



FRIEDRICH-SCHILLER-  
UNIVERSITÄT  
JENA



## Crossing the kingdoms: Macroalgae-Bacteria Interactions

### Programme: Workshop and Training School of the COST Action FA 1406

11<sup>th</sup> -15<sup>th</sup> September 2017

**Venue:** Institute for Inorganic and Analytical Chemistry, Humboldtsr. 8, 07743 Jena, Germany

<https://goo.gl/maps/BC9KGGXwB5C2>

(i) **Workshop:** 11<sup>th</sup> -12<sup>th</sup> September 2017

“Macroalgae-bacteria interactions promoting algal growth and development.”

(ii) **Training School in Analytical Chemistry:** 13<sup>th</sup> -15<sup>th</sup> September 2017

“Chemistry of macroalgae: Exploring the chemical nature of seaweed-microbial interactions.”

#### Description

The main focus of the **Workshop** is on the cross-kingdom interactions between macroalgae and bacteria. It will cover various aspects of chemical ecology, evolutionary ecology, developmental biology, symbiosis and analytical tools. Current topics are presented by invited speakers, early stage researchers and students. The workshop is open to everybody who is interested in growth and morphogenesis of macroalgae.

In continuation of the Workshop, a **Training School** will introduce selected tools in Analytical Chemistry (e.g., metabolomics, isotope labeling, etc.) for deciphering seaweed-microbial interactions. Mainly students and early stage researchers will participate in a hand-to-hand laboratory course. The Training School is open to participating COST countries of the COST Action F1406. Participants of the Training School have been already selected.

| Time        | Monday (11.09.2017)  |                                    |
|-------------|--|------------------------------------|
| 8:15        | Registration   |                                    |
| 9:00        | Welcome by the organiser of the workshop and the chair of the COST Action  |                                    |
| 9:30        | <b>1-Algal bacteriome characterization using high throughput sequencing</b><br>A.H. Engelen, T. Aires, E. Serrão, CCMAR, Portugal  | Session 1<br>Chair<br>T. Wichard   |
| 10:00       | <b>2-Genome-scale metabolic networks to analyse the metabolism of symbiotic communities</b><br>S. Dittami, Station Biologique Roscoff, France  |                                    |
| 10:30       | <b>3-The microbiome of a seaweed invader across its introduced European range</b><br>T. Aires, A. Klæui, E. A. Serrão, A. H. Engelen, CCMAR, Portugal  |                                    |
| 10:45-11:15 | <b>Coffee Break</b>  |                                    |
| 11:15       | <b>4-Study of the interaction between the microbiome with the Irish macroalgae</b><br>C. C. Ortega, C. Le Guillard, D. B Stengel, National University of Galway, Ireland   | Session 1<br>Chair<br>T. Wichard   |
| 11:30       | <b>5-Evaluation of the seaweed microbiome interactions in selected commercial Irish species</b><br>C. Le Guillard, C. C. Ortega, D. B Stengel, National University of Galway, Ireland  |                                    |
| 11:45       | <b>6-Diversity and bioactivity of microflora associated with seaweeds from the Atlantic Coast of Morocco: Preliminary results, C.</b><br>Katif, B. Sabour, M. Barakate, Faculty of Sciences of El jadida, Morocco                            |                                    |
| 12:00       | <b>7-Omics for Seaweed-Bacterial Interactions</b><br>M. Kumar, University of Technology Sydney, Australia  |                                    |
| 12:30-13:30 | <b>Lunch (Buffet)</b>  |                                    |
| 13:30       | <b>8-Antibacterial properties of Mediterranean seaweeds and benefits from associated bacteria</b><br>K. Leila, A. Ismail, W. Cherif, Y. Ben Redjem, I. Hmani and M. El Bour, National Institute of Marine Sciences and Technologies, Tunisia | Session 2<br>Chair<br>O. de Clerck |
| 13:45       | <b>9-Antimicrobial properties of inducible compounds in the brown macroalgae <i>Fucus vesiculosus</i></b><br>U. S. R. Röse, A. Call, F. Weiss, K. Burkholder, University of New England, USA   |                                    |
| 14:15       | <b>10-Arsenic containing lipids in brown algae</b><br>Á. Pétursdóttir, J. Blagden, K. Fletcher, J. Feldmann, H. Gunnlaugsdóttir, University of Iceland, Iceland  |                                    |
| 14:30       | <b>11-The alginolytic system of <i>Zobellia galactanivorans</i> as a model for brown algal biomass degradation</b><br>F. Thomas, Station Biologique Roscoff, France  |                                    |
| 15:15-15:45 | <b>Coffee Break</b>  |                                    |
| 15:45       | <b>12-Chemical ecology of cell polarisation and rhizoid development in <i>Dictyota dichotoma</i></b><br>K. A. Bogaert, T. Beeckman, O. De Clerck, Ghent University, Belgium  | Session 2<br>Chair<br>O. de Clerck |
| 16:00       | <b>13-Identification of regulators of the gametophyte to sporophyte transition in the brown alga <i>Ectocarpus</i></b><br>H. Yao, J. M. Cock, S. M. Coelho, Station Biologique Roscoff, France   |                                    |
| 16:15       | <b>14-From algae to bacterial behaviour</b><br>T. Böttcher, University Konstanz, Germany   |                                    |
| 16:45-17:45 | <b>15- Rapid metabolic transformations that mediate chemical defense and wound healing in macroalgae</b><br>G. Pohnert, FSU Jena, Germany  |                                    |

| Time        | Tuesday (12.09.2017)   |                                  |
|-------------|--|----------------------------------|
| 9:00        | <b>16-Phytoplankton-bacteria interactions: mutualism, competition and chemical warfare (Keynote)</b><br>S. Amin, New York University Abu Dhabi, United Arab Emirates   |                                  |
| 10:00       | <b>17-The Ins and Outs of microbial signaling molecules</b><br>C. Beemelmanns, Hans-Knöll-Institute Jena, Germany  | Session 3<br>Chair<br>N.N.       |
| 10:30       | <b>18-The effect of biofilms on the microenvironments of coralline algae</b><br>L. C. Hofmann, Max Planck Institute for Marine Microbiology, Germany   |                                  |
| 10:45-11:15 | <b>Coffee Break</b>  |                                  |
| 11:15       | <b>19-Epibacterial diversity and function in the physiology of polar coralline algae.</b><br>K. M. Schoenrock, L. C. Hofmann and K. O. Matterson, NUI Galway, Ireland  | Session 3<br>Chair<br>N.N.       |
| 11:30       | <b>20-Endophytes from algae as biological control and as a source for new active metabolites</b><br>Y. Deutsch, D. Ezra, Agricultural Research Organization, Volcani Center, Israel  |                                  |
| 11:45       | <b>21-Seaweed as a potential resource in Latvia</b><br>K. Balina, Riga Technical University, Latvia  |                                  |
| 12:00       | <b>22-The intimate relationship of planctomycetes and macroalgae</b><br>O. M. Lage, University of Porto, Portugal  |                                  |
| 12:30-13:30 | <b>Lunch (Buffet)</b>  |                                  |
| 13:30       | <b>23-Cross-kingdom interactions in <i>Ulva</i></b><br>T. Wichard, FSU Jena, Germany   | Session 4<br>Chair<br>A. Engelen |
| 14:00       | <b>24-A new tripartite system established with <i>Ulva intestinalis</i> and <i>Ulva mutabilis</i></b><br>F. Ghaderiadjakani, J. C. Coates, T. Wichard, University Birmingham, UK   |                                  |
| 14:15       | <b>25-Can <i>Ulva</i>-associated bacterial communities be manipulated to improve fish health in IMTA-RAS cultures</b><br>J. Pintado, P. Ruiz, J. Oca, I. Masaló, P. Jiménez and J. Cremades, Instituto de Investigaciones Mariñas, Spain |                                  |
| 14:45       | <b>26-The <i>Ulva</i> genome: insights in the life of a bloom forming alga.</b><br>O. de Clerck, University Ghent, Belgium   |                                  |
| 15:15-15:45 | <b>Coffee Break</b>  |                                  |
| 15:45       | <b>27-Explore the effect of ocean acidification on <i>Ulva lactuca</i> in relation to the associated bacteria metabolic interactions – a lab study.</b> Nagwa Gamal EIDin Mohammady, Alexandria University, Egypt                        | Session 4<br>Chair<br>A. Engelen |
| 16:00       | <b>28-Uncovering the genetic basis of bacteria-induced morphogenesis in <i>Ulva mutabilis</i></b><br>M. Kwantes, J. Boesger, T. Wichard, FSU Jena, Germany   |                                  |
| 16:30       | <b>29-Proerspective on plasmid rescue for identifying vector insertion sites in <i>Ulva mutabilis</i></b><br>I. Theodorou, M. Kwantes, T. Wichard, FSU Jena, Germany   |                                  |
| 16:45       | <b>30-A glance at microalgae: Chemically mediated interactions between <i>Chlamydomonas reinhardtii</i> and bacteria</b><br>S. Sasso, FSU Jena, Germany  |                                  |
| 17:15       | <b>31-Taxon-specific volatile metabolomic signatures in three species of seaweed</b><br>M. Saha, A. Dumbrell, M. Steinke, University of Essex, UK  |                                  |
| 17:45-18:30 | <b>Concluding Remarks</b>  |                                  |
| 19:00       | <b>Workshop-Dinner: Restaurant “Ratszeise Jena” (Location: city center – marketplace)</b>  |                                  |