EU-US Working Group on Environmental Biotechnology

Herman van Mellaert and Jens Hoegel,
EC Directorate-General for Research and Innovation
Todd Anderson, US Dept. of Energy
June 2012
Working Group Members

Dr. Herman van Mellaert EU co-chair, Jens Hoegel, EU co-chair
Dr. Todd Anderson, US co-chair

New co-chair for 2012

New Member

Prof. Spiros Agathos, Belgium
Prof. Kelly Bender, US
Prof. Jan van der Meer CH
Dr. Barb Methe, US
Dr. Ivonne Nijenhuis, Germany
Dr. Balbina Nogales, Spain
Dr. Victor de Lorenzo, Spain Special Advisor

Prof. Judith Wall, US
Prof. Lily Young, US
Prof. Gerben Zylstra, US
Dr. Juan Ramos, Spain
Dr. Teresa Lettieri, Italy

Departing Member and Co-Chair!
Thank you and best wishes to Prof. Joe Suflita and Dr. Danka Cichocka!
Continuing a Legacy of US-EU Collaborative Activities

1996 **Workshop** “Molecular and Biochemical Bases of Biodegradation” Granada, Spain (J. Ramos)

1998 **Short Course** “Environmental Biotechnology: Theoretical and Practical Course on Molecular Approaches for In Situ Biodegradation. Short Course on Bioremediation,” New Brunswick, NJ (G. Zylstra)

2000 **Exchange Fellowships**. Total of 27 fellows from US and EU (J. Wall, J. Suflita, S. Agathos)

2002 **Short Course** “Molecular Biology for the Environment.” Madrid, Spain (J. Ramos)

2004 **Workshop** “Genomics and Environmental Biotechnology” The Institute for Genome Research (TIGR), Rockville, Maryland. (B. Methe)

2008 **Workshop** “Metabolomics and Environmental Biotechnology,” Mallorca, Spain (B. Nogales).

2009 **Short Course** “Theoretical and Practical Course on Molecular Approaches for in situ Biodegradation”, Norman OK (J. Suflita)

2011 **Short Course** “Microbial Catalysts for the Environment”, Lausanne, CH (J. van der Meer, G. Zylstra)

With the added value of

- **Building** a repertoire of new scientific leaders in the field
- **Exchange** of scientific know-how between equals
- **Foster** transatlantic collaboration
WG accomplishments and plans 2012-2013

- July 2011  
  Short course "Microbial Catalysts for the Environment", Lausanne, Switzerland, 9-23 July

- Summer 2011  
  Information flyer WG Environmental Biotechnology

- December 2011  
  Guidance document on short course preparation, based on Lausanne short course

- Early 2012  
  Draft manuscript "WG impact on early career scientists"

- Nov 2012  
  Workshop "Microbial communities and their Interactions", St. Louis, University of Illinois, 4-7 November

- July 2013  
  Short course "Microbially-driven facilitation systems in environmental biotechnology", Milan and Basel, July 2013
Activity for 2012: Workshop: “Microbial Communities and their Interactions”

- November 4-7, 2012
- Organized by Prof. Judy Wall, University of Missouri, and Prof. Kelly Bender of U. of Southern Illinois.
- Focus on microbial community interactions relevant to a wide range of environmental and engineered systems such as the rhizosphere processes, environmental remediation and the human gut!
- 20 scientists invited (10 from the EU and 10 from the US). Each scientist will be accompanied by an early career scientist.
## Participating Speakers

### US Speakers

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<tr>
<th>Name</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Eric J. Alm</td>
<td>MIT</td>
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<td>Jack Gilbert</td>
<td>Argonne National Laboratory</td>
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<tr>
<td>Peter Greenberg</td>
<td>University of Washington, Seattle</td>
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<tr>
<td>Jo Handelsman</td>
<td>Yale University (formerly U WI)</td>
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<td>Roberto Kolter</td>
<td>Harvard Medical School</td>
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<tr>
<td>Raina M. Maier</td>
<td>University of Arizona</td>
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<tr>
<td>Nancy Moran</td>
<td>Yale University</td>
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<tr>
<td>Howard Ochman</td>
<td>Yale University (formerly U AZ) (still tentative)</td>
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<td>Claudia Schmidt-Dannert</td>
<td>University of Minnesota</td>
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<td>Sally “Penny” Chisholm</td>
<td>MIT</td>
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### EU Speakers

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<tr>
<td>Jens Aamand</td>
<td>GEUS, Copenhagen, Denmark</td>
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<tr>
<td>Richard Bardgett</td>
<td>Lancaster University, Lancaster, UK</td>
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<td>Daniele Daffonchio</td>
<td>DISTAM, Milano, Italy</td>
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<td>Nicole Dubilier</td>
<td>Max Planck Institute for Marine Microbiology, Bremen, Germany</td>
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<td>Xu Peng</td>
<td>University of Copenhagen, Denmark</td>
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<td>Angela Sessitsch</td>
<td>Austrian Institute of Technology, Seibersdorf, Austria</td>
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<tr>
<td>Kornelia Smalla</td>
<td>JKI-Federal Research Centre for Cultivated Plants, Institute for Epidemiology and Pathogen Diagnostics, Braunschweig, Germany</td>
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<tr>
<td>Barth Smets</td>
<td>Technical University of Denmark, Lyngby, Denmark</td>
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<tr>
<td>Vittorio Venturi</td>
<td>International Centre for Genetic Engineering and Biotechnology, Trieste, Italy</td>
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Activity for 2012:
Workshop: “Microbial Communities and their Interactions”

Workshop Session Chairs

Dr. Spiros Agathos - invited
Dr. Ivonne Nijenhuis - invited
Dr. Juan Ramos - invited
Dr. Barbara Methe - agreed
Dr. Lily Young - agreed
Dr. Gerben Zylstra - agreed

Workshop Preparations proceeding!
New Activity for 2013:
Short Course: “Microbially-driven facilitation systems in environmental biotechnology”

- Targeting July 2013
- Venue – EU, Milan and Basel
- Lead organizers: Dr. Daniele Daffonchio, University of Milan, Dr. Philippe Corvini, University of Applied Sciences Northwestern Switzerland, Dr. Barbara Methe (J. Craig Ventor Institute)
- Understanding complex interactions between microbial communities and their environments and exploring biotechnology methods to enhance/exploit these activities for beneficial purposes.
- Builds on past short course formats.
- Preliminary plans under development/discussion, finalisation summer 2012.
- Publication and call for application early 2013
## Looking ahead: US and EU Biotechnology - Related Science Priorities

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<th>US (Science and Technology Priorities)</th>
<th>EU</th>
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<td><strong>Promoting sustainable economic growth</strong>&lt;br&gt;● Support research to establish the foundations for a 21st century &quot;bio-economy&quot;</td>
<td>EU2020 strategy: &quot;...smart, sustainable and inclusive growth&quot;&lt;br&gt;Horizon2020: Research funding reg. environmental biotechnology foreseen in the area of &quot;Leadership in enabling and industrial technologies&quot; and the societal challenge &quot;Sustainable and competitive biobased industries&quot;</td>
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<td><strong>Moving towards a clean energy future to reduce dependency on energy imports while curbing greenhouse gas emissions</strong></td>
<td>● EU energy package and 20-20-20 targets&lt;br&gt;● SET plan: Biotechnology a key scientific field to produce and consume energy&lt;br&gt;● Preparations for a Joint Technology Initiative &quot;Biobased Industries&quot;</td>
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<td><strong>Understanding, adapting to and mitigating the impacts of global climate change</strong></td>
<td>EU Communication and Action plan &quot;Innovating for sustainable growth: a Bioeconomy for Europe&quot;</td>
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<td><strong>Managing the competing demands on land, freshwater, and the oceans for the production of food, fibre, biofuels, and ecosystem services based on sustainability and biodiversity</strong></td>
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Forging new relationship between US and EU funding agencies

- Co-chairs to identify broad mutually beneficial areas for research with linkages to science programs within the US and EU.
- Explore/develop methods to support collaborative research
- Communicate opportunities to working group members

- Engage working group to:
  - organize scientific venues between US and EU researchers
  - continue organizing short-courses and workshops
  - post workshop results on-line or as science news stories
  - Develop scientific collaborations addressing key US and EU science priorities

Move towards mutual support of scientific collaboration
Thank You!