

Ecological Genomics Ecology And The Evolution Of Genes And Genomes Advances In Experimental Medicine And Biology

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Ecological genomics, from genes to ecosystems

Ecological genomics, from genes to ecosystems (Detlef Weigel and Diethard Tautz detlefweigel@tuebingenmpgde tautz@evolbiompmpgde) At a glance • "Nothing in evolutionary biology makes sense except in the light of ecology" (Rosemary ...

An Introduction to Ecological Genomics - units.it

ecology and evolutionary biology, which is why we place the emphasis on aspects that we judge to be particularly new to them Evolutionary genomics and bioinformatics are companion disciplines to ecological genomics In the last 10 years interest in both disciplines has grown enormously Several textbooks on bioinformatics have already been

Ecological genomics and epidemiology

ecological genomics (1) Population genetics and population genomics can inform epidemiology to further our understanding of epidemics and to provide insights for disease management We will also consider how studies of gene expression can potentially add predictive power at finer spatial and temporal scales than was possible in the past

Genomics for the ecological toolbox

Genomics for the ecological toolbox Michael A Thomas¹ and Rebecca Klaper² ¹Department of Biological Sciences, Campus box 8007, Idaho State University, Pocatello, ID 83209, USA ²Great Lakes WATER Institute, University of Wisconsin - Milwaukee, 600 East Greenfield Ave, Milwaukee, WI 53204, USA Genomics technologies have expanded the types of question that can be addressed in human ...

Ecological genomics predicts climate vulnerability in an ...

LETTER Ecological genomics predicts climate vulnerability in an endangered southwestern songbird Kristen Ruegg,^{1,2*}† Rachael A Bay,^{1,3,4}† Eric C Anderson,^{3,4} James F Saracco,⁵ Ryan J Harrigan,¹ Mary Whitfield,⁶ Eben H Paxton⁷ and Thomas B Smith^{1,8} Abstract Few regions have been more severely impacted by climate change in the USA than the Desert

Ecology Functional genomics in ecological model systems

Ecology An organism's success in any environment is a function of its fitness or suitability for that environment This suitability is affected by a range of mechanical, evolutionary, physiological and ecological factors The context of these factors changes over time, and over the life stages of the organisms Professor Jim Marden and his team at Penn State University use genomics and

Advances in ecological genomics in forest trees and ...

today, evolutionary and ecological genetics has always been a central topic to the field A key goal of modern for-est genomics is to couple provenance studies of pheno-typic variation with genomewide data to characterize the genomic underpinnings of adaptive traits In addition, in situ sampling of native forests provides insights into

Evolutionary and Ecological Genomics of Arabidopsis

the study of ecology and evolutionary genomics, and the approaches that have led to key insights not only for these fields but also for plant biology in general (Mitchell-Olds, 2001; Shimizu, 2002) EVOLUTIONARY HISTORY AND ECOLOGICAL PROFILE OF ARABIDOPSIS Arabidopsis (L Heynh; family Brassicaceae) is a weedy annual plant, occupying

Ecological genomics of local adaptation in Cornus florida ...

Understanding ecological pressures and their evolutionary impacts on natural tree populations represents an active research field in evolutionary ecology and is important to conservation of forests There is little debate abiotic and biotic stressors can result in local adaptation and lead to evolutionary divergence of populations via isola -

Ecological Genomics: Understanding Gene and Genome ...

Keywords: ecological genomics, ecology, genomics, functional genomics, interdisciplinary, multi-disciplinary Introduction The natural environments of organisms present a multitude of biotic and abiotic challenges that require both short-term ecological and long-term evolutionary responses Such re-

Environmental Genomics - An Introduction

Environmental Genomics - An Introduction vii The greatest benefit to be derived from genomics is information provision, genomics is capable of providing: • A better understanding of mechanisms of action - enhancing the ability to identify the specific molecular targets of stressors, helping the Agency to understand the effects of

ECOLOGICAL GENETICS AND GENOMICS - Elsevier

Ecological Genetics and Genomics publishes ecological studies of broad interest that provide significant insight into ecological interactions or/ and species diversification New data in these areas are published as research papers, or methods and resource reports that provide novel information on

Ecological Genomics Course Syllabus - KAUST

Ecological Genomics: Ecological genomics describes the application of genomic tools (high throughput sequencing, microarrays, quantitative PCR, etc) to solve questions of ecology Its purpose is to increase understanding of the responses and interactions of organisms to

Ecological plant epigenetics: Evidence from model and non ...

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Back to nature: ecological genomics of loblolly pine Pinus ...

Back to nature: ecological genomics of loblolly pine (*Pinus taeda*, Pinaceae) ANDREW J ECKERT,*† ANDREW D BOWER,‡ SANTIAGO C GONZA´ LEZ-MARTI´NEZ,§ JILL L WEGRZYN,- GRAHAM COOP*† and DAVID B NEALE†-** *Section of Evolution and Ecology, University of California—Davis, Davis, CA 95616, USA, †Center for Population Biology,

What is needed for next-generation ecological and ...

in ecology and evolution relates to the evolutionary convergence of phenotypes in different taxa If there was a compendium of functional genomics data [gene expression, quantitative trait loci (QTL), or landscape genomics data] from different species that found similar solutions for diversification and occurrence in particular environments

Introduction to Ecological Genomics - University of Hawaii

life sciences, including ecology Several ecological questions can be profitably addressed using genomics technology, including issues of nutrient cycling, population structure, life-history variation, trophic interaction, stress responses and the ecological niche An Introduction to Ecological Genomics focuses on three fundamental

Symposium: Environmental Genomics November 2, 2001

Symposium: Environmental Genomics November 2, 2001 The first theme of our seminar series on Current Themes in Ecology dealt with the timely subject of Environmental (or Ecological) Genomics The technological developments in the area of genomics have alighted the interest of many ecologists Environmental genomics is all about applying genomics to

Ecological genomics of tropical trees: how local ...

Ecological genomics of tropical trees: how local population size and allelic diversity of resistance genes relate to immune responses, cosusceptibility to pathogens, and negative density dependence