

Summer School:

Flowers and Pollinators

field and lab. techniques to assess
functionality for biodiversity conservation

Lectures:

L.Navarro

University of Vigo, Spain

G.Aronne

University of Napoli, Italy

M.Galloni

University of Bologna, Italy

M.Nepi

University of Siena, Italy

13 - 16 September 2016



DIPARTIMENTO DI
AGRARIA

University of Naples Federico II
Department of Agricultural Sciences, Portici (Na), Italy

For informations:

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Marta Galloni: marta.galloni@unibo.it



Aim

The main aim of this course is to acquaint the participants with functional aspects of plant-pollinator interactions to be applied when management decisions are to be made for biodiversity conservation.

Objectives

The main objective is to make all participants familiar with the key aspects of functional flower-pollinators interactions in practical and applied manner.

This course will provide participants with scientific knowledge and practical methods for the measurement of insect-mediated pollination.

Background

Most flowering plants depend to some degree on the pollination service provided by animals to produce fruits and seeds. Nowadays the need for active conservation of pollination interactions is increasingly solicited. Plant-pollinator systems are affected by anthropogenic sources, including fragmentation of habitat, changes in land use, modern agricultural practices, use of pesticides and herbicides, and invasions of non-native species.

State of art

In the framework of pollination conservation, the number of sophisticated analytical methods (including network approaches to examine community-level interactions among flowers and their potential pollinators) is increasing. However, there is still an urgent need to incorporate functionality measures indicating effective pollination of single species into community studies and interaction networks aimed at biodiversity evaluation and conservation. Lack of basic knowledge and practical skills on functional pollination issues prevents the spread of this approach.

Topics

Flower biology (including morphology, phenology, stigma receptivity, pollen viability), mating strategies and sexual systems, floral attractiveness, nectar collection and analysis, foraging behaviour and effectiveness of insect pollinators, quantity and species composition of pollen loads carried by the insects, are some of the main topics.

Method

The course will involve a combination of lectures and field/laboratory activities. Without neglecting the best scientific knowledge on functional pollination, most of the lectures are planned to support practical applications.

Tuesday 13 th September 2016			
15:00-15:30			Welcome and course presentation
15:30-16:30	Lecture 1	L. Navarro	The importance of pollinators: causes and consequences of decline
	Coffee break		
17:00-17:30	Lecture 2	G. Aronne	Plant reproductive success for species preservation and conservation
17:30-18:00	Lecture 3	M. Galloni	Flower-Pollinator interactions: the plant view vs. the insect view
18:00-18:30	Lecture 4	M. Nepi	Nectar in plant-pollinator interactions
Wednesday 14 th September 2016			
9:00-10:00	Lecture 4	G. Aronne	Pollen and stigma biology
	Coffee break		
10:30-13:00	Practical activity	G. Aronne	Tests to assess stigma receptivity Tests to assess pollen viability and pollen germination
	Lunch		
14:30-15:30	Lecture 5	L. Navarro	Pollinator performance: Measuring and comparing the efficiency of pollination
	Coffee break		
16:00-18:30	Practical activity	L. Navarro	Methods for assessing quantity and quality of pollination
Thursday 15 th September 2016			
9:00-10:00	Lecture 6	M. Nepi	Monitoring nectar production dynamics
	Coffee break		
10:30-13:00	Practical activity	M. Nepi	Methods for assessing quantity and quality of nectar production
	Lunch		
14:30-15:30	Lecture 7	M. Galloni	Floral ecology, pollination and plant mating strategies
	Coffee break		
16:00-18:30	Practical activity	M. Galloni	Floral traits, phenology and patterning Determining plant mating system and reproductive effort
Friday 16 th September 2016			
9:00-10:00		All instructors	Methods for data elaboration and interpretation
	Coffee break		
10:30-12:30		All instructors	Methods for data elaboration and interpretation
12:30-13:00			Wrap up

Organisers

The course is organised by the Phenology and Life Strategies Group of the Italian Botanical Society and is hosted by the Department of Agricultural Sciences of the University of Naples Federico II.

Location

The Department of Agricultural Sciences of the University of Naples Federico II is at Portici, a town close to Naples. The Department is located in the Royal Palace and is close to the Archeological Site of Herculaneum.

<http://www.visitercolano.com/en/main-attractions/royal-palace-portici-and-museum-herculaneum.html>

Requirements

The course is a training opportunity for graduating, post-graduated and Ph.D. students, researchers and any professional interested to develop skills on functional pollination issues for biodiversity conservation. Basic knowledge on biology and ecology is a requirement.

Application

Candidate participants have to communicate their intention to take part at the course sending an email to Prof. Giovanna Aronne (aronne@unina.it) at any time and not later than 15th May 2016.

Maximum number of accepted participants is 25. Upon the ascertainment of the requirements, candidate will be accepted on the basis of the first arrived first served rule.

Fees

Tuition for the 4-days course is 200 euro to be paid by each participant on being informed of their acceptance.

Accommodation

With an additional fee of 150 euro, participants can benefit from an agreement with the University of Naples covering two-beds dormitory room, morning breakfast and lunch, during the whole course period (check-in Tuesday 13 September 2016, check-out Friday 16 September 2016). A few single-bed rooms are also available. Once again they will be assigned according to the first arrived first served rule.

Scientific Committee

*Giovanna Aronne
Marta Galloni
Massimo Nepi
Luis Navarro
Veronica De Micco*

Local Organizing Committee

*Giovanna Aronne
Veronica De Micco
Adriana Forlani
Claudia Pone
Roberto Silvestro
Mauro Moreno*
