Postdoc Position in Marine Microbial Symbiosis

Prof. Michael Wagner, Division of Microbial Ecology (www.microbial-ecology.net), University of Vienna
&
Assoc. Prof. Nicole Webster Australian Institute of Marine Science (http://www.aims.gov.au/)

A Postdoc position is available for an immediate start within the project 'Elucidating symbiotic interactions in the ecologically important marine sponge *Ianthella basta*'

Project description:

Marine sponges often contain highly diverse microbial communities that contribute symbiotic functions essential for host fitness and survival. Whilst this makes them attractive models for symbiosis research, high microbial complexity can also make it difficult to unravel the nature of the symbiotic interactions. The sponge *Ianthella basta* is an abundant, ecologically important and widely distributed species found throughout the Indo-West Pacific. *Ianthella basta* maintains highly stable microbial symbioses with an alphaproteobacterium*,* a gammaproteobacterium and a thaumarchaeote as well as symbiotic interactions with a polychaete worm, a holothurian and a goby. With such an interesting ecology, low microbial diversity and high symbiont specificity, *I. basta* represents an ideal model for detailed analysis of sponge holobiont function. The three primary microbial symbionts of *I. basta* are maintained over broad latitudinal gradients, in the face of acute local and global environmental pressures and across different host health states. To explore the functional roles of *I. basta* symbionts we have now undertaken extensive metagenomic and metaproteomic sequencing and combined this 'omic' approach with hypothesis driven experimental research to unravel the nature of the multi-species interactions.

This postdoctoral position will further expand our understanding of the *I. basta* holobiont by
1) Exploring the symbiotic role of other micro- (*Planctomycete* and *Cyanobacteria*) and macro- (*Haplosyllis basticola*, *Synaptula lamberti, Pleurosicya elongata*) organisms within *I. basta*, 2) Undertaking isotope analysis (isotope array and NanoSIMS) to reveal physiological interactions between different members of the holobiont, 3) Exploring the mechanisms involved in establishing and maintaining these symbiotic partnerships, 4) Undertaking experimental incubations to assess how symbiont activity varies under different environmental and physiological conditions.

We are looking for a highly motivated and independent postdoctoral fellow willing to work jointly between the University of Vienna and the Australian Institute of Marine Science. Applicants should have a keen interest in fundamental microbial symbiosis and a strong research background in microbial physiology and environmental microbiology.

Essential Skills:
- PhD degree in microbiology / biological sciences
- Comprehensive understanding of microbial physiology
- Experience in generating and interpreting "meta-omics" data
- Excellent written and verbal communication skills and a demonstrated ability to work as part of a collaborative research team.

Desirable Skills:

- Experience in undertaking marine experimental research
- Isotope analytics / NanoSIMS
- Single-cell genomics
- Cultivation of recalcitrant environmental microorganisms
- Diving qualifications and marine field experience

Conditions of Appointment: We offer up to 2 years of appointment according to the salary scheme of the University of Vienna. The University of Vienna is an equal opportunity employer.

How to Apply: Applicants should submit a single pdf combining a letter of motivation, a detailed CV (including a brief description of research interests, previous employments, and publication list), reprints of your two most important published articles and contact details for at least 2 referees. This document should be submitted by email to n.webster@aims.gov.au. As this position requires an immediate start, evaluation of applicants will start in July 2015 and continue until the position is filled.