

# 5<sup>th</sup> ENZYMES IN THE ENVIRONMENT: CONFERENCE SCHEDULE

## Bangor, Wales, UK, 2016

### DAY 1, Sunday, July 24, 2016

| Time          | MANAGEMENT CENTRE HOTEL, Bangor University         |
|---------------|--|
| 15:00 – 20:00 | Registration                                       |
| 18:00 – 20:00 | Welcome Reception – Drinks and light food provided |

### DAY 2, Monday, July 25 – MORNING

#### Neuadd Reichel Hall – Main Conference Room

| Time  | Topic  | Speaker                           | Institution                         |
|-------|--|-----------------------------------|-------------------------------------|
| 8:30  | Welcome  | Chris Freeman                     | Bangor University, Wales            |
| 8:45  | Introduction of Conference   | Local dignitaries<br>Richard Dick | UK<br>Ohio State University, USA    |
|       | <b>Symposium I - Lifetime Enzymology Achievement Lectures</b>  | <b>Chair:</b> Jim Germida         | University of Saskatchewan, Canada  |
| 9:00  | Aquatic Lifetime Award: “Selfish” Bacteria Flourish in Surface Ocean Waters  | Carol Arnosti                     | University of North Carolina        |
| 9:45  | Terrestrial Lifetime Award: Forty Years of Research in Soil Enzymology and the Possible Contribution of Molecular Techniques to Interpret the Meaning of Enzyme Activities | Paolo Nannipieri                  | University of Florence, Italy       |
| 10:30 | Coffee and tea amenities available   |                                   |                                     |
|       | <b>Symposium II - Aquatic Enzymology and Microbial Ecology</b>   | <b>Chair:</b> Nathalie Cheviron   | INRA, France                        |
| 11:10 | Aquatic Enzymology: The Significance of the Enzymic Latch in Anaerobic Sediments   | Chris Freeman                     | Bangor University, Wales, UK        |
| 11:40 | Elf Kinetics in Phytoplankton Populations: Feasibility and Applications  | Daniel Diaz De Quijano            | Siberian Federal University, Russia |
| 12:00 | Environmental peptidases: Quantifying substrate specificities of aminopeptidases in fresh and estuarine water  | Andrew Steen                      | University of Tennessee, USA        |
| 12:20 | <b>General Discussion – Symposium II</b>   |                                   |                                     |
| 12:30 | Lunch  |                                   |                                     |

## DAY 2, Monday, July 25 - AFTERNOON

| Time                         | Topic  | Speaker   | Institution  |
|------------------------------|--|---|--|
|                              | <b>Symposium III - Methods: Beyond genomics; Extracellular enzyme expression</b>   | <b>Chair:</b> Terrence Gardiner                                 | North Carolina State University, USA   |
| <b>14:00</b>                 | Soil as a meta-organism: omics-mediated discoveries  | Evgenia Blagodatskaya   | University of Gottingen, Germany   |
| <b>14:30</b>                 | Exploring microbial processes in forest soils using metatranscriptomics and complementary methods  | Petr Baldrian   | Lab of Environmental Microbiology, Czech Republic  |
| <b>15:00</b>                 | Proteomics and Metaproteomics - powerful tools for the discovery and functional characterization of enzymes in the environment   | Katharina Riedel  | University of Greifswald, Germany  |
| <b>15:30</b>                 | <b>Coffee and tea amenities available</b>  |   |  |
| <b>16:10</b>                 | Challenges in Enzyme Discovery in the Postgenomic Era<br><b>Symposium III Methods: Roundtable Position Presentations: Omics and functional expression of extracellular enzymes</b> | Peter N Golyshin  | Bangor University  |
| <b>1640</b>                  | Facilitated Participant - Questions and Discussion   | Facilitators: Mary Stromberger; Richard Burns; Paolo Nannipieri | Colorado State University, USA; University of Queensland, Australia; University of Florence, Italy |
| <b>17:10</b>                 | <b>Adjourn</b>   |   |  |
| <b>19:30</b><br><b>20:30</b> | <b>Social Event: Welsh Music and Dance Culture</b>   |   |  |

## DAY 3, Tuesday July 26 - MORNING

| Time        | Topic  | Speaker                         | Institution  |
|-------------|--|---------------------------------|--|
| 8:00        | <b>Posters put in place - Ffestiniog Room in Neuadd Reichel Hall</b>                             |                                 |  |
|             |  | <b>Chair:</b> Elena Chernysheva | Institute of Physicochemical & Biological Soil Science, Russia |
|             | <b>Symposium IV - Extracellular Enzymes: Functional Diversity and Ecosensors</b>                 |                                 |  |
| 8:30        | Adaptation and Responses to Temperature Change by Soil Microbial Communities                     | David Hopkins                   | Royal Agricultural University, England, UK                     |
| 9:00        | Nickel-Depleted Urease to Assess Nickel Bioavailability in Soil                                  | Warren Dick                     | Ohio State University USA                                      |
| 9:20        | Translocation of Extracellular Enzymes by Soil Leachate in a Dystric Cambisol under Beech Forest | Stefanie Heinze                 | Ruhr-Universität Bochum, Germany                               |
| 9:40        | <b>General Discussion:</b> Symposium IV  |                                 |  |
| 10:00       | <b>Coffee and tea amenities available</b>  |                                 |  |
| 10:40-12:30 | <b>Poster Session: (Authors Present) - Ffestiniog Room</b>                                       |                                 |  |
| 12:30       | <b>Lunch</b>   |                                 |  |

## DAY 3, Tuesday July 26 - AFTERNOON

|       |  |                                 |                                  |
|-------|--|---------------------------------|----------------------------------|
|       | <b>Symposium V - Extracellular Enzymes in Aquatic Ecosystems under a Changing Climate</b>  | <b>Chair:</b> Kazuyuki Inubushi | Chiba University, Japan          |
| 14:00 | Aquatic - Effects of Global Warming on Aquatic Ecosystems: Functional Responses and Microbial Interactions in Biofilms                 | Anna M. Romani                  | University of Girona, Spain      |
| 14:30 | Effects of Elevated CO <sub>2</sub> on Microbial Community and Enzyme Activities are Constrained by Salinity in a Salt Marsh Ecosystem | Hojeong Kang                    | Yonsei University, Korea         |
| 14:50 | Nutrient and Temperature Affect the Microbial Community and Function In Streambed Sediments  | Elisabeth Pohlen                | Justus Liebig University Giessen |
| 15:10 | <b>Coffee and tea amenities available</b>  |                                 |                                  |
|       | <b>Symposium V - Extracellular Enzymes in Terrestrial Ecosystems under a Changing Climate</b>  | <b>Chair:</b> Nicola Lorenz     | Ohio State University, USA       |
| 16:00 | Terrestrial - What Do We Know About the Impact of Climate Change on Soil Enzyme Activity   | Carmen Trasar Cepeda            | IIAG-CSIC, Spain                 |
| 16:30 | Enzyme Activities Response to a Record Drought in Agroecosystems: Implications to Biogeochemical Cycling and Organic Matter Dynamics   | Veronica Acosta-Martinez        | USDA-ARS, USA                    |
| 16:50 | Interdisciplinary Characterization of an Alpine Soil Climosequence by Simple yet Powerful Techniques                                   | Tommaso Bardelli                | University of Florence, Italy    |
| 17:10 | <b>General Discussion:</b> Symposium V   |                                 |                                  |
| 17:30 | <b>Adjourn</b>   |                                 |                                  |
| 19:00 | <b>Depart for Gala Dinner</b>  |                                 |                                  |

## DAY 4, Wednesday, July 27 - MORNING

| Time  | Topic   | Speaker                                      | Institution                                 |
|-------|---|--|---|
|       | <b>Symposium VI - Industrial and Environmental Applications of Enzymes</b>  | <b>Chair:</b> Juan Parrado                   | University of Seville, Spain                |
| 8:30  | Using Microbial Enzymes to Help Feed a Hungry Planet  | Jacob Parnell                                | Novozymes, Denmark                          |
| 9:00  | Application of Acc-Deaminase Positive Bacteria for Winter Wheat Drought Tolerance   | Mary Stromberger                             | Colorado State University                   |
| 9:20  | Electrospinning Nano-Fibers Supports for Enzymes to Remediate Wastewaters   | Fabrizio De Cesare                           | Univ. of Tuscia, Italy                      |
| 9:40  | <b>General Discussion:</b> Symposia VI  |  |   |
| 10:00 | <b>Break</b>  |  |   |
|       | <b>Symposium VII: Enzyme activities in the environment: Hot spots - hot moments</b>   | <b>Chair:</b> Timothy Jones                  | Bangor University, Wales UK                 |
| 10:40 | From Visualisation of Enzyme Activities to <i>In-Situ</i> Process Rates in Soils  | Ellen Kandeler                               | University of Hohenheim, Germany            |
| 11:10 | Transformation of 17 $\beta$ -estradiol in Humic Acid Solution by Enzymes by Probing with HRMS <sup>13</sup> C Labeling           | Kai Sun                                      | Nanjing Agricultural University, China      |
| 11:30 | Linking Enzymatic Activities during Leaf Decomposition of Perennial Energy Crops  | Flavio Fornasier                             | Council for Ag. Research & Economics, Italy |
| 11:50 | Seasonal Variation and Distribution of Total and Active Microbial Community of $\beta$ -Glucosidase Encoding Genes in Forest Soil | Shamina Pathan (Paolo Nannipieri presenting) | Univ. of Florence, Italy                    |
| 12:10 | <b>General Discussion:</b> Symposia VII   |  |   |
| 12:30 | <b>Lunch</b>  |  |   |

## DAY 4, Wednesday, July 27 - AFTERNOON

|       |  |                                 |  |
|-------|--|---------------------------------|--|
|       | <b>Symposium VIII - Bioremediation: Driven by Extracellular Enzymes</b>  | <b>Chair:</b> Elisabeth Janssen | Institute of Biogeochem. & Pollutant Dynamics, Switzerland |
| 14:30 | Extracellular enzymes in bioremediation: Potential and limitations   | Maria Rao                       | University of Naples Italy                                 |
| 15:00 | Anaerobic PAH degradation by Fe- and S-reducing Microorganisms in Marine Sediments                                   | Michail Yakimov                 | Institute for Coastal Marine Environments, Italy           |
| 15:20 | Extracellular Enzymatic Activity in a Wastewater Treatment System for Organic Matter and Biological Nutrient Removal | Jorge Mario Berrio-Restrepo     | Universidad de Antioquia, Columbia                         |
| 15:40 | <b>General Discussion:</b> Symposia VII  |                                 |  |
| 15:30 | <b>Coffee and tea amenities available</b>  |                                 |  |
|       | <b>Symposium IX - Methods: Microplate vs. Bench Enzyme Assays</b>  | <b>Chair:</b> Mike Weintraub    | University of Toledo, USA                                  |
| 16:10 | Cross-Laboratory Comparison of Microplate and Bench-Scale Soil Enzyme Assays   | Richard Dick                    | Ohio State Univ. USA                                       |
| 16:30 | Comparison and Standardization of Soil Enzyme Assay for Meaningful Interpretation                                    | Shiping Deng                    | Oklahoma State Univ., USA                                  |
| 16:50 | <b>Round Table Discussion &amp; Highlights of Method Posters:</b> Symposia IX  |                                 |  |
| 17:30 | <b>Adjournment of the Conference</b>   |                                 |  |