REGIONE DEL VENETO

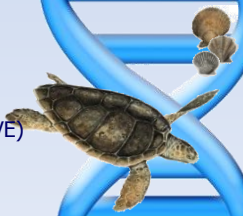
interventi Legge Regionale 15/2007: Progetto CLODIA

UNIVERSITÀ DEGLI STUDI DI PADOVA

3-9 luglio 2011
Palazzo Grassi, Chioggia (VE)

Scuola di Genetica della Conservazione degli Organismi Marini

Summer School on Conservation Genetics of Marine Organisms



Corso di Laurea Magistrale in Biologia Marina
Palazzo Grassi, Riva Canal Vena 1281, Chioggia (VE)
http://chioggia.scienze.unipd.it

Direttore: Rodolfo Costa

Comitato organizzatore:
Maria Berica Rasotto (Università di Padova)
Giorgio Bertorelle (Università di Ferrara)
Leonardo Congiu (Università di Padova)
Lorenzo Zane (Università di Padova)

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Con il patrocinio di

Facoltà di Scienze MM.FF.NN.

UNIFE FACOLTA' DI SCIENZE

S.It.E. - Società Italiana di Ecologia

Associazione Genetica Italiana

ISEB SIBE

Programma

Sunday, July 3

17:00 – 19:00 Welcome registration and accommodation

Monday, July 4

Morning. A. Basics

09:00 – 09:50 A1. Evolutionary biology
Cock Van Oosterhout, University of Hull, UK

09:55 – 10:45 A2. Population biology of marine organisms
Lorenzo Zane, Università di Padova

10:45 – 11:15 Coffee break

11:15 – 12:05 A3. Molecular markers
Leonardo Congiu, Università di Padova

12:10 – 13:00 A4. Population genetics
Giorgio Bertorelle, Università di Ferrara

13:00 – 14:30 Lunch

Afternoon. Practice. From the Sea to the Lab

14:30 – 18:30 Chioggia Fish Market: species identification, dissection and DNA purification

Tuesday, July 5

Morning. B. Conservation Biology and conservation genetics.

09:00 – 09:50 B1. Conservation biology of marine species and environments: concepts and strategies
Maria B. Rasotto, Università di Padova

09:55 – 10:45 B2. Conservation genetics: an introduction
A. Rus Hoelzel, Durham University, Durham, UK

10:45 – 11:15 Coffee break

11:15 – 12:05 B3. Conservation genetics: the molecular, the statistical and the bioinformatics toolboxes
John Carlos Garza, NOAA Fisheries Service, Santa Cruz, USA

12:10 – 13:00 Question Time
Students ask additional questions about lectures A1 to A4 and B1 to B3

13:00 – 14:30 Lunch

Afternoon. Practice. Molecular biology

14:30 – 18:30 DNA amplification and sequencing/genotyping

Wednesday, July 6

Morning.

M1. Major theme 1 & real examples: Identification of conservation units

09:00 – 09:45 Concepts: John Carlos Garza, NOAA Fisheries Service, Santa Cruz, USA

09:45 – 10:45 Real examples: John Carlos Garza, Lorenzo Zane & Teaching Assistants

10:45 – 11:15 Coffee break

M2. Major theme 2 & real examples: Forensic genetics and conservation

11:15 – 12:00 Concepts: Maurizio Casiraghi, Università di Milano-Bicocca

12:00 – 13:00 Real examples: Maurizio Casiraghi, Leonardo Congiu & Teaching Assistants

13:00 – 14:30 Lunch

Afternoon. Practice. Data analysis 1

14:30 – 18:30 Statistical methods and software packages for genetic data analysis

Thursday, July 7

Morning.

M3. Major theme 3 & real examples: Estimating population sizes and migration rates

09:00 – 09:45 Concepts: A. Rus Hoelzel, Durham University, Durham, UK

09:45 – 10:45 Real examples: A. Rus Hoelzel, Giorgio Bertorelle & Teaching Assistants

10:45 – 11:15 Coffee break

M4. Major theme 4 & real examples: Evolutionary processes in changing environments

11:15 – 12:00 Concepts: Carla Sgro, Monash University, Melbourne (Australia)

12:00 – 13:00 Real examples: Carla Sgro, Giorgio Bertorelle & Teaching Assistants

13:00 – 14:30 Lunch

Afternoon. Practice. Data analysis 2

14:30 – 18:30 Statistical methods and software packages for genetic data analysis

Friday, July 8

M5. Major theme 5 & real examples: The genetics of invasions

09:00 –09:45 Concepts: Gabriele Procaccini , Stazione Zoologica A. Dohrn, Napoli

09:45 – 10:45 Real examples: Gabriele Procaccini, Lorenzo Zane & Teaching Assistants

10:45 – 11:15 Coffee break

M6. Major theme 6 & real examples: Genetic management in-situ and ex-situ

11:15 – 12:00 Concepts: Cock Van Oosterhout, University of Hull, UK

12:00 – 13:00 Real examples: Cock Van Oosterhout, Leonardo Congiu & Teaching Assistants

13:00 – 14:30 Lunch

Afternoon. Students projects session

14:30 – 18:30 Selected PhD project will be presented by students and discussed with teachers

20:30 - Social Dinner

Saturday, July 9

Morning.

9.30 - 11.30 Test for credit attribution

11:30 - 13:00 Meeting with local authorities and end of works

M1. Units of conservation: identification
Species are frequently subdivided in differentiated groups or stocks, which may or may not deserve specific conservation efforts. The students will learn how the analysis of genetic data can help in the identification of conservation, and thus possibly management, units, and discuss real examples.

M 2. Forensic genetics and conservation
Different laws and treaties regulate fishing and trading of marine species, especially those threatened by extinction. The students will learn how molecular genetics tools help in detection of illegal acts, for example through correct species identification, and discuss real cases.

M 3. Estimating population sizes and migration rates
Extinctions can be accelerated by genetic effects in small and fragmented populations. The students will learn, theoretically and with real examples, how genetic data can help in the identification and/or predictions of such effects, in the estimation of effective population sizes, and in understanding the levels of genetic and demographic connectivity between areas, and how all this information can be used for the design of networks of protected areas.

M 4. Evolutionary processes in changing environments
Recent environmental changes, including increased fishing pressures, can result in rapid evolution, generating adaptation or maladaptation. Is it possible to manage the eco-evolutionary dynamics in the field or the evolution of specific traits in captivity to favor species survival and improve rescue plans? And how genetic data can contribute to that? The students will learn basic principles and discuss real applications.

M 5. The genetics of invasions
The number and spread of invasive species is marine environment is rapidly increasing, often with negative effects. The students will learn, theoretically and with real cases, how genetics can help in understanding this process and in suggesting strategies to control it.

M 6. Genetic management in-situ and ex-situ
Genetic typing in wild populations and captive stocks provides useful information to develop successful management strategies, for example for ex-situ selective breeding and for reintroductions. The students will learn basic principles and discuss real applications.