3nd International Workshop

Advances in Science and Technology of Bioresources

November 02-03-04 2011 Universidad de La Frontera. Pucón, Chile.

3th International Workshop: Advances in Science and Technology of Bioresources

Wednesday, November 2sd
Arrival, Registration and Acknowledgments to Guests and Participants.

9:00-9:30. Arrival, registration and poster installation.

9:30-9:40. Opening address. Dr. Rodrigo Navia (on behalf of Vicerrector de investigacion y posgrado Dr. Raul Sanchez), Director of Inovation and technology transference Universidad de La Frontera Temuco Chile.

9:40-9:50. Welcome Dr. Maria de la Luz Mora, Director of Doctoral Program of Sciences in Natural Resources and Scientific and Technological Bioresource Nucleus, BIOREN-UFRO.

9:50-10:00. Welcome Dr. Luis Salazar, Director of Doctoral Program of Science Applied Molecular Cell Biology and Center of Molecular Biology and Pharmacogenetics.

Symposium 1. Environmental sustainability, climate change and carbon sequestration
Chairpersons: Dr. Francisco Matus, Dr. Graciela Palma

10:00-10:45. **Dr. Cornelia Rumpel**, CNRS, BIOEMCO, Campus AgroParisTech, Thiverval-Grignon, France.
Title: Properties of biochar for improving carbon sequestration and soil fertility.

10:45-11:15. **Dr. José Miguel Barea**, Departamento de Microbiología del Suelo y Sistemas Simbióticos, Estación Experimental del Zaidín, Prof. Albareda 1, 18008 Granada, Spain.
Title: Mycorrhizas and their significance in promoting environmental sustainability against the negative impacts of the climate change on the soil-plant systems.

11:15-11:30. Coffee break

11:30-12:00. **Dr. Francisco Matus**, Departemento de Ciencias Químicas y Recursos Naturales, Universidad de La Frontera, Temuco, Chile.
Title: Producing isotopically enriched plant, soil solution and rhizosphere soil materials over a few hours.

12:00-12:30. **Dr. Daniel Perez**, Laboratorio de Rehabilitación y Restauración de Ecosistemas áridos y semiáridos. Facultad de Ciencias del Ambiente y la Salud, Universidad Nacional del Comahue, Argentina.
Title: The monte desert in Argentina: degradation and lines of study related to rehabilitation.

12:30-12:45. **Alex Seguel**, PhD student of Doctoral Program of Sciences in Natural Resources, Universidad de La Frontera, Temuco, Chile.
Title: Glomalin-related soil protein and its importance in aluminium exclusion mechanism of plants growing in acid soils.

13:00-14:30 Lunch: Gran Hotel Pucón.

Symposium 2. Rhizosphere and Enzymes in the Environment.
Chairpersons: Milko Jorquera, Marysol Alvear

14:30-15:00. **Dr. Takuro Shinano**, National Agriculture and Food Research Organization, Japan.
Title: Metagenomic analysis on the rhizosphere soil microbiome.

15:00-15:30. **Dr. John Larsen**, Laboratorio de Agroecología, Centro de Investigaciones en Ecosistemas, Universidad Nacional Autónoma de México, Campus Morelia, Michoacán.
Title: Management of rhizosphere microorganisms in relation to plant health and nutrition in agroecosystems.

15:30-15:45. **Daniel Meneses**, PhD student of Chile –Italy International Doctorate in Environmental Resources Science, Universidad de La Frontera, Temuco, Chile.
Title: Activity stabilization of acid phytases immobilized on allophanic synthetic compounds and montmorillonite nanoclays.

15:45-16:30. Poster Session.

16:30-17:15. **Dr. Jonathan Cumming**, Department of Biology, West Virginia University, Morgantown, WV 26506 USA.
Title: Ectomycorrhizal fungi modify the physiological responses of quaking aspen (Populus tremuloides L.) to phosphorus limitation.

17:15-17:45. **Dr. Nuria Ferrol**, Departamento de Microbiología del Suelo y Sistemas Simbióticos, Estación Experimental del Zaidín, CSIC, C. Profesor Albareda 1, 18008 Granada, Spain.
Title: Mechanisms of heavy metal homeostasis in arbuscular mycorrhizal fungi.

17:45-18:00. **Sebastian Meier**, PhD student of Programa de Doctorado en Ciencias de Recursos Naturales, Universidad de La Frontera, Temuco, Chile.
Title: Contribution of arbuscular mycorrhizal fungi to the phytoremediation of copper polluted soils.

Symposium 3. Where are the graduates?.
Chairpersons: Paula Cartes, Francisca Acevedo

18:00-18:10. Initial presentation with all graduates

18:10-18:25. **Dr. Bárbara Fuentes**, Departamento de Ingeniería Química, Universidad Católica del Norte. Antofagasta.
Title: Natural Resources of Antofagasta Region, Chile.

18:25-18:40. **Dr. Jorge Pino**, EWOS Innovation Chile.
Title: Functional Diet: Reducing *Caligus rogercresseyi* infestation by blocking chemical signals.

18:40- 19:00. **Dr. Anali Rosas** and **Dr. Roxana López**, Departamento de Suelos y Recursos Naturales, Facultad de Agronomía, Universidad de Concepción and Departamento de Producción Agrícola, Facultad de Ciencias Agrarias, Universidad de Talca.
Title: Experiencias en la creación de proyectos I+D+i.

19:00-19:15. Roundtable Discussion: "Experience after Graduation".

19:30 Welcome Cocktail.

Thursday, November 3th

Symposium 4. Plant, Antioxidant and Food Production
Chairpersons: Dr. Miren Alberdi, Dr. León Bravo.

9:00-9:30. **Dr. León Bravo**, Departamento de Ciencias Agronómicas y Recursos Naturales, Universidad de La Frontera, Temuco, Chile.
Title: Desiccation tolerance in plants: Filmy ferns (Hymenophyllceae) from Chilean temperate rain forest as a study model.

9:30-10:15. **Dr. Walter Horst**, Institute for Plant Nutrition, Faculty of Natural Sciences, Leibniz University of Hannover, Germany.
Title: Adaptation of plants to mineral-element deficiency and toxicity – From the field to the gen.

10:15- 10:45: **Dr. Concepción Azcón-Aguilar**, Departamento de Microbiología del Suelo y Sistemas Simbióticos, Estación Experimental del Zaidín, CSIC, Profesor Albareda 1, 18008 Granada, España.
Title: Impact of arbuscular mycorrhizal symbioses on plant health.

10:45-11:00. **Rayen Millaleo**, PhD student of Programa de Doctorado en Ciencias de Recursos Naturales, Universidad de La Frontera, Temuco, Chile.
Title: Exudation of organic acids in blueberry cultivars subjected to Mn excess.

11:00-11:15. Coffee break.

Chairpersons: Mónica Rubilar, Carolina Shene.

11:15-11:45. **Dr. Dave Oomah**, National Bioproducts and Bioprocesses Program, Pacific Agri-Food Research Centre, Agriculture and Agri-Food Canada, Summerland, British Columbia, Canada.
Title: Functional Foods and Nutraceuticals.

11:45-12:15. **Professor M. Sc. Valerio Bifani**, Department of Chemical Engineering, Universidad de La Frontera, Temuco, Chile.
Title: Measuring wettability and adhesivity of edible coatings using surface tension.

12:15-12:45. **Dr. Francisca Acevedo**, Center of Food Biotechnology and Bioseparations, BIOREN, Universidad de La Frontera, Temuco, Chile.
Title: Extraction and processing of bioactive compounds from vegetable raw materials and byproducts of the food industry.

12:45-13:00. **Pillar Ulloa**, PhD Student of Programa de Doctorado en Ciencias de Recursos Naturales, Universidad de La Frontera, Temuco, Chile.
Title: Effect of plant protein diet on differential gene expression in muscle of zebrafish (Danio rerio) using RNA-sequencing.

13:00-14:30. Lunch: Gran Hotel Pucón.

15:00-19:00. Free Time (only for foreign guests)

Symposium 5. University-Industry Relationship
Chairpersons: Dr. Maria Cristina Diez, Dr. Maria de la Luz Mora

15:00-15:45. **Dr. Nelson Durán**, Universidad Estadual de Campinas, Instituto de Química, Brasil.
Title: Valorización de la Investigación: Experiencia Brasilera.

15:45-16:15. **Fabiola Vasquéz Miranda**, Coordinadora de Transferencia Tecnológica, Dirección de Innovación y Transferencia Tecnológica, Universidad de La Frontera.
Title: Transferencia Tecnológica, investigaciones al mercado.

16:15-16:45. **Claudina Uribe Bórquez**, Directora Ejecutiva INCUBATEC UFRO.
Title: Creación de Empresas de base Tecnológica.
16:45-17:15. Mobil-Copec : Sr. Ivan Cazabon (Gerente Zonal), Experto en Lubricación Mobil / Copec, Ingeniero en Prevención de Riesgos, Jefe Zona Sur Vía Limpia / Copec.

17:15-17:45. **Sr. Exequiel Maldonado**, Security and Environmental Sub-Manager of OXIQUIM S.A., a Chilean company devoted to the distribution and commercialization of chemical products for Industry (cellulose, pisciculture, food, textile, pharmaceutical, agriculture, etc.) and Mining.

21:00. Gala Dinner.

Friday, November 4th

Symposium 6. Bioresources and Biomedicine
Chairpersons: Dr. Luis Salazar, Dra. Maria de la Luz Mora

9:00-9:30. **Dr. Adalberto Pessoa**, School of Pharmaceutical Sciences–University of São Paulo, São Paulo, Brazil.
Title: Post-graduation Programs In the School of Pharmaceutical Sciences of the University of São Paulo, Brazil.

9:30-10:00. **Dr. Marinilce Fagundes dos Santos**, Institute of Biomedical Sciences – University of São Paulo, São Paulo, Brazil.
Title: Graduation Programs in the institute of Biomedical Sciences of the University of São Paulo, Brazil.

10:00:10:30. **Dr. Alexander Henning Ulrich**, Department of Biochemistry in the Chemistry Institute of USP.
Title: Functions of bradykinin in neurogenesis and neuroprotection.

10:30-10:45. Coffee break

10:45-11:30. **Dr. Rosario Hirata**, School of Pharmaceutical Sciences – University of São Paulo, São Paulo, Brazil.
Title: Pharmacogenomics: Applications in clinical laboratory and personalized medicine.

11:30-12:00. **Dr. Liliana Cardemil**, Laboratorio de Biología Molecular Vegetal, Departamento de Biología, Facultad de Ciencias, Universidad de Chile.
Title: Aloe barabadensis Miller (*Aloe vera*) Chages the Structure of the Molecules of the Gel and Leaves under Water Stress.

12:00-12:30. **Dr. Juan Carlos Roa**, Facultad de Medicina, Universidad de La Frontera, Temuco, Chile.
Title: Patología molecular y morfología tradicional como base en la formación de líneas de investigación.

12:30-13:00. **Dr. Jorge Farias**, Departamento de Ingeniería Química, Facultad de Ingeniería, Ciencias y Administración, Universidad de La Frontera, Temuco, Chile.
Title: Molecular model to explain the effects of hypobaric hypoxia in rat tissues.

13:00-14:30. Lunch: Gran Hotel Pucón.

Symposium 7. Bioprocesses and Bioproducts
Chairpersons: Dr. Rodrigo Navia, Dr. David Jaison

15:00-15:45. **Dr. Arne Ragossnig**, University of Applied Sciences-Fachhochschulstudiengänge Burgenland GmbH, Austria.
Title: Enabling optimized recovery from waste by NIR sorting–case studies of specific waste streams

15:45-16:15. **Dr. Sofia Valenzuela**, Centro de Biotecnología de la Universidad de Concepción, Chile.
Title: Genomic of *Eucalyptus globulus* for pulp and biofuels.

16:15-16:30. Coffee break.

16:30-17:00. **Dr. Ralph Greiner**, Department of Food Technology and Bioprocess Engineering, Max Rubner-Institut, Federal Research Institute of Nutrition and Food, Haid-und-Neu-Straße 9, 76131 Karlsruhe, Germany.
Title: Current and projected applications of engineered nanomaterials in the food sector.

17:00-17:30. **Dr. David Crowley**, Department of Environmental Sciences, University of California, Riverside, USA.
Title: Application of Neural Network Models for Linking Environmental Variables to Microbial Community Structure and Function

17:30-18:30. Poster defense session and Awards

18:30-18:45. Closing session.