Giovanna Ponte

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Current Position: Senior Researcher (Primo Ricercatore)
Current Affiliation:

Department of Biology and Development of Marine Organisms (BEOM)
Stazione Zoologica Anton Dohrn,
Istituto Nazionale di Biologia, Ecologia e Biotecnologie Marine
Villa Comunale, 80121 Naples, Italy

Education/Training/Experience

Institute and Location	Degree/Function	Year	Field of Study
Chemistry and Pharmaceutical Technologies, Università degli Studi di Napoli Federico II (Napoli, Italy)	Master Degree (Laurea) BS+MS	03-2008	Pharmachology
Istituto di Biochimica delle Proteine – CNR, Napoli (Italy)	Internship	2008	Isolation and identification of relevant food allergen proteins
Department of Neuroscience, Università degli Studi di Parma (Italy)	Stage	2008	Neuroanatomy
Scuola Superiore di Studi Universitari e di Perfezionamento S. Anna di Pisa (Italy)	Contractor	2009-2010	Biorobotics - Analysis of the octopus' arm to facilitate design of bio-inspired robotic arm and its control
Neurosciences Institute, San Diego (CA, USA)	Visiting Researcher	2010	Neuroanatomy; Neuromodulation
Center for Micro-Biorobotics of IIT@SSSA, Istituto Italiano di Tecnologia (Pontedera, Pisa)	Contractor	2010-2011	Biorobotics - Functional approach to the characterization of the arm of *Octopus vulgaris*
Department of University of Calabria (Cosenza, Italy)	PhD, Degree	12-2012	Animal Biology

Institute and Location	Degree/Function	Year	Field of Study
Department of Biology and Development of Marine Organisms (BEOM), Stazione Zoologica Anton Dohrn, Napoli	Postdoctoral Fellow	2013-2019	Animal Biology and animal welfare
Neuroscience Dept. – Biological Sciences, University of Southampton (UK)	Visiting Researcher	2018	Neurophysiology and Neuromodulation
BEOM - Stazione Zoologica Anton Dohrn, Napoli	Researcher	2019 -	Neurophysiology of marine organism
BEOM - Stazione Zoologica Anton Dohrn, Napoli	Senior Researcher	2023 -	Neurophysiology of marine organism

Ongoing and recently completed projects

SBEP24 - SEANERGIES- Cell-cultured octopus production through sustainable marine biomass valorization – Italian Partner **co-proponent** (2024-2028).

Biodiversity2Drugs - Peptide Biodiversity: Advancing Human Health through Nature's Pharmacological Treasures – Italian Partner **co-proponent** (2024-2027).

Management Committee Member (Italy) & co-Grant Awarding Coordinator- **COST ACTION CA23106 AFFECT-EVO – "**An Evolutionary View to Understanding Affective States across Species" **- co-proponent** (2024-2028)

External Expert for Cephalopods- "European Reference Center for the Welfare of Aquatic Animals (EURCAW AQUA)" (2024-2027)

MUR – Bando PRIN 2022 PNRR - CIAO MARE**:** Cephalopod Integrated Analysis to identify the impact Of MARine Environmental pollution - **co-proponent** (2023-2026).

DEEPVEN CRIMAC **-** Deep venoms: characterization, evolution and biotechnological potential of mesophotic corals venom from Calabria - **co-proponent** (2023) - Fondo FSC 2014-2020 - Piano Stralcio "Ricerca e Innovazione 2015-2017.

HSA Ceph1/2019 - Bringing Humane Slaughtering to cephalopod molluscs: an integrative approach – (2019-2025) - **Proponent -** HSA Crustacean/Cephalopod Slaughter Award 2018 - Grant Reference number HSA-Ceph-01/1

EASI-Genomics (Unraveling the complex genome of an iconic non-model species: *Octopus vulgaris*) 2nd TNA Call - PID10443**, co-proponent** (2020).

Chair – ***COST Action FA1301*** **-** Cephs*In*Action (2013-2017). A network for improvement of cephalopod welfare and husbandry in research, aquaculture and fisheries.

Member of the Editorial Board – Journal of Comparative Physiology-A; Invertebrate Physiology (section of Frontiers in Physiology)

Member of the Faculty: COST Academy*,* COST Association Brussels (Belgium) (2018-2023)

Invited speaker

Club of Invertebrate Neurobiology (Lyon, FR)**; Member of the Faculty COST Academy,** COST Association Brussels (Belgium)**; Freie Universität Berlin** (DE); **Center for Mind/Brain Sciences (CIMeC)**, University of Trento; **YOUMARES6 Bremen** (DE) **MPW2016** 1st National Marine Biodiversity Institute of Korea's Marine Organism Parataxonomist Workshop. National Marine Biodiversity Institute of Korea in Seocheon, South Korea.

Other

Member of the Advisory Board – Journal of Comparative Physiology - A

Faculty Member – Cephs Biology and Care (CBC): Faculty for the years: 2014, 2015, 2016, 2017, 2019, 2020, 2022. *Topics:* General and Local Anesthesia: introduction, aquatic species and cephalopods. FELASA accredited course on cephalopods as laboratory animals (CephRes)

Co-organizer Workshop 5 CIAC 2018 – Cephalopod Science: the direction of future research and the relevance of new policies". Organizers: Ponte G, Gleadall I, Fiorito G. Cephalopod International Advisory Council Conference 2018; St. Petersburg, Florida, USA, 10-11, November.

Guest Editor – Research Topic: Cephs*In*Action: Towards Future Challenges for Cephalopod Science; *Fronties in Physiology* (Front. Physiol.; 2018).

Guest Editor – Research Topic: The Digestive Tract of Cephalopods: at the Interface Between Physiology and Ecology; Frontiers in Physiology (Front. Physiol.; 2017).

Guest Editor – Special Issue: Cephalopod Biology Cephalopods; Journal of Experimental Marine Biology and Ecology (JEMBE; 2013).

Guest Editor, Editorial Management and Assistant – Abstracts of Contributions Presented at EuroCeph 2011 "Cephalopod Biology Research in the 21st Century-A European Perspective"; Journal of Shellfish Research, 30(3): 989-1023 (2011)

Co-local-organizer – "2nd joint Kemali-IBRO Mediterranean School of Neuroscience" - Stazione Zoologica Anton Dohrn, 6-13 July, 2011, Naples, Italy.

Management and Assistant – Abstracts of Contributions Presented at EuroCeph 2011 "Cephalopod Biology Research in the 21st Century-A European Perspective"; Journal of Shellfish Research, 30(3): 989-1023 (2011)

Founding Member – Associazione Cephalopod Research, CephRes, a no profit research organization and Member of the Board of Directors.

Students' Supervision

Currently supervising: 1 Research Fellow, 1 PhD student, 1 MSc student, 1Internship.

Successfully supervised:

Director of Studies 1 PhD student (OU, SZN) – PhD UK SZN ciclo XXII (Stazione Zoologica Anton Dohrn Open University, UK).

Supervisor: 5 Master Degree Thesis Student (Università degli Studi di Napoli Federico II; 2 from International Master of Science in Marine Biological Resources - IMBRSea - Master Programme - Ghent University, Belgium; Università ALMA MATER STUDIORUM - Università di Bologna; Università degli Studi di Trieste).

Internship Supervisor: 11 students (1 student ERASMUS+ - Université Claude Bernard Lyon1, Lyon, France; 2 students International MS in Marine Biological Resources – IMBRSea - Ghent University, Belgium; 3 students Università di Trento - Center for Mind/Brain Sciences -CIMeC; 1 student Ecole nationale supérieure de biotechnologie des biomolecules de Bordeaux - ENSTBB – Biotechnology – Bordeaux, France; 1 student Università di Plymouth - Marine Biology & Oceanography – Plymouth – UK; 1 student Università degli Studi di Napoli Federico II, Naples

Co-Supervisor:

- 1 PhD student (WUR, SZN) - Stazione Zoologica Anton Dohrn and Wageningen University & Research, Netherlands- started November 2024
- 1 PhD student (UVienna, SZN) - Stazione Zoologica Anton Dohrn and Università di Vienna, Austria - luglio 2018 - 7 marzo 2023 VIVA 7 marzo 2023 (PhD granted).
- 1 PhD student (KU Leuven, SZN) - Università KU Leuven and Stazione Zoologica Anton Dohrn - novembre 2017 - 26 giugno 2023 - VIVA 26 giugno 2023 (PhD granted).
- 2 PhD (PhD UNICAL) - Università della Calabria UNICAL - novembre 2016 - febbraio 2020 (PhD granted); novembre 2014 - gennaio 2017 (PhD granted)

Publications

Link to the full list of published work

Google Scholar WoS ORCID

List of publications of the last 10 years

Journal Papers

Holzinger, C., Ritschard, E.A., Imperadore, P., **Ponte, G.**, Albertin, C.B., Fiorito, G. and Simakov, O., (**2025**). Characterization of C2H2 superfamily expansions in cephalopods and their contribution to nervous system evolution. *iScience*, 113561*;* doi 10.1016/j.isci.2025.113561

Zinourov Roncalli di Montorio, M., Falcone, C. and **Ponte, G.**, (**2025**). Unveiling the Hidden World of Octopus Glia. *Brain Behavior and Evolution.* 100 (4): 246–262; doi: 10.1159/000545910

Pedà, C., Malara, D., Longo, F., Laface, F., Battaglia, P., Berti, C., Consoli, P., **Ponte, G.**, Andrews, P., Greco, S. and Romeo, T., (**2025**). Microplastic occurrence in the digestive system and health status assessment in a commercially important cephalopod species, *Sepia officinalis* from the Gulf of Patti (southern Tyrrhenian Sea). *Marine Pollution Bulletin*, *214*, p.117780; doi: 10.1016/j.marpolbul.2025.117780

Pizzulli, F., Barjami, M., Edelman, D.B., Fiorito, G. and **Ponte, G.**, (**2025**). Macroscale Connectivity in the Octopus brain. *bioRxiv*, pp.2025-05; doi: 10.1101/2025.05.28.656524

Destanović, D., Schultz, D.T., Styfhals, R., Cruz, F., Gómez-Garrido, J., Gut, M., Gut, I., Fiorito, G., Simakov, O., Alioto, T.S., **Ponte, G.**✉, Seuntjens, E.✉ (**2023**). A chromosome-level reference genome for the common octopus, *Octopus vulgaris* (Cuvier, 1797). *G3 Genes|Genomes|Genetics*: jkad220; doi:10.1093/g3journal/jkad220

Dissegna, A., Borrelli, L., **Ponte, G.**, Chiandetti, C. and Fiorito, G., (**2023**)**.** . Octopus vulgaris exhibits interindividual differences in behavioural and problem-solving performance. *Biology*, *12*(12), p.1487; doi: 10.3390/biology12121487

Baden, T., Briseño, J., Coffing, G., … **Ponte, G.**, et al., (**2023**). Cephalopod-omics: emerging fields and technologies in cephalopod biology. Integrative and Comparative Biology, 63(6), pp.1226-1239; doi:10.1093/icb/icad087

Imperadore, P., Cagnin, S., Allegretti, V., Millino, C., Raffini, F., Fiorito, G., **Ponte,G.** (**2023**). Transcriptome-wide selection and validation of a solid set of reference genes for gene expression studies in the cephalopod mollusk *Octopus vulgaris*. *Frontiers in Molecular Neuroscience*, **16:** 1091305; doi:10.3389/fnmol.2023.1091305

Styfhals, R., Zolotarov, G., Hulselmans, G., Spanier, K.I., Poovathingal, S., Elagoz, A.M., Deryckere, A., Rajewsky, N., **Ponte, G.**, Fiorito, G. and Aerts, S. (2022). Cell type diversity in a developing octopus brain. *Nature Communications, 13(1), pp.1-17;* doi: 10.1038/s41467-022-35198-1

Petrosino, G.*, **Ponte, G.** *, Volpe, M. *, Zarrella, I., Ansaloni, F., Langella, C., Di Cristina, G., Finaurini, S., Russo, M.T., Basu, S. and Musacchia, F. (2022). Identification of LINE retrotransposons and long non-coding RNAs expressed in the octopus brain. *BMC Biology*, 20(1), pp.1-22; doi: 10.1186/s12915-022-01303-5

Ponte, G., Chiandetti C, Edelman DB, Imperadore, P., Pieroni, E.M., and Fiorito, G. (2022). Cephalopod Behavior: From Neural Plasticity to Consciousness. *Frontiers in Systems Neuroscience*, 15: 787139; doi: 10.3389/fnsys.2021.787139

Ponte, G., Roumbedakis, K., COST Action FA1301, Galligioni, V., Dickel, L., Bellanger, C., Pereira, J., Vidal, E.A., Grigoriou, P., Alleva, E. and Santucci, D., et al. (2022). General and species-specific recommendations for minimal requirements for the use of cephalopods in scientific research. *Laboratory Animals*; doi: 10.1177/00236772221111261

Andrews, P.L.R., **Ponte, G.** and Rosas, C. (2022) Methodological considerations in studying digestive system physiology in octopus: limitations, lacunae and lessons learnt. Front. Physiol. 13:928013; doi: 10.3389/fphys.2022.928013

Ponte, G., Taite, M., Borrelli, L., Tarallo, A., Allcock, A.L. and Fiorito, G. (2021). Cerebrotypes in Cephalopods: Brain Diversity and its Correlation with Species Habits, Life History, and Physiological Adaptations. *Frontiers in Neuroanatomy*, 14:565109; doi: 10.3389/fnana.2020.565109

De Sio, F., Hanke, F.D., Warnke, K., Marazia, C., Galligioni, V., Fiorito, G., Stravidou, I. and **Ponte, G.** (2020). E Pluribus Octo–Building Consensus on Standards of Care and Experimentation in Cephalopod Research; a Historical Outlook. *Frontiers in Physiology*, *11:* 645; doi: 10.3389/fphys.2020.00645

Sykes, A.V., Almansa, E., **Ponte, G.**, Cooke, G.M. and Andrews, P.L.R. (2020). Can cephalopods vomit? Hypothesis based on a review of circumstantial evidence and preliminary experimental observations. *Frontiers in Physiology*, *11: 765*; doi: 10.3389/fphys.2020.00765

Cooke, G.M., Anderson, D.B., Begout, M.L., Dennison, N., Osorio, D., Tonkins, B., Kristiansen, T., Fiorito, G., Galligioni, V., **Ponte, G**. and Andrews, P.L.R. (2019). Prospective severity classification of scientific procedures in cephalopods: Report of a COST FA1301 Working Group survey. *Laboratory Animals*, *53*(6): 541-563; doi: 10.1177/0023677219864626

Frasnelli, E., **Ponte, G.**, Vallortigara, G., and Fiorito, G. (2019). Visual Lateralization in the Cephalopod Mollusk *Octopus vulgaris*. *Symmetry* 11(9): 1121; doi: 10.3390/sym11091121

Imperadore, P., Lepore, M.G., **Ponte, G.**, Pflüger, H.-J., and Fiorito, G. (2019). Neural pathways in the pallial nerve and arm nerve cord revealed by neurobiotin backfilling in the cephalopod mollusk *Octopus vulgaris*. *Invertebrate Neuroscience* 19(2):5; doi: 10.1007/s10158-019-0225-y

Zarrella, I., Herten, K., Maes, G.E., Tai, S., Yang, M., Seuntjens, E., Ritschard, E.A., Zach, M., Styfhals, R., Sanges, R., Simakov, O., **Ponte, G.,** and Fiorito, G. (2019). The survey and reference assisted assembly of the *Octopus vulgaris* genome. *Scientific Data* 6(1): 13; doi: 10.1038/s41597-019-0017-6

Shigeno, S., Andrews, P.L.R., **Ponte, G.**, and Fiorito, G. (2018). Cephalopod Brains: An Overview of Current Knowledge to Facilitate Comparison with Vertebrates. *Frontiers in Physiology* 9: 952; doi: 10.3389/fphys.2018.00952

Baldascino, E., Di Cristina, G., Tedesco, P., Hobbs, C., Shaw, T.J., **Ponte, G.**, and Andrews, P.L.R. (2017). The Gastric Ganglion of *Octopus vulgaris*: Preliminary Characterization of Gene- and Putative Neurochemical-Complexity, and the Effect of *Aggregata octopiana* Digestive Tract Infection on Gene Expression. *Frontiers in Physiology* 8:1001; doi: 10.3389/fphys.2017.01001

Ponte, G., and Modica, M.V. (2017). Salivary Glands in Predatory Mollusks: Evolutionary Considerations. *Frontiers in Physiology* 8: 580; doi: 10.3389/fphys.2017.00580

Ponte, G., Sykes, A.V., Cooke, G.M., Almansa, E., and Andrews, P.L.R. (2017). The Digestive Tract of Cephalopods: Toward Non-invasive *In vivo* Monitoring of Its Physiology. *Frontiers in Physiology* 8:403; doi: 10.3389/fphys.2017.00403

Sykes, A. V., Almansa, E., Cooke, G. M., **Ponte, G.** and Andrews, P.L.R. (2017). The digestive tract of cephalopods: a neglected topic of relevance to animal welfare in the laboratory and aquaculture. *Frontiers in Physiology*, 8: 492; doi: 10.3389/fphys.2017.00492

Ponte, G., Sykes, A. V., Cooke, G. M., Almansa, E., and Andrews, P.L.R. (2017). The digestive tract of cephalopods: toward non-invasive *in vivo* monitoring of its physiology. *Frontiers in Physiology*, 8: 403; doi: 10.3389/fphys.2017.00403

Shaw, T.J., Osborne, M., **Ponte, G.**, Fiorito, G. and Andrews, P.L.R. (2016). Mechanisms of wound closure following acute arm injury in *Octopus vulgaris*. *Zoological Letters*, 2: 8; doi: 10.1186/s40851-016-0044-5

Di Cristina, G., Andrews, P., **Ponte, G.**, Galligioni, V., and Fiorito, G. (2015). The impact of Directive 2010/63/EU on cephalopod research. *Invertebrate Neuroscience*, 15: 8; doi: 10.1007/s10158-015-0183-y

Fiorito, G., Affuso, A., Basil, J., Cole, A., de Girolamo, P., D'Angelo, L., Dickel, L., Gestal, C., Grasso, Kuba, M., Mark, F., Melillo, D., Osorio, D., Perkins, K., **Ponte, G.**, Shashar, N., Smith, D., Smith, J., and Andrews, P.L.R. (2015). Guidelines for the Care and Welfare of Cephalopods in Research - A consensus based on an initiative by CephRes, FELASA and the Boyd Group. *Laboratory Animals*, 49(2 Suppl): 1-90; doi: 10.1177/0023677215580006

Zarrella, I., **Ponte, G.**, Baldascino, E. and Fiorito, G. (2015). Learning and memory in *Octopus vulgaris*: a case of biological plasticity. *Current Opinion in Neurobiology*, 35: 74-79; doi: 10.1016/j.conb.2015.06.012

Book chapters

Ponte, G., Andrews, P., Galligioni, V., Pereira, J., and Fiorito, G. (2019). Cephalopod Welfare, Biological and Regulatory Aspects: An EU Experience. in *The Welfare of Invertebrate Animals,* eds. C. Carere & J. Mather. (Cham, Switzerland: Springer International Publishing), p. 209-228.

O'Brien, C.E., **Ponte, G.**, Fiorito, G. (2019). Octopus. In: *Encyclopedia of Animal Behaviour 2nd edition*; Reference Module in Life Sciences, Elsevier.

Gerdol, M., Gomez-Chiarri, M., Castillo, M.G., Figueras, A., Fiorito, G., Moreira, R., Novoa, B., Pallavicini, A., **Ponte, G.**, Roumbedakis, K., Venier, P. (2018). Immunity in molluscs: recognition and effector mechanisms, with a Focus on Bivalvia. In *Advances in Comparative Immunology* (Springer, Cham), p. 225-341.

Marini, G., De Sio, F., **Ponte, G.**, and Fiorito, G. (2017). Behavioral Analysis of Learning and Memory in Cephalopods. In *Learning and Memory: A Comprehensive Reference (Second Edition),* ed. J.H. Byrne. (Amsterdam, The Netherlands: Academic Press, Elsevier), p. 441-462.

Ponte, G., and Fiorito, G. (2015). Immunohistochemical Analysis of Neuronal Networks in the Nervous System of *Octopus vulgaris.* In *Immunocytochemistry and Related Techniques,* eds. A. Merighi & L. Lossi (Springer Verlag), p. 61-77.

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. (Springer Netherlands), p. 337-349.