

**PERSONAL
INFORMATION****Filomena Caccavale**

📍 Via Palatone 50, Saviano (NA)

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Date of birth 01/04/1989

Nationality Italian

EDUCATION

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- 23/03/2018 **PhD in Life and Molecular Sciences, Open University of London (UK).**
ARC institute: Stazione Zoologica Anton Dohrn (Naples, Italy).
Data of defense: 15/11/2017
External examiner: Prof. Peter W.H. Holland, University of Oxford; internal examiner: Dr. Remo Sanges.
- 18/02/2014 **Master degree in “Biology” – final mark 110/110 cum laude**
Università degli Studi di Napoli “Federico II” (Naples, Italy)
- 15/12/2011 **Bachelor degree in “General and Applied Biology” - final mark 110/110 cum laude**
Università degli Studi di Napoli “Federico II” (Naples, Italy)
- 08/07/2008 **High School Diploma at Second Level College of Science**
Second Level College of Science “Cristoforo Colombo” (Marigliano, Naples, Italy)

**RESEARCH
EXPERIENCE**

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- 01/05/2021 - nowadays **Post-doc fellow, contract number: 5/2021**
Dr. Maria Ina Arnone’s laboratory, Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn (Naples, Italy).
Project title:
“Correlation of gene expression studies by *in situ* hybridization with ultrastructural analysis in marine organisms”

- 16/10/2019 – 30/04/2021 **Post-doc fellow, contract number: 23/2019**
Dr. Maria Ina Amone's laboratory, Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn (Naples, Italy).
Project title:
"Studying sea urchin dermal photoreception to unravel principles of decentralized spherical vision"
- 24/02/2020 - 02/03/2020 **Visiting Postdoctoral fellow, founded by Dr. Maria Ina Amone**
Dr. Vladimir Benes, Genomic Core Facility, EMBL Heidelberg (Heidelberg, Germany)
Project title:
"Molecular characterization of *Paracentrotus lividus*' visual components: a Single-Cell approach"
- 05/09/2019 - 12/09/2019 **Visiting fellow, ASSEMBLE plus project 2019, first call, contract number: 360BA0619**
Dr. Héctor Escrivà's laboratory, Observatoire Océanologique de Banyuls (Banyuls-sur-mer, France).
Project title:
"Reconstruction of the gene network downstream Nitric Oxide during amphioxus pharyngeal development"
- 01/11/2018 - 31/07/2019 **Post-doc fellow, contract number: 12/2018**
Dr. Salvatore D'Aniello's laboratory, Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn (Naples, Italy).
Project title:
"Differential transcriptomic analysis of Nitric Oxide-deprived *Branchiostoma lanceolatum* embryos"
- 04/06/2018 -19/06/2018 **Visiting fellow, ASSEMBLE plus project 2018, first call, contract number: BA010618**
Dr. Héctor Escrivà's laboratory, Observatoire Océanologique de Banyuls (Banyuls-sur-mer, France).
Project title:
"Developmental role of Nitric Oxide during amphioxus embryogenesis"
- 01/10/2014 - 23/03/2018 **PhD Student, Open University PhD program**
Dr. Salvatore D'Aniello's laboratory, Biology and Evolution of Marine Organisms, Stazione Zoologica Anton Dohrn (Naples, Italy).
Project title:
"Study of the evolutionary conserved role of Nitric Oxide (NO) in the Cephalochordate Amphioxus, *Branchiostoma lanceolatum*"
- 29/05/2017- 17/06/2017 **Visiting fellow, Travelling Fellowship by "The Company of Biologists", Reference number DEVTF-170211**
Dr. Héctor Escrivà's laboratory, Observatoire Océanologique de Banyuls (Banyuls-sur-mer. France).

Project title:

“Differential transcriptomic analysis of NO-inhibited amphioxus embryos”

27/06/2016 - 19/08/2016

Research Internship, funded by The Ministry of Science and Technology of Taiwan (MoST)

Dr. Jr-Kai Sky Yu's laboratory, Institute of Cellular and Organismic Biology (ICOB), Academia SINICA (Taipei, Taiwan).

Project title:

“Expression pattern of homeobox-containing genes in the cephalochordate amphioxus, *Branchiostoma floridae*”

01/10/2012 - 18/02/2014

Master degree Student

Prof. Marina Piscopo's laboratory, Department of Biologia Strutturale e Funzionale, Università degli Studi di Napoli “Federico II” (Naples, Italy)

Project title:

“Studies on *Mytilus galloprovincialis*' sperm chromatin structure and on the effects of heavy metals at protein and genic level”

RELEVANT LAB SKILLS

- Molecular Biology techniques
- Biochemistry techniques
- Embryo microinjection and electroporation
- CRISPR/Cas9 genome editing
- Gene expression analysis (RT-qPCR, ddPCR, RNA-seq)
- Histology and immunocytochemistry
- Confocal microscopy
- Whole-mount *in situ* hybridization
- Tissues and embryo dissection/dissociation

PUBLICATIONS

F. Caccavale[#], D. Osca[#], S. D'Aniello, F. Crocetta (2021) Molecular taxonomy confirms that the northeastern Atlantic and Mediterranean Sea harbor a single lancelet, *Branchiostoma lanceolatum* (Pallas, 1774) (Cephalochordata: Leptocardii: Branchiostomatidae). PLoS ONE 16(5): e0251358. doi: 10.1371/journal.pone.0251358.

[#]First equal authorship

M. Truchado-Garcia, **F. Caccavale**, C. Grande, S. D'Aniello (2021) Expression Pattern of Nitric Oxide Synthase during Development of the Marine Gastropod Mollusc, *Crepidula fornicata*. Genes. 12, 314. doi.org/10.3390/genes12020314.

F. Caccavale, G. Annona, L. Subirana, H. Escriva, S. Bertrand, S. D'Aniello. (2020) Crosstalk between Nitric Oxide and Retinoic Acid pathways is essential for amphioxus pharynx development. BioRxiv. Under revision in eLife.

F. Caccavale, U. Coppola, Q.A. Vassalli, C. La Vecchia, A. Palumbo, E. D'Aniello,

A. Locascio, F. Ristoratore, S. D'Aniello. Transphyletic conservation of Nitric oxide synthases regulation in cephalochordates and tunicates. *Dev genes evol.*

G. Lettieri, V. Mollo, A. Ambrosino, **F. Caccavale**, J. Troisi, F. Febbraio, M. Piscopo. (2019). Molecular effects of copper on *Mytilus galloprovincialis* reproductive system. *Mol Reprod Dev.* 15.

U. Coppola#, **F. Caccavale**#, M. Scelzo, F. Ristoratore, S. D'Aniello. (2018). Ran GTPase is an eukaryotic gene novelty involved in amphioxus mitosis. *Plos one*, 13(10): e0196930.

#First equal authorship

G. Annona, **F. Caccavale**, J. Pascual-Anaya, S. Kuratani, P. De Luca, A. Palumbo and S. D'Aniello. (2017). Nitric Oxide regulates mouth development in amphioxus. *Scientific Reports*, 7: 8432.

Q.A. Vassalli#, **F. Caccavale**#, S. Avagnano, A. Murolo, G. Guerriero, L. Fucci, J. Ausió, M. Piscopo. (2015). New insights into protamine-like component organization in *Mytilus galloprovincialis* sperm chromatin. *DNA Cell Biol.* 34(3):162-9.

#First equal authorship

CONFERENCES AND SYMPOSIA

- 2020** **EvoIMar2020, Marine Evolution 1st Italian Congress, online**
Poster: Nitric Oxide and Retinoic Acid pathways crosstalk during amphioxus development
F. Caccavale*, G. Annona, L. Subirana, H. Escriva, S. Bertrand, S. D'Aniello
 * presenting author
- 2019** **3rd International Symposium on the Advances in Marine Mussel Research, Palazzo Grassi, Chioggia (ITALY)**
Oral presentation: Contribution to the study of molecular effects of copper on *Mytilus galloprovincialis* during reproductive period
 M. Piscopo, G. Lettieri, V. Mollo, A. Ambrosino, **F. Caccavale**, J. Troisi, F. Febbraio
- 2018** **7th Euro Evo-Devo, Galway, (IRELAND)**
Oral presentation during the amphioxus satellite meeting
 Title: Further characterization of the DiMesencephalic primordium in amphioxus: are there any deeper subdivisions?
Poster: Further characterization of the DiMesencephalic primordium in amphioxus: are there any deeper subdivisions?
F. Caccavale*, L.W. Yong, J.K. Yu, S. D'Aniello.
 *presenting author

2014 **XIII Congress of the Italian Federation of Life Sciences (FISV) - Pisa, Tuscany (ITALY)**

Poster: New insights into protamine-like component organization in *Mytilus galloprovincialis* sperm chromatin

F. Caccavale, Q.A. Vassalli, F. Pollice, S. Avagnano, G. Speranza, D. Drongitis, G. Guerriero, L. Fucci, J. Ausió, M. Piscopo.

Poster: Cadmium effects on protamine-like and on DNA oxidative damage in *Mytilus galloprovincialis*

F. Caccavale, F. Pollice, G. Speranza, S. Avagnano, D. Drongitis, G. Guerriero, L. Fucci, M. Piscopo

Poster: Antibacterial, antifungal and antitumor activity of *Mytilus galloprovincialis*' protamine-like

A. Basile, M. Turano, A. Murolo, **F. Caccavale**, F. Pollice, G. Speranza, S. Avagnano, D. Drongitis, E. Notomista, L. Fucci, J. Ausió, M. Piscopo.

Poster: Effects of copper and nickel on protamine-like and on DNA oxidative damage in *Mytilus galloprovincialis*

F. Caccavale*, F. Pollice, M. Restaino, G. Speranza, S. Avagnano, D. Drongitis, G. Guerriero, L. Fucci, J. Ausió, M. Piscopo.

*presenting author

6 th Bilateral Seminar Italy-Japan – Palermo, Sicily (ITALY)

Poster: Studies on heavy metals effects on *Mytilus galloprovincialis*' sperm chromatin proteins and on DNA

M. Piscopo, F. Caccavale, F. Pollice, G. Speranza, S. Avagnano, D. Drongitis, G. Guerriero, L. Fucci, J. Ausió.

FELLOWSHIPS AND AWARDS

- “Alberto Monroy Award” from Fondazione Alberto Monroy, Department of Cellular Biology and Development, University of Palermo (Italy) (12/03/2019).
- EuroMarine 2019 Individual Fellowship (15/05/2019).
- Travelling Award “The Company of Biologists, Development Journal” (Reference number DEVTF-170211, 03/04/2017).
- 2016 Summer program in Taiwan for italian graduate students.

COURSE ATTENDANCE

02/06/2019 – 15/07/2019 **MBL Embryology Course: Concepts & Techniques in Modern Developmental Biology.** Marine Biological Laboratory in Woods Hole, Massachusetts (USA).

06/03/2017 - 18/03/2017 **Schmid Training Course 2017: Established and Emerging Organisms for**

Marine Science. Marine Biological Station in Roscoff, Brittany (FR).

SCIENCE COMMUNICATION

Scientific Divulgator - 33° edition of Futuro Remoto. 21 - 24 November 2019 – Città della Scienza – Naples (IT).

Scientific Divulgator - 9° edition of Slow Fish, il mare: bene comune. 9 - 12 May 2019 – Porto Antico – Genova (IT).

Scientific Divulgator - 32° edition of Futuro Remoto. 8 - 11 November 2018 – Città della Scienza – Naples (IT).

Scientific Divulgator - 30° edition of Futuro Remoto. 7 - 10 October 2016 – Piazza Plebiscito – Naples (IT).

OTHERS

Delegate of Post-docs and students at the “Biology and Evolution of Marine Organisms Department Council” (SZN, Naples, Italy).

Member of the “OYSTER” (Orienting Young ScienTists of EuromaRine).