



UNIVERSITÀ
DEGLI STUDI
FIRENZE

DIPARTIMENTO
DI BIOLOGIA

Avviso di seminario

Lunedì 9 marzo 2015

aula 1 di via Romana 17 (Specola) ore 10:30

il Prof. Dott. Alessandro Massolo

Assistant Professor in Wildlife Health Ecology
Department of Ecosystem and Public Health
Faculty of Veterinary Medicine
University of Calgary, Calgary, Alberta, Canada

Terrà un seminario sul seguente argomento:

***Echinococcus multilocularis* in Nord America:
conoscenze attuali ed ecologia della
trasmissione in aree urbane**

Il seminario è dedicato agli studenti dei corsi di
Parassitologia, Etologia, Biodiversità animale, Conservazione e
gestione delle risorse faunistiche, Ecofisiologia e cambiamenti
climatici, Ecologia e genetica delle popolazioni, Zoologia I e II

Siete tutti cordialmente invitati a partecipare

Felicita Scapini

***Echinococcus multilocularis* in North America: current knowledge and the ecology of transmission in urban settings**

Recent work on the tapeworm *Echinococcus multilocularis*, the causative agent of Alveolar Echinococcosis (AE) in humans, has shed light on the distribution, host partitioning, and its genetic characterization in North America. This parasite, which exists in several strains across the world, is likely expanding its range in the central region of North America and invasions of European strains in this area might have occurred. In large urban settings in central western Canada, where domestic dogs overlap with wild canid populations (e.g. fox, coyote) in city parks, the parasite is endemic and the risk of transmission to dogs, hence to people, is unknown.

The seminar will introduce the key components of the parasite cycle as well as of the ecology of its host community using as example the work conducted in Western Canada. The seminar emphasize the complexity of the systems that regulate the maintenance and transmission of trophically transmitted macro-parasites as *E. multilocularis* and how the complex balance of interactions among predator and preys and their environment shape the dynamics of this host-parasite system.

By describing the research program started in 2010 on the ecology of *E. multilocularis* in Calgary, AB, Canada, the seminar will identify the host partitioning, the spatial and temporal patterns of infections in definitive and intermediate hosts, and the ecological processes that determine these patterns. During the seminar the methodologies and the key results of the study will be presented and discussed.

The seminar will finally emphasize the need to better understand the complexity of host communities and their role in shaping transmission and heterogeneous distribution of trophically transmitted parasites, particularly in urban settings. Moreover, during the seminar we will highlight the role of the different definitive and intermediate hosts in the cycle of the parasites and how recent molecular data seem to indicate that we might be facing an invasion of the European strain in North America.

The lack of adequate information on this parasite in North America, the dominance of the European strain in Alberta, and the discovery of a recent human case in Alberta will be contextualize within a public Health framework. We will also highlight the role of the scientific community in organizing an homogenous and efficient data collection on such a complex ecological and epidemiological system, in providing fact-based recommendations to managers and stakeholders in reassessing the public health risk, in helping them in verifying the adequacy of current international animal import policies, and provide support to managers to increase surveillance efforts to monitor for new potential cases of human AE.

Dr. Alessandro Massolo - Biosketch

Dr. Massolo is a wildlife ecologist with expertise in ecology and behavioural ecology of medium-large vertebrates with a particular focus on terrestrial mammals. During his career he has also gained particular knowledge in biostatistics and ecological and mathematical modelling. His research spanned from Ecology and Behavioural ecology, to Physiology, applied Mathematics, Information Technologies, and allergology.

Since he joined the Department of Ecosystem and Public Health at the Faculty of Veterinary Medicine (University of Calgary, Calgary, Alberta, Canada), as Assistant Professor in Wildlife Health Ecology, he founded the Wildlife Ecology and Spatial Epidemiology Lab (WEASEL) with a wildlife biology wet lab, and a GIS lab. He also co-founded the interdisciplinary Wildlife Disease Ecology Group (iWEG) at the University of Calgary for the promotion of interdisciplinary research and teaching.

His main research programs are on the ecology and dynamics of complex systems, focusing on spatial and temporal heterogeneity of ecological processes and patterns in prey-predator and hosts-parasite interactions.

A) wildlife ecology and gastrointestinal parasite transmission at the interface of wildlife, domestic animals and humans, and on B) the effect of climate and land use changes in arthropod distribution. He is coordinating an interdisciplinary project on coyote ecology and gastrointestinal parasite (*Echinococcus multilocularis*, *Giardia* spp., *Cryptosporidium* spp.) transmission at the interface with dogs and people in urban landscapes.

He has been teaching principles and Advanced Biostatistics in undergraduate and graduate programs since 1995, and General Biology and Ecological Statistics at undergraduate level. At UofC, he currently teaches 3 graduate courses (Spatial analysis in Ecology and Epidemiology, Research Design, One-Health) and 1 undergraduate course (Ecosystem and Public Health).

His laboratory welcomes undergraduate and graduate students from all over the world and hosts visiting scholars within international research collaborations.

He has authored and co-authored more than 85 peer-reviewed publications and 7 book chapters.