Two PhD positions at the Dept of Marine Ecology at the University of Gothenburg

The Linneus Research program ACME (Adaptations to Changing Marine Environments) at the University of Gothenburg announces two PhD positions:

1. Adaptations to varying salinity in the barnacle *Balanus improvisus*
   This PhD-project will use the barnacle, *Balanus improvisus*, as a model species to address fundamental questions about how organisms may adapt to ongoing and forecasted changes in the marine environment. *B. improvisus* occurs mainly in low salinity waters but is a major biofouler on boats in all marine environments. It is one of few macro-invertebrates that inhabits most of the salinity gradient from the North Sea into the Baltic.

   Principal questions that this project will address include (but are not limited to):
   1. Is the broad salinity tolerance of *B. improvisus* a plastic trait or is there a genetic component resulting in local adaptations?
   2. Can we understand a plastic response to salinity in terms of differential expression of coding genes?
   3. Have populations of *B. improvisus* in the Baltic Sea evolved tolerance to particularly low salinities, and is there evidence for genetic assimilation with a reduction in plasticity?

   The candidate is expected to work in close contact with researchers at Dept of Cell and Molecular Biology (CMB) at University of Gothenburg, where CMB contributes expertise in functional genomics and bioinformatics.

   The successful candidate should be interested in questions related to evolution, population genetics and molecular ecology. The work include both field and lab experiments as well as the production and interpretation of genetic data.

2. Species loss and new invasions in rapidly changing environments
   The world’s oceans and coasts are exposed to rapid changes, e.g. global warming and habitat loss. These changes introduce new challenges for marine organisms which may either go locally extinct or tolerate the new conditions. With time there is also the possibility for evolution of new traits enabling a population to persist. Evolutionary responses to rapid environmental changes are today little studied and poorly understood and the proposed PhD-student project will investigate if there are certain combinations of biological and environmental conditions that may favour evolutionary change and lead to persistence when the environment changes rapidly. The long-term goal is to predict if certain organisms are more likely to go extinct and if other organisms will invade changing environments. This work will be mainly theoretical where ecological and evolutionary models are formulated and explored. The work also involves extensive literature search, data base construction and statistical analysis.

   We are looking for a biologist, or a natural scientist of a suitable background, with an academic first degree (Bachelor or Master). The applicant should have a strong interest in
conceptual ecology and evolutionary biology and enjoy theoretical research. Experience and a documented ability to work with large databases, modelling and comparative biology are strong qualifications. Good communication abilities in written and spoken English are strong qualifications.

Both projects are part of the large Linneus research program ACME (Adaptations to a changing marine environment), providing a stimulating environment of scientists in both theoretical and experimental biology.

Position 1 is based at Marine Ecology – Tjärnö in Strömstad. For enquiries please contact the supervisor Carl Andre +46 526-686 33 (Carl.Andre@marecol.gu.se) or assistant supervisors, Per Jonsson (per.jonsson@marecol.gu.se) and Jon Havenhand (jon.havenhand@marecol.gu.se), or the head of the department Per Åberg (Per.Aberg@marecol.gu.se).

Position 2 is based at Göteborg and the project will be performed in cooperation with the project leaders, Karin Harding karin.harding@swipnet.se and Per Jonsson who also can be contacted about further details regarding the content of the project.

Applications (ref. nr. E 334 4646/08-1 resp E 334 4646/08-2) must include a personal statement and research goals, CV and academic transcripts, and should be sent to:

Göteborgs universitet, Marin ekologi, Ann-Ci Niklasson,
Tjärnö, 452 96 Strömstad.

Dead line: February 3, 2009

Two letters of recommendation from academic referees should also be sent directly by e-mail from the referee to Carl Andre (position 1) and to Karin Hårding (position 2).