

## *CURRICULUM VITAE*

### **GIANNI GILIOLI**

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University of Brescia  
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### **EMPLOYMENT HISTORY:**

2010-present, **Assistant Professor**, School of Medicine, Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy.  
2000-2010, **Assistant Professor** in Ecological Entomology and Applied Entomology (AGR11), Agricultural Faculty, Mediterranean University of Reggio Calabria, Reggio Calabria, Italy.  
1998-2000, **External consultant**, Department of Mathematics, University of Parma, Parma, Italy.  
1996-1998, **Post-doc in Mathematics**, Department of Mathematics, University of Parma, Parma, Italy.

### **EDUCATION:**

**PhD in Animal Biology** (1995), Department of Experimental Evolutionary Biology, University of Bologna, Bologna, Italy. Dissertation defended in October 1995, title "The use of Individual-based Models in the analysis of aggregative and reproductive strategies of Collembola".  
**Training for the qualification to the profession of Biologist** (1991-1992), Natural History Museum, University of Parma, Parma, Italy.  
**Degree in Biological Sciences** (1991), Faculty of Mathematical, Physics and Natural Sciences, University of Parma, Grades: 110/110 cum laude. Dissertation: "Cooperative strategies and their function in a simulated population", supervisor: Prof. V. Parisi, Natural History Museum, University of Parma, Parma, Italy.  
**High School**. Technical Institute, Salò (Brescia), Italy, Grades: 60/60.

### **LANGUAGES:**

Italian, English.

### **CHRONOLOGY AND AREAS OF RESEARCH EFFORTS:**

2009-present. Pest Risk Analysis and Environmental Risk Assessment of invasive species: activity performed as a member of the Scientific Panel on Plant Health (PLH) of the European Food Safety Authority (EFSA) ([www.efsa.europa.eu](http://www.efsa.europa.eu)); Models for the analysis of population dynamics and spread of invasive species; Evaluation of the impact of invasive species based on the analysis of ecosystem services.  
2007- present. Ecological analysis and impact of biotechnology in agriculture: Physiologically-based population models for the analysis of GM crops and their pests. Ecological methods for the analysis and quantification of the environmental impact of GMOs  
2006-present. Monitoring and modeling environmental impacts of chemical pollutants: with particular reference to pesticides. Modeling population dynamics of bioindicators (honeybees) in terrestrial



habitats and analysis of abiotic degradation, bioconcentration and biotransformation in water environments.

- 2003-present. Models for the management of spatially-structured population: Spatially explicit physiologically-based demographic models (lattice models) for potential establishment and spread of invasive alien species; Probabilistic model for the pathway analysis of invasive alien species; Metapopulation models for the design and assessment of management strategies of endangered species and large-scale pest population; Information theory-based approaches are used to rank intervention strategies; Cost-benefit analysis and optimization methods in ecosystem management.
- 2002- present. Eco-epidemiological models: Epidemiological models based on ecological approach for human (e.g. malaria, human trypanosomiasis) and animal (e.g. bovine theileriosis, animal trypanosomiasis) disease transmission; models for vectors population dynamics; Role of environmental forcing variables, environmental heterogeneity, scale and hierarchy in epidemiological systems; Stability analysis and evolutionary properties in epidemiological systems.
- 2001-present. Parameter estimation for ecological models: Methods for the estimation of development, mortality and fecundity rate functions, and predator-prey functional response based on population dynamics field data; Use of macroscopic and microscopic simulation models, stochastic models, time series and Bayesian methods for parameter estimation.
- 2000-present. Field methods for integrated pest management: Development of optimal sampling scheme; Analysis predator-prey and host-parasitoid population system regulation mechanisms in with particular reference to biological control; Study of functional response in predator-prey system; Agro-ecosystem analysis and design of ecosystem management schemes for sustainability and optimal use of ecosystem services and ecological infrastructures.
- 1998-present. Human health and sustainable development in Sub-Saharan Africa: Environmental, social and economic capitals management strategies for poverty alleviation and human health improvement; Prevention and control of arthropod-transmitted diseases in livestock (tick-borne diseases, tsetse-trypanosomiasis) and humans (malaria, sleeping sickness); Design and implementation of community-based adaptive ecosocial system management scheme for sustainable rural development including intensive biofarming, habitat restoration, food security, cooperative enterprises; Bio-economic modeling and analysis of the evolving eco-social systems; Development and implementation of multidimensional assessment schemes for agricultural sustainability.
- 1994-present. Development and implementation of simulation models and software packages to support pest management and agricultural production activities.
- 1993-present. Mathematical models of single population dynamics and simple trophic web: Deterministic and stochastic models of poikilotherm structured population, physiologically-based demographic models (PBDMs) for the analysis of single-species and multi-trophic system dynamics; Derivation and analysis of lumped parameter models; Individual-based models and Markov chains models.
- 1990-1995. Behavioral-ecology: Analysis on the mechanisms, dynamics and functional role of the spatial distribution in animal population; Field and laboratory analysis of aggregation of soil and inter-tidal organisms; Study of evolution and role of aggregative behavior using individual-based models and game-theory.

#### **TEACHING:**

- 2008-present. **Environmental Risk Assessment in Agricultural Biotechnology**, Faculty of Medicine, University of Brescia, Brescia, Italy.
- 2004-present. **Ecology, Ecological Entomology and Plant protection**, Faculty of Agriculture, Mediterranean University of Reggio Calabria, Reggio Calabria, Italy.
- 2001-2002. **Zoology**, Faculty of Agriculture, Mediterranean University of Reggio Calabria, Reggio Calabria, Italy.
- 2000-present. **Organization and teaching of courses to train Field ecologists, Technicians in IPM, Agro-ecosystem managers** in Italy, Ethiopia and Kenya.
- 1992-1994. **Modeling methods in Biology** in a Biophysics Course, Faculty of Science, University of Parma, Parma, Italy.



1987-1995. Organization of **didactic and training series at the Natural History Museum** with emphasis on vertebrate evolution, adaptation, and biogeography (University of Parma, Parma, Italy).

#### **STUDENTS COMPLETING DEGREES:**

2 Ph.D completed

40 MS

Second reader on 2 MS and 2 Ph.D

#### **PUBLICATIONS**

More than 230 publications in international peer reviewed journals, in Italian journal, chapters in international books, national and international conference proceedings.

#### **REVIEWER:**

Ecological Modelling, Ecology and Society, Journal of Applied Entomology, Insect Science, African Journal of Biotechnology, IOBC Bulletin, Human Ecology Review, Applied Mathematical Modelling, Italian Journal of Agrometeorology, Bulletin of Insectology.

#### **BOARD MEMBER:**

Member of the Scientific Panel on Plant Health (PLH) of the European Food Safety Authority (AFSA) (<http://www.efsa.europa.eu>).

Member of Praxis Ethiopia, an international alliance of scientists whose goal is to apply professional expertise to the problems of extreme poverty in Ethiopia (<http://www.praxisethiopia.org/>).

Member of the CASAS-Italia (Centro per l'Analisi dei Sistemi Agricoli Sostenibili-Italia), Perugia, Italy.

Member and treasurer of CASAS-Global an NGO providing low cost analysis of complex ecosystem, agricultural and health problems worldwide for the benefit of populations and governments in developing economies (<http://cnr.berkeley.edu/casas/index.php>).

Member of scientific committee of the Yeha Natural Resource Management Institute for Eastern Africa (YNRMI-EA), Addis Ababa, Ethiopia (<http://ynrmi.org/research.htm>).

Member of the International Society for Ecological Modelling (ISEM) (<http://www.isemna.org/>)

Member of the European Society for Mathematical and Theoretical Biology (<http://www.esmtb.org/news/news.htm>).

Member of the Italian Society of Ecology (<http://www.societaitalianaecologia.org/>).

Member and secretary of the GRIMPP (Italian Research Group on Modelling for Plant Protection) (<http://www.grimpp.it/>).

Member of the Italian Association for Plant Protection (Associazione Italiana per la Protezione delle Piante) (<http://www.aipp.it/home.cfm?>).

Member of the Italian Entomological Society (<http://www.socentomit.it/>).

#### **COLLABORATIVE RESEARCH**

Scientific activity of Dr. Gilioli is done in collaboration with Researchers of many Universities, Research Institutions, Organizations and Extension Services.

##### **University and Research Organizations:**

CNR-IMATI (Institute for Applied Mathematics and Informatics), Milan, Italy; DIPSA (Department for Agro and Urban Systems Protection and Biodiversity Valorization), University of Milan, Italy; Department of Agriculture and Environmental Sciences, University of Udine, Udine, Italy; Department of Environmental Science, Policy and Management, University of California, Berkeley, USA; Centre for International Health, University of Bergen, Bergen, Norway; Institute for Social Sciences in Agriculture, Gender and Nutrition, University of Hohenheim, Germany; Department of Plant Protection, University of Sassari, Italy; Department of Science and Technology for the Environment and Landscape, University of Campobasso, Italy; CNR-ISAAC (Institute of Atmospheric Sciences and Climate), Rome, Italy; Department of Environmental Sciences, University

of Viterbo, Italy; International Centre of Insect Physiology and Ecology (ICIPE), Nairobi, Kenya; Yeha Natural Resource Management Institute for Eastern Africa, Addis Ababa, Ethiopia (YNRMI-EA), B.E.A. Foundation, Addis Ababa, Ethiopia; Green College, Oxford University, GB; University of Neuchâtel, Switzerland; Millennium Institute, Arlington, USA; Addis Ababa University, Addis Ababa, Ethiopia.

**Extension Services:**

S.A.R., Sardegna, Italy; A.R.S.S.A. Abruzzo, Italy; Servizio Fitosanitario Regione Emilia Romagna, Italy; Istituto Nazionale di Apicoltura, Bologna, Italy; Amt für Natur und Umwelt, Chur, Switzerland.

**NGOs**

BioVision Foundation, Stanley Thomas Johnson Foundation, HELVETAS, Swiss Development Cooperation, Austrian Development Cooperation.

**RESEARCH APPOINTMENTS**

2001-2006, Visiting scientist ICIPE (International Centre of Insect Physiology and Ecology), Nairobi, Kenya.

2007-2009, Associated Researcher at CNR-IMATI (Institute for Applied Mathematics and Information Technology), Milan, Italy.

2008-present, Adjunct Professor, Faculty of Medicine, University of Brescia, Brescia, Italy

2009-present, Expert of the Scientific Panel on Plant Health (PLH) of the European Food Safety Authority (EFSA) (<http://www.efsa.europa.eu>).

**REFERCES:**

Prof. A.P. Gutierrez, Professor Emeritus University of California at Berkeley, 203a Mulford Hall, Berkeley, CA 94720, U.S.A., Tel.: 1 510 642-9186; Email: [casas.global@berkeley.edu](mailto:casas.global@berkeley.edu)

Prof. J.C. van Lenteren, Professor Emeritus in Entomology, WU Plant Sciences, Laboratory of Entomology, PO Box 8031, 6700EH Wageningen; Email: [joop.vanlenteren@wur.nl](mailto:joop.vanlenteren@wur.nl)

Prof. P. Luciano, Professore Ordinario in Entomologia Generale e Agraria (AGR11), Università di Sassari, via E. De Nicola 1, 07100 Sassari (Italy) Tel.; +39-079-229202; Email: [pluciano@uniss.it](mailto:pluciano@uniss.it)

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