

Research opportunities

Dienstag, 27 November 2007

Last Updated Donnerstag, 28 Mai 2009

a) Immediate thesis opening

Diploma thesis in bioinformatics We invite highly motivated students with a keen interest in bioinformatics to apply for a diploma/master thesis.

We developed a new approach for the DNA-based identification of organisms, the "character-based DNA barcoding" (Rach et al. 2008). Here, organisms are assigned to taxonomic groups (species, genera, populations) through specific combinations of character states within short DNA fragments. Specific characters can be easily identified by means of the quite powerful CAOS algorithm (Sarkar et al. 2002).

Thesis objectives: Software development for the identification of organisms through "character-based DNA barcodes"; Expansion of the currently used algorithms from single to combined characteristic attributes identification

Qualifications: • Strong interest in bioinformatics • Prior knowledge of basic programming languages (primarily ruby and perl) • Familiar with Mac OS X 10.4 Tiger (and later)

Send your Application by email to Angie.Faust@tiho-hannover.de b) Research opportunities for undergraduates and graduate students Freie Themen für Examens-, Diplom- und Promotionsarbeiten

I. Evolution of development

Evolutionäre Entwicklungsgenetik

Hox genes and the evolution of the "head": characterization of Cnox genes in Cnidaria

Hox-Gene und die Evolution des "Kopfes": Charakterisierung von Cnox-Genen in Nesseltieren

Hox genes and the evolution of the "head": characterization of Hox genes in sponges and ctenophores

Hox-Gene und die Evolution des "Kopfes": Charakterisierung von Hox-Genen in Schwämmen und Rippenquallen

Hox genes and the evolution of the "head": characterization of Hox genes in Placozoa

Hox-Gene und die Evolution des "Kopfes": Charakterisierung von Hox-Genen in Nesseltieren

II. Phylogenetics of Early Diverging Metazoan Groups

Genetic diversity and biogeographic patterns of Placozoa

Genetisches Spektrum und biogeographische Muster von Placozoa

Phylogeny of Cnidaria and cnidarian subgroups

Die Phylogenese von Nesseltieren und deren Untergruppen

The early phylogenetic history of Metazoa

Die frühe phylogenetische Geschichte von Metazoa

III. Analyses of mitochondrial transcriptomes

Analysen mitochondrialer Transkriptome

Transcriptomes of placozoan mitochondria

Mitochondriale Transkriptome der Placozoa

IV. Ecological field work in the nature reserve Riddagshausen near Braunschweig

Ökologische Arbeiten im Europareservat Riddagshausen bei Braunschweig

Behavioral ecology of libellid dragonflies

Verhaltensökologie von Segellibellen

Conservation genetics of libellid dragonflies

Artenschutzgenetik von Segellibellen

Evolution of mating systems in dragonflies

Evolution von Paarungssystemen in Großlibellen

Population dynamics and micro-habitat use in Gerris (Heteroptera: Gerromorpha)
Populationsdynamik und Mikrohabitatnutzung von Wasserläufern (Heteroptera: Gerromorpha)

Habitat preferences in different species of Corixidae (Heteroptera; Corixidae)
Habitatansprüche verschiedener Ruderwanzenarten (Heteroptera; Corixidae)

Species diversity and micro-habitat usage in different species of Nepomorpha (Heteroptera: Nepomorpha)
Artenspektrum und Mikrohabitatnutzung der Wasserwanzen (Heteroptera: Nepomorpha)

Predator- and parasite complex of the Erlenblattkäfers *Agelastica alni* (Coleoptera: Chrysomelidae): Experimental analysis and literature research
Der Räuber- und Parasitenkomplex des Erlenblattkäfers *Agelastica alni* (Coleoptera: Chrysomelidae): Experimentelle Analyse und Literaturlauswertung

V. Conservation genetics of dragonflies in Namibia (different projects)
Artenschutzgenetik von Libellen in Namibia (verschiedene Einzelthemen)

Conservation genetics of dragonflies in the nature reserve Riddagshausen (different projects)
Artenschutzgenetik von Libellen im Europareservat Riddagshausen (verschiedene Einzelthemen)

Conservation genetics of endangered amphibians in the nature reserve Riddagshausen (different projects)
Artenschutzgenetik bedrohter Amphibien im Europareservat Riddagshausen (verschiedene Einzelthemen)

Conservation genetics of reef building corals
Artenschutzgenetik riffbildender Korallen