

*University of Pretoria – Max Planck Institute for Chemical Ecology,
Germany- Partner group inauguration and workshop on*

Chemical Interactions among Plants, Insects and Fungi

Program

Monday, 31.10.2016

Venue: UP auditorium, Engineering 1

- 8:00 Registration
- 9:00 Welcome and Announcements
- 9:05 Welcome address by Prof Brenda Wingfield, SARChI Chair in Fungal Genomics,
Department of Genetics, University of Pretoria

Session 1: Pest Management (Chair: Robin Crewe)

- 9:15 **Chemical basis of recognition of two different host plants in the melon fly
*Zeugodacus cucurbitae***
Baldwyn Torto, International Centre of Insect Physiology and Ecology (ICIPE),
Nairobi, Kenya
- 9:45 **The Eucalyptus Cossid moth, *Coryphodema tristis*, pheromone**
Marc Bouwer, Forestry and Agricultural Biotechnology Institute, University of
Pretoria
- 10:05 **Developing a push-pull system to manage western flower thrips in plum
orchards**
Elleunorah Allsopp, Agricultural Research Council, Infruitec-Nietvoorbij,
Stellenbosch
- 10:25 **Plant chemical signals modulate root-knot nematode herbivory**
Ruth Kihika, International Centre of Insect Physiology and Ecology (ICIPE),
Nairobi, Kenya

- 10:45 Coffee/tea
- 11:10 **Investigation into the non-consumptive effect of predatory mites, on citrus thrips: do semiochemicals play a role?**
Sean Thackeray, Rhodes University/Citrus Research International
- 11:30 **Root exudates of cultivated tomato contribute to host-seeking behavior of root knot nematodes**
Hillary K. Kirwa, International Centre of Insect Physiology and Ecology (ICIPE), Nairobi, Kenya
- 11:50 **Effect of plant- and animal- based odours on the response of Afro-tropical mosquito vectors of infectious diseases**
Juliah Wanjiru Jacob, International Centre of Insect Physiology and Ecology (ICIPE), Nairobi, Kenya
- 12:10 **The role of floral and fruit scent compounds as mosquito attractants: developing new methods for monitoring mosquito populations**
Priyanka Pachuwah, University of KwaZulu-Natal
- 12:30 Lunch
- Session 2: Insect-Microbe interactions (Chair: Almuth Hammerbacher)**
- 14:00 **Tree killing bark beetles and their associated fungi: partners in crime?**
Jonathan Gershenson, Department of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany
- 14:30 **Behavioral response of bark beetles (*Ips typographus*) to commonly associated Ophiosomatoid fungi**
Dineshkumar Kandasamy, Department of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany
- 14:50 **Ceratocystidaceae and their arthropod associates: specificity in loose interactions?**
Jolanda Roux, Forestry and Agricultural Biotechnology Institute, University of Pretoria
- 15:10 **Discussing endophytic fungi-mediated anti-insect activities**
Felix Nchu, Cape Peninsula University of Technology

15:30 Coffee/tea

16:00 **Bio-efficacy of selected Entomopathogenic fungi against grapevine pests**

Siphokazi Moloinyane, Cape Peninsula University of Technology

16:20 **Plant-Pathogen-Herbivore interaction: Combined attack of black poplar trees and its consequences on volatile emission and herbivore behavior**

Franziska Eberl, Department of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany

16:40 **Optimising anti-tick activities of extracts of cultivated *Tulbaghia violacea* using entomopathogenic fungi**

Pumla Staffa, Cape Peninsula University of Technology

Tuesday, 1.11.2016

Venue: UP auditorium Engineering 1

Session 3: Plant defense (Chair: Almuth Hammerbacher)

- 8:30 **Conifer defenses against insects: genomics, molecular biology, biochemistry, and chemical ecology of oleoresin**
Joerg Bohlmann, Michael Smith Laboratories, University of British Columbia, Vancouver, BC Canada
- 9:00 **Phenolic defense in black poplar against biotrophic rust fungus (*Melampsora larici-populina*)**
Chhana Ullah, Department of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany
- 9:20 **Defense mechanisms in *Eucalyptus grandis* against an insect pest and fungal pathogen**
Sanushka Naidoo, Department of Genetics, University of Pretoria
- 9:40 **Catabolism of Flavonoids in *Arabidopsis thaliana* by *Sclerotinia sclerotiorum***
Jingyuan Chen, Department of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany
- 10:00 **Biotransformation of allelopathic compounds by *Arabidopsis thaliana***
Andriy Volkov, Department of Molecular Genetics and Biotechnology, Yuriy Fedkovych Chernivtsi National University, Ukraine
- 10:20 Coffee/Tea

Session 4: Floral Interactions (Chair: Christian Pirk)

- 10:50 **Floral mimicry systems that imitate decay and death: The role of volatile chemical signals for pollinator specialisation**
Andreas Jürgens, Technische Universität Darmstadt, Plant Chemical Ecology, School of Life Sciences, University of KwaZulu-Natal, South Africa

- 11:10 **Research at UKZN on the chemical ecology of plant-pollinator interactions**
Steven Johnson, University of KwaZulu Natal
- 11:30 **Scent chemistry of the bizarre carrion-mimic *Sarcophyte sanguinea* (Balanophoraceae): the importance of dimethyl trisulfide and dimethyl tetrasulfide for the attraction of carrion beetles and flies.**
Adam Shuttleworth, University of KwaZulu Natal
- 11:50 **The role of volatiles in the dispersal of fig seeds (Moraceae) by frugivorous bats in southern Africa**
Keeveshnee Govender, University of KwaZulu-Natal
- 12:10 **An overview of the role of cone volatiles in the pollination ecology of *Encephalartos* Lehm.**
Terence Suinyuy, University of KwaZulu-Natal
- 12:30 Lunch

Session 5: Ecophysiology (Chair: Lawrie Wright)

- 13:30 **Whole-plant C allocation priorities: do secondary metabolites and VOCs matter?**
Henrik Hartmann, Department of Biogeochemical Processes, Max Planck Institute for Biogeochemistry, Jena, Germany
- 13:50 **Regulation of the MEP pathway in isoprene producing conifers under drought stress**
Erica Perreca, Department of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany
- 14:10 **The isoprenoid pathway intermediate, 2-C-methyl-D-erythritol-2,4-cyclodiphosphate, is diverted to form glycosidic and non-glycosidic metabolites that alter defense signaling in *Arabidopsis thaliana***
Diego Gonzalez, Department of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany
- 14:30 **High-throughput UHPLC-MS/MS analysis of phytohormones: reliable tool, challenges and limits**
Michael Reichelt, Department of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany

14:50 Coffee/tea

Session 6: Social insects (Chair: Marc Bouwer)

15:20 **Pheromones and reproductive isolation: Case studies of bark and woodboring beetles**

Jeremy Allison, Natural Resources Canada, Great Lakes Forestry Center, Ontario, Canada

15:50 **Social parasitism in honey bees driven by conditional caste differentiation in the expression of social pheromones**

Robin Crewe, SIRG, Department of Zoology and Entomology, University of Pretoria

16:10 **Primer and releaser effects of pheromones regulating reproduction**

Christian Pirk, Department of Zoology and Entomology, University of Pretoria

16:30 **Trail pheromones and sex pheromones in termites: glandular origin, chemical nature, and potential use in pest management**

David Sillam-Dussès, Sorbonne University, Paris, France

16:50 **Closing remarks**

18:00 **Conference Dinner**

Wednesday, 2.11.2016

Venue: FABI Auditorium and Courtyard

9:00 Assembly in the auditorium: Panel discussion

- Advancing Chemical Ecology capacity in Africa
- African Chemical Ecology Society
- Hosting the International Chemical Ecology Conference in 2020

Moderators: Bernard Slippers, Christian Pirk, Robin Crewe and Baldwyn Torto

10:00 Round table discussions (Themes will be determined by popular interest)

11:00 Coffee/tea

13:00 Lunch