

## 15th International Frankia and Actinorhizal Plants Meeting

### PROGRAM

#### Sunday 19 October, 2008

- 16:00 – 18:30 Registration  
19:30 Welcome Gathering (departure from Biblioteca Sarmiento)

#### Monday 20<sup>th</sup> October 2008

- 8:30 – 8:45 OPENING by an authority of Centro Regional Universitario Bariloche, Universidad Nacional del Comahue  
8:45 – 9:00 Introduction, Luis Wall
- 9:00 – 11:45 First session:  
9:00 – 12:15 **ECOLOGY OF FRANKIA AND HOST PLANTS**  
Moderator: **Jeffrey O. Dawson**
- 9:00 – 9:30 *Alnus viridis* increases the nutrient availability and productivity of sub-Arctic lakes in southwestern Alaska.  
D.A. Devotta, F. Sheng Hu, A. Kent, D.S. Kaufman, P. Walsh, M. Lisac and **J.O. Dawson**
- 9:30 – 10:00 Ecology of *Hippophae salicifolia* D. DON of temperate and sub-Alpine forests of north Sikkim Himalayas - A case study.  
**B.C. Basistha**, N.P. Sharma, M.L. Arrawatia and A. Sen
- 10:00 – 10:15 COFFEE
- 10:15 – 10:45 *Frankia* – from soil to symbiosis.  
E.E. Chaia, L.G Wall and **K. Huss-Danell**
- 10:45 -11:15 Fate of *Frankia* strains in soil and rhizosphere of non-actinorhizal plant  
**B.S. Mirza**, A. Welsh and D. Hahn
- 11:15 – 11:45 *Casuarina* Research and Application in China  
**C. Zhong**, Z. Yong, Y. Chen, Q. Jiang, K. Pinyopusarerk, C. Franche and D. Boguzs
- 11:45 – 12:15 Variation of <sup>15</sup>N natural abundance in leaves and nodules of actinorhizal shrubs in northwest Patagonia.  
E.E. **Chaia** and D. Myrold
- 12:30 – 13:45 LUNCH (at Familia BIANCHI Restaurant)

- 14:00 – 16:15 Second session:  
**PHYSIOLOGY OF *FRANKIA* , HOST PLANTS AND NODULES**  
 Moderator: Kerstin Huss-Danell
- 14:00 – 14:30 Interactive effects of elevated CO<sub>2</sub>, phosphorus deficiency, and soil drought on nodulation and nitrogenase activity in *Alnus hirsuta* and *Alnus maximowiczii*  
**H. Tobita**, A. Uemura, M. Kitao, S. Kitaoka and H. Utsugi
- 14:30– 15:00 Study of early interactions and recognition phenomena in actinorhizal symbioses with different infection pathways  
**L. Gabbarini** and L.G. Wall
- 15:00 – 15:15 Coffe (just coffe to weak you up)
- 15:15 – 15:45 Wild nodules can be broken: Proteomics of nitrogen metabolism in symbiosis  
**D.R. Benson**, J.E. Mastronunzio and Y. Huang
- 15:45 - 16:15 Genetic organization, biodiversity, phylogeny and expression of genes involved in siderophores biosynthesis in *Frankia* spp.  
 E. Bagnarol, H.B. Guerrero, P. Pujic, M. A. Cruz Hernandez, J. Popovici, P. Fournier, P. Normand and **M. P. Fernández**
- 16:15 – 16:45 COFEE
- 16:45 – 18:30 POSTERS (Museo de la Patagonia)
- 18:30 – 19:30 Small Tour to Dinner Place (Departure from Museo de la Patagonia)
- 19:30 DINNER (“Curanto” at Colonia Suiza)

## Tuesday 21 October 2008

Third session:  
**MOLECULAR BIOLOGY AND BIOCHEMISTRY OF HOSTS**  
 Moderator: David Benson

- 8:30 - 9:00 *Datisca glomerata* as an actinorhizal model plant  
 T. Persson, M. Plaszczyca, K. Demchenko, B. Rashidi, M. Plaszczyca and **K. Pawlowski**
- 9:00 – 9:30 Early events in actinorhizal symbiosis  
 H. Gherbi, V. Hocher, S. Svistonoff, L. Laplaze, P. Doumas, F. Auguy, M. Nambiar-Veetil, C. Zhong, V. Vasissayre, C. Franche and **D. Bogusz**
- 9:30 – 10:00 Characterization of four defence-related genes expressed in root

nodules of *Casuarina glauca*

P. Santos, A. Fortunato, I. Graça, S.M. Martins, M.M. Gouveia, F. Auguy, D. Bogusz, C. Pereira Pinto Ricardo, K. Pawlowski and **A. Ribeiro**

- 10:00 – 10:30 COFFEE
- 10:30 – 11:00 Searching for plant and bacterial signals involved in actinorhizal symbioses  
**S. Svistoonoff**, L. Tisa, P. Dumas, L. Laplaze, F. Auguy, C. Franche and D. Bogusz
- 11:00 – 11:30 Progress towards the genetic transformation of the actinorhizal tree *Casuarina equisetifolia*  
**C. Zhong**, M. Nambiar-Veetil, Q. Jiang, Y. Zhang, V. Vaissayre, D. Bogusz and Claudine Franche
- 11:45 – 13:15 LUNCH (at Familia BIANCHI Restaurante)
- 13:30 – 16:15 Fourth session  
**MOLECULAR BIOLOGY AND BIOCHEMISTRY OF *FRANKIA* AND RELATED BACTERIA (part 1)**  
Moderator: Didier BOGUSZ
- 13:30 – 14:00 Post-genomic exploration of the actinorhizal symbiosis: combining in silico approaches with wet-laboratory approaches  
**L.S. Tisa**
- 14:00 – 14:30 Expression pattern modification in *Frankia alni* in vitro and in symbiosis  
N. Alloisio, C. Queiroux, P. Fournier, P. Pujic, **M. Fernández** and P. Normand
- 14:30 – 14:45 Coffee (just to wake you up)
- 14:45 – 15:15 Cross-talk between oxidative stress and iron availability – the regulation of catalatic activity in *Frankia* ACN14a and Ccl3  
**C.L. Santos**, A. Sellstedt, P. Normand, P. Moradas-Ferreira and F. Tavares
- 15:15 – 15:45 Identification of small, non coding, regulatory RNAs in prokaryotes. What about *Frankia* spp.?  
**C. Valverde** and G. Parisi
- 15:45 – 16:15 Transformation of *Frankia* sp. strain Ccl3 by fusion marker genes using liquid culture selection  
**Ken-ichi Kucho**, Kentaro Kakoi, Masatoshi Yamaura, Shiro Higashi, Toshiki Uchiumi, and Mikiko Abe

16:15 - 16:45 COFFEE

16:45 – 17:15 Introduction to the field trip: Northwestern Patagonian environments  
Invited speaker: Karina Speziale

17:15 – 19:00 POSTERS (Museo de la Patagonia)

DINNER Free (by yourself)

**Wednesday 22 October 2008**

9:00 – 18:30 Field trip to Northwestern Patagonian environments

DINNER Free (By yourself)

**Thursday 23 October 2008**

8:30 -10:00 **MOLECULAR BIOLOGY AND BIOCHEMISTRY OF *FRANKIA* AND RELATED BACTERIA (part 2)**

Moderator: Louis TISA

8:30 – 9:00 Diversity of frankiae in nodules of *Morella pensylvanica* grown on soils from 5 continents

**A. Welsh**, B. Mirza, J. Rieder, M. Paschke and D. Hahn

9:00 – 9:30 Genomic Analysis of *Frankia* by AFLP and MLSA

**H.H. Bautista**, A. Mendoza, P. Normand, M. Valdés and M. Fernández

9:30 – 10:00 Actinomycetes different from *Frankia* induce effective nodulation in *Alnus acuminata* and can be genetically transformed.

D. Valdés, L. Imanishi, L. Gabbarini, K. Huss-Danell and **L.G. Wall**

10:00 – 10:30 COFFEE

10:30 – 11:30 ROUND TABLE DISCUSSION – CLOSE UP

11:30 – 13:00 LUNCH (at Familia BIANCHI Restaurant)

13:00 – 19:30 Lake Trip to Isla Victoria  
Invited Speaker: Andrea Relva

20:30 CONFERENCE DINNER (Asado)

## POSTER SESSION

Genetic groups of *Frankia* within the nodules of *C. equisetifolia* growing in Mexico  
Y. Trujillo, A. Mendoza and M. Valdés

Spatial Distribution of Symbiotic *Frankia* among *Alnus tenuifolia* Nodules in Two  
Alaskan Successional Habitats  
M. Anderson, R. Ruess, D. L. Taylor

Effect of root exudates from non actinorhizal plants on *Frankia* propagules in the soil  
M.S. Cusato and R.D. Tortosa

Are Northwestern Patagonian wetlands reservoirs of *Ochetophila trinervis* infective  
*Frankia*?  
B.M. Cardoso, E.E. Chaia, E. Raffaele

*Frankia* spreading by vertebrate feces  
M.C. Sosa, E. Raffaele, E., E.E. Chaia

Susceptibility to insect herbivory of alder species native to northern Japan grown at  
elevated CO<sub>2</sub> with a FACE system  
Koike T., Tobita H., Agari T., Sasa K., Utsugi H., Uemura A., Kitao M., M. Kobayashi  
and H. Yasuyuki

Proteomics of *Frankia* sp. strain Ccl3 in Root Nodules  
J.E. Mastronunzio, Y. Huang and D.R. Benson

Behaviour of actinorhizal and rhizobial symbioses under the influence of the same  
“helper” actinomycetes  
M. Solans, G. Vobis, L.G. Wall

Physiological Modifications of *Frankia* Strains by *Myrica gale* Seed Exudates Are  
Related to Symbiotic Compatibility  
J. Popovici, E. Bagnarol, C. Bertrand, G. Comte and M.P. Fernandez

Contribution of model legumes to the knowledge of the actinorhizal symbiosis  
*Casuarina-Frankia*  
V. Hocher, S. Svistoonoff, H. Gherbi, M. Nambiar-Veetil, V. Vaissayre, F. Auguy, L.  
Laplaze, D. Bogusz and C. Franche

Study of early events in actinorhizal symbiosis: isolation and functional analysis of  
*CCaMK* gene from *Casuarina glauca*  
M. Nambiar-Veetil, V. Vaissayre, S. Svistoonoff, C. Zhong, V. Hocher, F. Auguy, C.  
Franche, D. Bogusz and H. Gherbi

Developing molecular tools for the study of the early steps in the symbiosis *Discaria*  
*trinervis-Frankia*  
S. Svistoonoff, U. Charbonneau, V. Vaissayre, L. Imanishi, D. Bogusz, C. Franche  
and Luis G. Wall

Homology modelling of a Nif protein from *Frankia* EAN1pec  
A. Sen, S. Sur, A.K. Bothra, L.S. Tisa and U.K. Mondal

*Frankia* sp. strain EAN1pec Gene Expression in Response to Heavy Metal Stress.  
T.R. Furnholm, A. Sen, A. Konisky and L.S. Tisa