Eva Christina Sonnenschein (née Kaeppel), Ph.D.

Technical University of Denmark phone: +45 26 73 80 70 DTU Systems Biology e-mail: evaso@bio.dtu.dk Matematiktorvet 301 date of birth: 10th May 1983 2800 Kgs. Lyngby, Denmark nationality: German

EMPLOYMENT

2013 – today **Postdoctoral fellow** at Technical University of Denmark with Prof. Lone Gram

Jan – Aug 2015Maternity leave (7 months), effective years since PhD (Jan 2011): 4 years 10 months

2011 – 2013 **Postdoctoral fellow** at University of California, San Diego, USA with Prof. Michael Burkart

EDUCATION

2008 – 2011 **Ph.D. in Marine Microbiology**, Jacobs University Bremen and MarMic graduate student at Max Planck Institute for Marine Microbiology, Bremen, Germany

2002 – 2007 **Diploma in Biology**, Christian-Albrechts-Universität, Kiel, Germany and Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany

2006 3-month internship at DTU Aqua, Denmark

2006 Term abroad at Syddansk Universitet, Odense, Denmark

OTHER WORK EXPERIENCES

2006 Conference assistant at EUROPT(R)ODE VIII conference, Tübingen, Germany

2005 – 2006 Research assistant at Institute of Polar Ecology, Kiel, Germany

2003 – 2004 Research assistant at IfM-GEOMAR, Kiel, Germany

SCIENTIFIC PROFILE

During my eight years in research, I have investigated **microbial interactions** on the molecular level. My education in biological oceanography provides me with an ecological view on scientific problems and my steadily expanding skill set in **microbiology**, **molecular biology**, **bioinformatics** and **biochemistry** allows me to tackle them from different angles. My research is driven by **basic research** questions, but I am also dedicated to translate and exploit this knowledge into **industrial applications**. In the future, my research will contribute to the vastly growing field of **microbial utilization** by providing strains, metabolic pathways and metabolites, while in parallel, elucidate their **natural function** in the environment.

FELLOWSHIPS

- Travel grant of the 15th International Conference on the Cell & Molecular Biology of Chlamydomonas (Potsdam, Germany) (June 2012)
- Travel grant of the Gordon Research Conference for Marine Microbes (Tilton, NH, USA) (April 2010)
- PhD fellowship of Jacobs University Bremen, Germany (2008 2010)

CRUISE EXPERIENCE

- 2007 Research cruise on RV Poseidon (4 weeks): isolation and cultivation of microzooplankton, on board feeding studies on toxic microalgae
- 2006 Research cruise on RV Alkor (1 week): oceanographic training in CTD, nutrient analysis, primary production, and plankton diversity
- 2005 Research cruise on RV Littorina (1 week): sampling of benthos as course material

TEACHING

- Guidance and supervision of undergraduate and graduate students and visiting scientists, Technical University of Denmark, University of California, San Diego and Jacobs University Bremen
- Microbiological lab course for undergraduate students and lecture on "Studying bacterial chemotaxis in diatom-bacteria interactions", Jacobs University Bremen
- Tutorials on MarMic lectures and teaching assistant of MarMic field course, Max Planck Institute for Marine Microbiology, Bremen

CONFERENCES (selected)

- ASM Microbe, oral presentation: "Under the Sea *Roseobacter* Gardening of Microalgae" (June 2016)
- General assembly of PharmaSea, oral presentation: "The search for novel bioactives from marine bacteria isolated during a global sampling trip" (September 2014)
- General assembly of the FP7 project MaCumba, oral presentation: "Detection of cellto-cell signalling molecules from marine Vibrionaceae" (September 2014)
- SD-CAB student and postdoc symposium, oral presentation: "Activation of secondary metabolite pathways in microalgae" (January 2013)
- 15th International Conference on the Cell & Molecular Biology of Chlamydomonas, Potsdam, Germany, poster presentation: "Metabolic engineering of microalgae towards the production of secondary metabolites" (June 2012)
- Gordon Research Conference for Marine Microbes, Tilton, NH, USA, poster presentation: "Chemotaxis of Marinobacter sp. HP15 and its role in diatom-bacteria interactions" (July 2010)
- Gordon Research Conference for Marine Natural Products, Ventura, CA, USA, short talk and poster presentation: "Molecular and biochemical investigations on diatombacteria interactions" (March 2010)

ADVANCED TRAINING (selected)

- Teaching & Learning (Module 1 of UDTU), Kgs. Lyngby, Denmark (May 2014)
- Education in University Teaching (Module 2-4 of UDTU), Kgs. Lyngby, Denmark (scheduled for September 2016-2017)
- 6-day advanced biofilm course, Helsingør, Denmark (October 2013)
- 2-day soft skill courses in self and time management (March 2008) and scientific writing and speaking, Bremen, Germany (June 2010)

OTHER CONTRIBUTIONS

- Ad hoc reviewer for the Natural Science Foundation, African Journal of Microbiology, Estuaries and Coasts
- Co-coordination of subsection "Crop protection" in grant funded by the Department of Energy
- Presentation at outreach event to the public (Green Open House), UC San Diego, 2011

REFERENCES

- Prof. Lone Gram; Technical University of Denmark, Denmark; gram@bio.dtu.dk, +45
 4525 2586
- Prof. Michael Burkart; University of California, San Diego, USA; mburkart@ucsd.edu;
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- Prof. Hans-Peter Grossart; Leibniz Institute of Freshwater Ecology and Inland Fisheries, Germany; hgrossart@igb-berlin.de; +49 (0)33082 699 91
- Prof. Thomas Kiørboe, Technical University of Denmark, Denmark; tk@aqua.dtu.dk;
 +45 3588 3401
- Prof. Matthias Ullrich, Jacobs University Bremen, Germany; m.ullrich@jacobs-university.de; +49 (0)421 2003245

BIBLIOGRAPHY

h-index: 5 (Web of Science), 8 (Google Scholar, https://goo.gl/midLbc)

ORCID: orcid.org/0000-0001-6959-5100

Underline: corresponding author, asterix: shared first authorship

- 1. <u>Sonnenschein EC</u>, Nielsen KF, D'Alvise P, Porsby CH, Melchiorsen J, Heilmann J, Kalatzis PG, Bunk B, Sproer C, Middelboe M, and Gram L (2016). Global occurrence and heterogeneity of the *Roseobacter*-clade species *Ruegeria mobilis*. *The ISME Journal*, accepted
- 2. **Sonnenschein EC**, Pu Y, Beld J, and Burkart MD (2016). Phosphopantetheinylation in the green microalgae *Chlamydomonas reinhardtii*. *Journal of Applied Phycology*, accepted
- 3. Kopf A, Bicak M, Kottmann R, Schnetzer J, Kostadinov I, Lehmann K, Fernandez-Guerra A, Jeanthon C, Rahav E, Ullrich M, Wichels A, Gerdts G, Polymenakou P, Kotoulas G, Siam R, Abdallah RZ, **Sonnenschein EC** et al. (2015). The ocean sampling day consortium. *Gigascience*, *4*, 27. doi: 10.1186/s13742-015-0066-5

- 4. Machado H, **Sonnenschein EC**, Melchiorsen J, and Gram L (2015). Genome mining reveals unlocked bioactive potential of marine Gram-negative bacteria. *BMC Genomics*, *16*(1), 1365. doi:10.1186/s12864-015-1365-z
- 5. Rasmussen BB, Nielsen KF, Machado H, Melchiorsen J, Gram L, and **Sonnenschein EC** (2014). Global and phylogenetic distribution of quorum sensing signals, acyl homoserine lactones, in the family of Vibrionaceae. *Marine Drugs*, *12*(11), 5527–46. doi:10.3390/md12115527
- 6. Beld J*, **Sonnenschein EC***, Vickery CR*, Noel JP, and Burkart MD (2014). The phosphopantetheinyl transferases: catalysis of a post-translational modification crucial for life. *Natural Product Reports*, *31*(1), 61–108. doi:10.1039/c3np70054b
- 7. **Sonnenschein EC**, Syit DA, Grossart HP, and Ullrich MS (2012). Chemotaxis of *Marinobacter adhaerens* and its impact on attachment to the diatom *Thalassiosira weissflogii. Applied and Environmental Microbiology*, 78(19), 6900–7. doi:10.1128/AEM.01790-12
- 8. **Kaeppel EC**, Gärdes A, Seebah S, Grossart HP, and Ullrich MS (2012). *Marinobacter adhaerens* sp. nov., isolated from marine aggregates formed with the diatom *Thalassiosira weissflogii*. *International Journal of Systematic and Evolutionary Microbiology*, 62(Pt 1), 124–8. doi:10.1099/ijs.0.030189-0
- Ianora A, Bentley MG, Caldwell G, Casotti R, Cembella A, Engstrom-Ost J, Halsband-Lenk C, Sonnenschein EC, Legrande C, Llyewnn C, Pohnert G, Romana G, Miltenyte A, Pilkaityte R, Razinkovas A, Tilman U, and Vaiciute R (2011). The relevance of marine chemical ecology to plankton and ecosystem function: an emerging field. *Marine Drugs*, 9(9), 1625–48. doi:10.3390/md9091625
- 10. Sonnenschein EC*, Gärdes A*, Seebah S, Torres-Monroy I, Grossart HP, and Ullrich MS (2011). Development of a genetic system for *Marinobacter adhaerens* HP15 involved in marine aggregate formation by interacting with diatom cells. *Journal of Microbiological Methods*, 87(2), 176–183. doi:10.1016/j.mimet.2011.08.008
- 11. Gärdes A, **Kaeppel EC**, Shehzad A, Seebah S, Teeling H, Yarza P, Glockner FO, and Ullrich, MS (2010). Complete genome sequence of *Marinobacter adhaerens* type strain (HP15), a diatom-interacting marine microorganism. *Standards in Genomic Sciences*, 3(2), 97–107. doi:10.4056/sigs.922139

CURRENT RESEARCH SUPPORT

European Union's Seventh Framework Programmes KBBE-2012-6-311975 MaCuMBA (Marine Microorganisms: Cultivation Methods for Improving their Biotechnological Applications) and KBBE-2012-6-312184 PharmaSea (Increasing Value and Flow in the Marine Biodiscovery Pipeline)