Graziano Fiorito

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Current Position: Primo ricercatore (II livello), Senior Scientist
Head of Department of Biology and Evolution of Marine Organisms

Current Affiliation:
Department of Biology and Evolution of Marine Organisms
Stazione Zoologica Anton Dohrn, Napoli (Italy)

Education/Training/Experience

Institute and Location	Degree / Function	Year	Field of Study
University Federico II, Napoli	**Laurea (Biology)**	1979	Taxonomy of Insects (Zoogeography)
Napoli, Public Schools	Teacher	1979-1983	Scientific disciplines
Biochemistry Lab, Stazione Zoologica Anton Dohrn	Visiting scientist	1981-1982	Sea urchin embriology
Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA	Visiting scientist	1982	Evolution of social behavior
Neurobiology Lab, Stazione Zoologica Anton Dohrn	Visiting scientist	1982-1983	Social and reproductive behavior (fishes)
Stazione Zoologica Anton Dohrn	Researcher	1983	Pain perception and behavior in invertebrates; social behavior
American Museum Natural History, NY	Visiting scientist	1985	
Stazione Zoologica Anton Dohrn	Group Leader	1989	Behavioral biology and learning (octopus)
Neuroscience Dept., Cold Spring Harbor Laboratory, NY	Visiting scientist	1997	Cell and molecular neuroscience (Drosophila)
Stazione Zoologica Anton Dohrn	Primo Ricercatore	1999 -	Behavioral biology

Appointments and awards

1988 – 1996: Supervisor of the Documentation Services of Stazione Zoologica.

1990 – 1996: Assistant to the President (G. Salvatore) for the evaluation procedures.

1994 – 1996: Supervisor of the Networking project for Stazione Zoologica.

2003 Assistant to the Director for submission of the internal evaluation of Stazione Zoologica to the Ministry of Research (CIV and CIVR).

2008 – 2010: Assistant to the President (R. Di Lauro) for the agenda and organization of the SZN Scientific Council and Review Boards

2009 – 2012: Member of the Advisory Board of "*Novel Design Principles and Technologies for a New Generation of High Dexterity Soft-bodied Robots Inspired by the Morphology and Behaviour of the Octopus*" FP7 Funded project; Cecilia Laschi Coordinator, Scuola Superiore S. Anna, Pisa (Italy).

2010 – 2014: Deputy Director, Stazione Zoologica Anton Dohrn

2011 Coordinator of the selection procedure for the appointment of the Scientific Community at large for the Stazione Zoologica

2011 – 2013: Coordinator of the National Research Evaluation procedures for the Stazione Zoologica (OIV and ANVUR).

2012 – 2014: Coordinator, SZN-ASSEMBLE Project, www.assemblemarine.org.

2014 – current: Coordinator of the Technical Support Working Group for the assessment of Institutional Performance for the SZN

2012 – 2015: Reference for the SZN for the Project BioForIU "Formazione - Infrastruttura multidisciplinare per lo studio e la valorizzazione della Biodiversità marina e terrestre nella prospettiva della "Innovation Union".

2012 – 2015: Coordinator, Project MODO-for SZN, Model Organism, POR Campania FSE 2007–2013

2012 – 2014: Head, Department of Animal Physiology and Evolution, Stazione Zoologica Anton Dohrn

2014 – present: Head, Department of Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn

Other

1994 Co-organizer conference 'The behaviour and Natural History of Cephalopods' (Vico Equense, 5-11 June); Cephalopod International Advisory Council

1998 Organizer of the 'International Conference Social Learning and cultural transmission: from invertebrates to great apes and humans. Towards a biological synthesis' (Napoli, Italy)

2009 Member of the Faculty and member of the Local Organizing Committee 'First Kemali-IBRO Mediterranean School of Neuroscience' (The Synapse from Beach to Bedside: Synaptic Transmission, Plasticity, Synaptopathies). Stazione Zoologica Anton Dohrn. Napoli, 21-30 September, 2009

2010 Co-organizer FENS-IBRO SfN School - 'Brain Evolution and its consequences for brain pathology'. Stazione Zoologica Anton Dohrn, Napoli, Italy. 21-26 March

2010 Member of the Faculty 'Scuola Estiva di Alta Formazione in Filosofia ed Etologia Umana'. Culture Animali e Dimensione Ecologica. Università di Cassino, June

2011 Organizer of EuroCeph 2011 meeting "Cephalopod Biology Research in the 21st century - A European perspective", April 7 – 10, Vico Equense, Napoli, Italy

2011 Co-Director and Co-Organizer '2nd Kemali-IBRO Mediterranean School of Neuroscience. Invertebrate Neurobiology, Neuroethology, and Plasticity'. Stazione Zoologica Anton Dohrn, Napoli, Italy. 6-13 July

2012 – current: Coordinator and co-Chair of the Steering Committee for the development of "Guidelines for care and management of cephalopods in research and training", following Directive 2010/63/EU

2013 – present: Member of the Management Committee (Italian representative) COST Action FA1301 – CephInAction

Students' Supervision

i. Tutor of several Laurea degree dissertations (> 70): Italian University MSc degree

ii. co-tutor of BSc (and equivalent dissertations, > 10): US students, Harvard University, Southampton City College

iii. Director of Studies for PhD projects: 21 (national), 10 (international, including 2: UK)

Publications (*2005 to present*)

Josef N., Berenshtein I., Fiorito G., Sykes A.V., Shashar N. (2015). Camouflage during movement in the European cuttlefish (*Sepia officinalis*). Journal of Experimental Biology, In Press

Zarrella I., Ponte G., Baldascino E., Fiorito G. (2015). Learning and memory in octopuses: a case of biological plasticity. Current Opinion in Neurobiology, 35: 74–79

Fiorito G., Affuso A., Basil J., Cole A., de Girolamo P., D'Angelo L., Dickel L., Gestal C., Grasso F., Kuba M., Mark F., Melillo D., Osorio D., Perkins K., Ponte G., Shashar N., Smith D., Smith J., Andrews P.L.R. 2015. A Guidelines for the Care and Welfare of Cephalopods in Research. Laboratory Animals, p. 1-93, In Press

De Luca D., Catanese G., Fiorito G., Procaccini G. (2015). A new set of pure microsatellite loci in the common octopus *Octopus vulgaris* Cuvier, 1797 for multiplex PCR assay and their cross-amplification in *O. maya* Voss & Solís Ramírez, 1966. Conservation Genetics Resources; 7: 299-301.

Amodio P., Andrews P., Salemme M., Ponte G., Fiorito G. (2014). The Use of Artificial Crabs for Testing Predatory Behavior and Health in the Octopus. ALTEX, 31(4): 494-499

De Luca D., Catanese G., Procaccini G., Fiorito G. (2014). An integration of historical records and genetic data to the assessment of global distribution and population structure in *Octopus vulgaris*. Evolutionary and Population Genetics, 2, 55.

Josef N., Mann O., Sykes A.V., Fiorito G., Reis J., Maccusker S., Shashar N. (2014). Depth perception: cuttlefish (*Sepia officinalis*) respond to visual texture density gradients. Animal cognition, 17(6): 1393-1400.

Fiorito G., Affuso A., Anderson D., Basil J., Bonnaud L., Botta G., Cole A., D'Angelo L., De Girolamo P., Dennison N., Dickel L., Di Cosmo A., Di Cristo C., Gestal C., Fonseca R., Grasso F., Kristiansen T., Kuba M., Maffucci F., Manciocco A., Mark F., Melillo D., Osorio D., Palumbo A., Perkins K., Ponte G., Raspa M., Shashar N., Smith J., Smith D., Sykes A., Villanueva R., Tublitz N., Zullo L., Andrews P. (2014). Cephalopods in neuroscience: regulations, research and the 3Rs. Invert Neurosci 1-24. DOI 10.1007/s10158-013-0165-x

Locatello L., Fiorito G., Finos L., Rasotto M.B. (2013). Behavioural and immunological responses to an immune challenge in *Octopus vulgaris*. Physiology & Behavior 122, 93-99.

Ponte G., Droscher A., Fiorito G. (2013). Fostering cephalopod biology research: past and current trends and topics. Invertebrate Neuroscience, 13(1):1-9.

Ponte G., Fiorito G. (2013). A special issue on cephalopod biology: contributions of a community to the advancements of the biology of cephalopods. Journal of Experimental Marine Biology and Ecology 2013; 447: 1-3.

Josef N., Amodio P., Fiorito G., Shashar N. (2012). Camouflaging in a complex environment-octopuses use specific features of their surroundings for background matching. Plos One, 7(5): e37579.

Canali E., Ponte G., Belcari P., Rocha F., Fiorito G. (2011). Evaluating age in *Octopus vulgaris*: estimation, validation and seasonal differences. Marine Ecology Progress Series, 441: 141-149.

Shomrat T., Graindorge N., Bellanger C., Fiorito G., Loewenstein Y., Hochner B. (2011). Alternative Sites of Synaptic Plasticity in Two Homologous ''Fan-out Fan-in'' Learning and Memory Networks. Current Biology, 21: 1-10.

Margheri L., Ponte G., Mazzolai B., Laschi C., Fiorito G. (2011). Non-invasive study of *Octopus vulgaris* arm morphology using ultrasound. Journal of Experimental Biology, 214: 3727-3731.

Tricarico E., Borrelli L., Gherardi F., Fiorito G. (2011). I Know My Neighbour: Individual Recognition in *Octopus vulgaris*. Plos One, 6(4): e18710.

Hermosilla C.A., Rocha F., Fiorito G., Gonzalez A.F., Guerra A. (2010). Age validation in common octopus *Octopus vulgaris* using stylet increment analysis. ICES Journal of Marine Science, 67(7): 1458-1463.

Sirakov M., Zarrella I., Borra M., Rizzo F., Biffali E., Arnone M.I., Fiorito G. (2009). Selection and validation of a set of reliable reference genes for quantitative RT-PCR studies in the brain of the Cephalopod Mollusc *Octopus vulgaris*. BMC Molecular Biology, 10; 10-70.

Shomrat T., Zarrella I., Fiorito G., Hochner B. (2008). The octopus vertical lobe modulates short-term learning rate and uses LTP to acquire long-term memory. Current Biology, 18(5): 337-342.

Grimaldi A.M., Agnisola C., Fiorito G. (2007). Using ultrasound to estimate brain size in the cephalopod *Octopus vulgaris* Cuvier in vivo. Brain Research, 1183: 66-73.

Barbato M., Bernard M., Borrelli L., Fiorito G. (2007). Body patterns in cephalopods "Polyphenism" as a way of information exchange. Pattern Recognition Letters, 28: 1854-1864.

Aiello G., Barattolo F., Barra D., Fiorito G., Mazzarella A., Raia P., (2007). Fractal analysis of ostracod shell variability: A comparison with geometric and classic morphometrics. Acta Palaeontologica Polonica, 52: 563-573.

Sumbre G., Fiorito G., Flash T., Hochner B. (2006). Octopuses use a human-like strategy to control precise point-to-point arm movements. Current Biology, 16: 767-772, 2006.

Hochner B., Shomrat T., Fiorito G. (2006). The octopus: A model for a comparative analysis of the evolution of learning and memory mechanisms. Biological Bulletin, 210: 308-317.

Sumbre G., Fiorito G., Flash T., Hochner B. (2005). Motor control of flexible octopus arms. Nature 433: 595-596.

Book Chapters:

Ponte G., Fiorito G. (2015). Immunohistochemical Analysis of Neuronal Networks in the Nervous System of Octopus vulgaris. Immunocytochemistry and Related Techniques; 63-79

Tricarico E., Amodio P., Ponte G., Fiorito G. (2014). Cognition and Recognition in the Cephalopod Mollusc *Octopus vulgaris*: Coordinating Interaction with Environment and Conspecifics. In: Biocommunication of Animals (ed. Witzany, G.), pp. 337-349.Springer Netherlands.

Amodio P., Fiorito G. (2013). Observational and Other Types of Learning in Octopus. In: Invertebrate Learning and Memory. Menzel R and Benjamin P.R editors. Elsevier, UK. pp. 293-302.

Borrelli L., Fiorito G. (2008). Behavioral Analysis of Learning and Memory in: Cephalopods. In: Menzel RVE, editors. Learning and Memory: A Comprehensive Reference. Elsevier, UK, pp. 605-627.

Book

Borrelli L., Gherardi F., Fiorito G. (2006). A Catalogue of Body Patterning in Cephalopoda. Napoli, Italy: Stazione Zoologica A. Dohrn; Firenze University Press. 626 p.