australia; (3) Washington State University, Mount Vernon, WA, USA
1:45 – 2:00	**Phylogeography of *Ophiostoma novo-ulmi*, the fungal pathogen responsible of Dutch Elm Disease.** P. HESSENAUER (1), C. Landry (1), R. C. Hamelin (1,2), Louis Bernier (1), Philippe Tanguay (3), Anna Fijarczyk (1), and Hélène Martin (1). (1) Institut de Biologie Intégrative des Systèmes (IBIS), Université Laval, Québec, QC, Canada, (2) Department of Forest and Conservation Sciences, University of British Columbia, Vancouver, BC, Canada, (3) Natural Resources Canada, Canadian Forest Service, Laurentian Forestry Centre, Quebec, QC, Canada
2:00 – 2:15	**Discriminant haplotypes to identify common races of *Phytophthora sojae* found in Canada.** G. ARSENAULT-LABRECQUE (1), H. Sonah (1), A. Lebreton (1), C. Dussault-Benoit (1), G. Marchand (2), A. G. Xue (3), B. J. Knaus (4), N. Grunwald (4), R. R. Bélanger (1), (1) Université Laval, Québec, QC, Canada; (2) Agriculture and Agri-Food Canada, Harrow, ON, Canada; (3) Agriculture and Agri-Food Canada, Ottawa, ON, Canada; (4) USDA ARS, Corvallis, OR, USA
2:15 – 2:30	**A new phenotyping procedure to identify QTLs conditioning soybean resistance against *Phytophthora sojae*.** M. DE RONNE (1), A. Lebreton (1), C. Labbe (1), J. Laur (1), H. Sonah (1), R. Deshmukh (1), C. Dussault-Benoit (1), D. Govare-Monroe (1), L. O'donoughue (2), F. Belzile (1), R. R. Bélanger (1), (1) Université Laval, Quebec, QC, Canada; (2) CEROM, Saint-Mathieu-de-Beloeil, QC, Canada
2:30 – 2:50	**BREAK** for refreshments – Ballroom Hall

2:55 – 3:45	**CONCURRENT CONTRIBUTED PAPER SESSION 1** Valençay-Chambord Presiding: Neil Schultes
2:55 – 3:00	**INTRODUCTION**
3:00 – 3:15	**Structural characterization and expression analysis during pathogenesis of *Phytophthora sojae* CAZyme- and microRNA-encoding genes.** B. Horowitz, H. Komar, C. Madison, M. D. OSPINA-GIRALDO, Lafayette College, Easton, PA, USA
3:15 – 3:30	**Multidrug resistance conferred by a xenobiotic detoxification pathway in *Sclerotinia homoeocarpa,* casual agent of dollar spot.** G. JUNG (1), H. Sang (2), J. P. Hulvey (1), R. Green (1), T. Chang (4). (1) University of Massachusetts, Amherst, MA, USA; (2) Michigan State University, East Lansing, MI, USA; (3) Kyungpook National University, Sangju, Gyungbuk, Korea
3:30 – 3:45	**Partial cross-resistance to SDHI fungicides in *Sclerotinia homoeocarpa* field isolates from USA and Japan.** J. T. POPKO (1), H. Sang (2), J. Lee (1), G. Jung (1). (1) University of Massachusetts, Amherst, MA, USA; (2) Michigan State University, East Lansing, MI, USA
2:55 – 3:45	**CONCURRENT CONTRIBUTED PAPER SESSION 2 –** Amboise Presiding: Danny Rioux
2:55 – 3:00	**INTRODUCTION**
3:00 – 3:15	***Calonectria pseudonaviculata* dispersal mechanisms and implications for boxwood blight management.** J. A. LAMONDIA, K. Maurer. The Connecticut Agricultural Experiment Station, Windsor, CT, USA
3:15 – 3:30	**Boxwood blight in the Long Island, New York landscape.** M. L. DAUGHTREY, P. Rychlik, L. Hyatt. Cornell University LIHREC, Riverhead, NY, USA
3:30 – 3:45	**PCR Detection of *Erwinia amylovora* in Apple Rootstocks at Fire Blight Infection Foci Edges After 2016 Epidemic in North-Eastern New York.** Ž. PAVLOVIĆ (1), S. G. Aćimović (1), C. Meredith (1), A. Wallis (2,3), C. Leffelman (1), (1) Cornell University, Hudson Valley Research Laboratory, Highland, NY, USA; (2) Cornell Cooperative Extension, Eastern NY Commercial Horticulture Program, Plattsburgh, NY, USA; (3) Cornell University, Barton Lab, Geneva, NY, USA

4:00 – 5:30	**NED-APS BUSINESS MEETING –** Chenonceau Room Presiding: Meg McGrath, NED-APS President
5:30 – 6:30	**GRADUATE STUDENT AWARDS COMMITTEE MEETING –** Buckingham Room
7:00 – 9:30	**SOCIAL, BANQUET, AND AWARDS –** Ballroom Hall and Ballroom

FRIDAY, NOVEMBER 3, 2017

7:00 – 8:00 **CONTINENTAL BUFFET BREAKFAST –** Ballroom Hall

8:10 – 10:15 **CONCURRENT CONTRIBUTED PAPER SESSION 3 –** Valençay-Chambord
Presiding: Srđjan Aćimović

8:10 – 8:15 **INTRODUCTION**

8:15 – 8:30 ***Estimate:* A new mobile app to facilitate disease severity evaluation.**
S. J. PETHYBRIDGE (1), S. C. Nelson (2), (1) Cornell University, Plant Pathology & Plant Microbe Biology Section, Geneva, NY, USA; (2) University of Hawaii, Honolulu, HI, USA

8:30 – 8:45 **Temporal shifts in genetic structure and differentiation of *Cercospora beticola* populations in table beet fields of New York.**
N. L. KNIGHT (1), N. Vaghefi (2), Z. R. Hansen (1), J. Kikkert (3), S. J. Pethybridge (1), (1) Cornell University, Plant Pathology & Plant Microbe Biology Section, Geneva, NY, USA; (2) Centre for Crop Health, University of Southern Queensland, Queensland, AUSTRALIA; (3) Cornell Cooperative Extension, Canandaigua, NY, USA

8:45 – 9:00 **Update on successful strategies for the management of potato pink rot.**
B. Crane (1), R. D. PETERS (1), L. Kawchuk (2), K. I. Al-Mughrabi (3), (1) Agriculture and Agri-Food Canada, Charlottetown, PE, Canada; (2) Agriculture & Agri-food Canada, Lethbridge, AB, Canada; (3) New Brunswick, Agriculture, Aquaculture & Fisheries, Wicklow, NB, Canada

9:00 – 9:15 **Control of potato blackleg and soft rot, caused by *Dickeya* spp and *Pectobacterium* spp, by monitoring seed lots and seed tuber treatments.**
L. TSROR, Ministry of Agriculture; Agricultural Research Organization, Volcani, Gilat Research Center, Negev, Israel

9:15 – 9:30 **Induced Viable But Nonculturable (VBNC) State in *Dickeya dianthicola*.**
T. GE (1), J. Hao (1), S. Johnson (2), (1) University of Maine, ORONO, ME, USA; (2) University of Maine Cooperative Extension, Presque Isle, ME, USA

9:30 – 9:45 **A TaqMan Real-Time PCR for Specific Detection of *Pantoea allii*, a Bacterial Pathogen of Onion.**
J. T. TAMBONG, S. Rahimi, R. Xu, S. Hsieh, Agriculture and Agri-Food Canada, Ottawa, ON, Canada

9:45 – 10:00 ***Pseudozyma flocculosa*, a new paradigm in the mode of action of biological control agents.**
J. LAUR (1), G. Bojarajan Ramakrishnan (1), C. Labbe (1), C. Dussault-Benoit (1), D. Govare-Monroe (1), F. Lefebvre (1), P. D. Spanu (2), R. R. Bélanger (1), (1) Université Laval, Quebec, QC, Canada; (2) Imperial College of Sci Tech & Medicine, London, United Kingdom

10:00 – 10:15 **Investigating fungicide resistance in cucurbit downy mildew pathogen on Long Island, NY.**
Z. SEXTON, M. T. McGrath, Cornell University, Riverhead, NY, USA

8:10 – 10:00 **CONCURRENT CONTRIBUTED PAPER SESSION 4 –** Amboise
Presiding: Richard Bélanger

8:10 – 8:15 **INTRODUCTION**

8:15 – 8:30 **Antifungal potential of essential oils of *Cymbopogon citratus* and *Eucalyptus citriodora* against Brown Spot disease of Rice.**
R. ABDUL MAJEED (1,2), A. Ali Shahid (1), M. Paret (3), M. Akhter (2), M. Saleem Haider (1). (1) Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan; (2) Rice Research Institute, kala shah kaku, Pakistan; (3) North Florida Research and Education Center, University of Florida, Quincy, FL, USA

8:30 – 8:45 **Functional analysis of *Erwinia amylovora* nucleobase cation symporter 2 transporters.**
N. P. SCHULTES (1), A. Stoffer (2), C. Alexander (2), I. Gatchell (2), A. Funk (2), G. Mourad (2). (1) The Connecticut Agricultural Experiment Station, New Haven, CT, USA; (2) Department of Biology, Indiana University-Purdue University Fort Wayne, Ft. Wayne, IN, USA

8:45 – 9:00 **The bioSAFE project: developing tools for the genomic biosurveillance of forest invasive alien pests in Canada.**
L. BERNIER (1), P. Tanguay (2), I. Porth (1), W. Hintz (3), C. Landry (4), M. Blanchette (5), R. C. Hamelin (6). (1) Université Laval, Centre d'Étude de la Forêt (CEF), Quebec, QC, Canada; (2) Natural Resources Canada, Canadian Forest Service, Laurentian Forestry Centre, Quebec, QC, Canada; (3) University of Victoria Centre for Forest Biology, Victoria, BC, Canada; (4) Institut de biologie intégrative et des systèmes, Université Laval, Quebec, QC, Canada; (5) McGill University, School of Computer Science, Montreal, QC, Canada; (6) Department of Forest and Conservation Sciences, University of British Columbia, Vancouver, BC, Canada

9:00 – 9:15	**Recovery of butternut and protection against the canker in Quebec: What have we learned after 6 years?** D. RIOUX (1), N. Nadeau-Thibodeau (1), M. Blais (1), M. Lagacé (1), K. Klimaszewska (1), P. Tanguay (1), K. Sambaraju (1), P. DesRochers (1), L. Bernier (2), (1) Natural Resources Canada, Canadian Forest Service, Laurentian Forestry Centre, Quebec, QC, Canada; (2) Université Laval, Centre d'Étude de la Forêt (CEF), Quebec, QC, Canada
9:15 – 9:30	**Spatio-temporal severity patterns and association of certain key factors with butternut canker severity in Quebec.** K. SAMBARAJU, P. DesRochers, D. Rioux, Natural Resources Canada, Canadian Forest Service, Laurentian Forestry Centre, Quebec, QC, Canada
9:30 – 9:45	**Molecular evaluation of butternut canker sporulation under trees submitted to different release treatments.** P. TANGUAY (1), M. Blais (1), A. Potvin (1), D. Stewart (1), D. Walker (2), N. Nadeau-Thibodeau (1), P. DesRochers (1), D. Rioux (1), (1) Natural Resources Canada, Canadian Forest Service, Laurentian Forestry Centre, Quebec, QC, Canada; (2) Department of Biology, Tennessee Technological University, Cookeville, TN, USA
9:45 – 10:00	**Detection and identification of '*Candidatus* Phytoplasma asteris'-related phytoplasma associated with a witches' broom disease of cassava in Thailand.** E. ALVAREZ (1), J. Pardo (2), (1) CIAT, Cali, COLOMBIA; (2) CIAT, Palmira, Colombia
10:15 – 10:30	**BREAK** for refreshments – Ballroom Hall

10:40 – 1:05	**SYMPOSIUM: RESURGING DISEASES IN A CHANGING WORLD** Valençay-Chambord Presiding: Valérie Gravel
10:40 – 10:45	**INTRODUCTION –** Valérie Gravel
10:45 – 11:15	**Assay tool development for emerging and re-emerging diseases.** G. BILODEAU, Canadian Food Inspection Agency, Ottawa, ON, Canada
11:15 – 11:45	**Climate change and connection to plant pathology.** G. BOURGEOIS, Agriculture and Agri-Food Canada, Quebec, QC, Canada
11:45 – 12:15	**Strawberry powdery mildews (*Podosphaera aphanis*): Past, Present, and Future.** O. CARISSE (1), M. Gendron (2), V. Gravel (2), M. L. Fall (1), (1) Agriculture & Agri-Food Canada, Saint-Jean-sur-Richelieu, QC; (2) McGill University, Saint-Jean-sur-Richelieu, QC, Canada.
12:15 – 12:45	**Not the same old fire blight?** K. A. PETER, Penn State University, Biglerville, PA, USA
12:45 – 1:00	**Panel Discussion**
1:00 – 1:05	**Closing Remarks –** Valérie Gravel
1:05	**ADJOURN**