

CURRICULUM VITAE

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Personal information

- Name: Carmelo Fruciano
- Nationality: Italian
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Education

- 2010: PhD in Evolutionary Biology, University of Catania (Italy)
- 2006-2009: PhD student in Evolutionary Biology, University of Catania (Catania, Italy) [Advisor: Venera Ferrito]
- 2006: Summa cum laude degree (equivalent to a combined BSc/MSc) in Scienze Naturali (Natural Sciences) at the University of Catania (Catania, Italy).

Positions held

- September 2020-current: Researcher. Italian National Research Council (CNR); IRBIM (Messina, Italy)
- January 2020-August 2020: Lecturer. University of Portsmouth (Portsmouth, United Kingdom)
- February 2018-January 2020: Postdoc. École Normale Supérieure (Paris, France). [Principal Investigator: Helene Morlon]
- September 2015-November 2017: Postdoctoral fellow. Queensland University of Technology (Brisbane, Australia), School of Earth, Environmental and Biological Sciences [Principal Investigator: Matthew Phillips]
- March 2013-February 2015: Marie Curie IEF Fellow. University of Konstanz (Konstanz, Germany), Department of Biology [Principal Investigator: Axel Meyer]
- December 2012-February 2013: Post-doc. University of Konstanz (Konstanz, Germany), Department of Biology [Principal Investigator: Axel Meyer]
- July-November 2012: DAAD Postdoctoral Fellow. University of Konstanz (Konstanz, Germany), Department of Biology [Supervisor: Axel Meyer]
- July-August 2012: Post-doctoral contract, University of Catania [Principal Investigator: Venera Ferrito]
- September 2011-June 2012: Post-doc. University of Konstanz (Konstanz, Germany), Department of Biology [Principal Investigator: Axel Meyer]
- 2010: Post-doctoral contract, University of Catania [Principal Investigator: Venera Ferrito]
- September-October 2009: Tutor (teaching assistant) in Comparative Anatomy, University of Catania.
- 2007: Research Assistant. Stony Brook University (Stony Brook, NY, USA), Department of Ecology and Evolution [Advisor: F.J. Rohlf]

Other qualifications

- 2020: Habilitation to the rank of Full Professor in Italy for discipline 05/B1 (Zoology and Anthropology)
- 2018: Habilitation to the rank of Professor Lector in Catalunya
- 2017: Habilitation to the rank of Associate Professor in Italy for discipline 05/B2 (Comparative Anatomy and Cytology)
- 2017: Habilitation to the rank of Associate Professor in Italy for discipline 05/B1 (Zoology and Anthropology)
- 2017: Qualification (habilitation) for the position of “Maître de conférences” (Assistant Professor) in France for Section 67 (Population biology and ecology)
- 2017: Qualification (habilitation) for the position of “Maître de conférences” (Assistant Professor) in France for Section 68 (Organismal biology)

General bibliometric indicators

- 35 publications in ISI journals
- >1100 total citations
- H-index 20
- i10-index 27

Editorial board memberships

- Journal of Evolutionary Biology (2019-2021; guest editor for the special issue “Genetics and Genomics of Adaptation”)
- Zoomorphology (2015-2020, Editorial Board member; 2020- Subject Editor for Morphometrics)
- BMC Bioinformatics
- BMC Ecology and Evolution
- Evolutionary Journal of the Linnean Society (in launch)
- Frontiers in Marine Science
- Frontiers in Ecology and Evolution

Prizes and awards

2013: Doctoral dissertation prize – Accademia Gioenia di Catania – for the best doctoral dissertation on the topic “Studies on the evolution of marine organisms”

Selected fellowships and grants

- 2022: ARC (Australian Research Council) Discovery Project; Partner Investigator; total amount 475 000 AU\$
- 2015: DFG (German Science Foundation) Research Grant; sole PI; total amount 292 156 euro [Declined]
- 2012: Marie Curie Intra-European Fellowship for Career Development; sole beneficiary; total amount 161 968.80 euro [March 2013-February 2015]

PhD committee membership

- 2020: Salvatore Vaiasicca. Università Politecnica delle Marche (external reviewer)
- 2019: Javier Santos Santos. University of Barcelona (committee member)

Software

Publicly available R packages

- *GeometricMorphometricsMix* (for advanced morphometrics)
- *resampleWGCNA* (for transcriptomics)

Courses and workshops (organized/held as the sole instructor)

- 04-08 April 2022: Geometric morphometrics (Physalia courses). Online.
- 12-16 April 2021: Geometric morphometrics (Physalia courses). Online.
- 30 March-3 April 2020: Geometric morphometrics (Physalia courses). Online.
- 18-22 March 2019: Geometric morphometrics (Physalia courses). Berlin.
- 05-09 March 2018: Geometric morphometrics (Physalia courses). Berlin.

Publications (in ISI journals)

* =equal contribution

- Fruciano, C., Franchini, P., Jones, J. 2021. Capturing the rapidly evolving study of adaptation. *Journal of Evolutionary Biology* 34, 856-865.
- Xiong, P., Hulsey, C. D., Fruciano, C., Wong, W.Y., Nater, A., Kautt, A.F., Simakov, O., Pippel, M., Kuraku, S., Meyer, A., Franchini, P. 2021. The Comparative Genomic Landscape of Adaptive Radiation in Crater Lake Cichlid Fishes. *Molecular Ecology* 30, 955-972
- Fruciano, C., Colangelo, P., Castiglia, R., Franchini, P. 2020. Does divergence from normal patterns of integration increase as chromosomal fusions increase in number? A test on a house mouse hybrid zone. *Current Zoology* 66, 527–538
- Pecoraro, C., Zudaire, I., Galiberti, G., Romeo, M., Murua, H., Fruciano, C., Scherer, C., Tinti, F., Diaha, N., Bodin, N., Chassot, E. 2020. When size matters: The gonads of larger female yellowfin tuna (*Thunnus albacares*) have different fatty acid profiles compared to smaller individuals. *Fisheries Research* 232, 105726
- Fruciano, C., Schmidt, D., Ramirez Sanchez, M.M., Morek, W., Avila Valle, Z.A., Talijancic, I., Pecoraro, C., Schermann, A. 2020. Tissue preservation can affect geometric morphometric analyses: a case study using fish body shape. *Zoological Journal of the Linnean Society* 188, 148-162
- Fruciano, C., Meyer, A., Franchini, P. 2019. Divergent allometric trajectories in gene expression and coexpression produce species differences in sympatrically speciating Midas cichlid fish. *Genome Biology and Evolution* 11, 1644-1657
- Franchini, P.*, Xiong, P.*, Fruciano, C., Schneider, R., Woltering, J. Meyer, A. 2019. MicroRNA gene regulation in extremely young and parallel adaptive radiations of crater lake cichlid fish. *Molecular Biology and Evolution* 36(11), 2498-2511
- Celik, M., Dodt, W., Cascini, M., Haouchar, D., Evans, A.R., Bunce, M., Fruciano, C., Phillips, M.J. 2019. A molecular and morphometric assessment of the systematics of the *Macropus* complex clarifies the tempo and mode of kangaroo evolution. *Zoological Journal of the Linnean Society* 186, 793-812.
- Phillips, M.J., Fruciano, C. 2018. The soft explosive model of placental mammal evolution. *BMC Evolutionary Biology* 18, 104
- Raffini, F.*, Fruciano, C.*, Meyer, A. 2018. Morphological and genetic correlates in the left-right asymmetric scale-eating cichlid fish of Lake Tanganyika. *Biological Journal of the Linnean Society* 124(1), 67-84.
- Chiozzi, G., Stiasny, M.L.J., De Marchi, G., Lamboj, A., Fasola, M., Fruciano, C. 2018. A diversified kettle of fish: phenotypic variation in the endemic cichlid genus *Danakilia* of the Danakil Depression of northeastern Africa. *Biological Journal of the Linnean Society* 124(4), 690-705
- Jones, J.C., Fruciano, C., Marchant, J., Hildebrand, F., Bork, P., Engel, P., Hughes, W.O.H. 2018. The gut microbiome is associated with behavioural task in honey bees. *Insectes Sociaux* 65(3), 419-429. [This paper has been covered by a perspective by Breed (2018 – *Insectes Sociaux* 65, 357-358)]
- Raffini, F., Fruciano, C., Meyer, A. 2018. Gene(s) and individual feeding behavior: exploring eco-evolutionary dynamics underlying left-right asymmetry in the scale-eating cichlid fish *Perissodus microlepis*. *Ecology and Evolution* 8(11), 5495-5507.
- Marcy, A. Fruciano, C. Phillips, M., Mardon, K., Weisbecker, V. 2018. Low resolution scans can provide a sufficiently accurate, cost- and time-effective alternative to high resolution scans for 3D shape analyses. *PeerJ* 6:e5032
- Jones, J.C., Fruciano, C., Hildebrand, F., Al Toufalia, H., Balfour, N., Bork, P., Engel, P., Ratnieks, F., Hughes, W.O.H. 2018. Gut bacterial community composition is associated with environmental exposure in honey bees. *Ecology and Evolution* 8(1), 441-451.
- Fruciano, C., Celik, M.A., Butler, K., Dooley, T., Weisbecker, V., Phillips, M.J. 2017.

Sharing is caring? Measurement error and the issues arising from sharing 3D morphometric datasets. *Ecology and Evolution* 7, 7034-7046.

- Raffini, F., Fruciano, C., Franchini, P., Meyer, A. 2017. Towards understanding the genetic basis of mouth asymmetry in the scale-eating cichlid *Perissodus microlepis*. *Molecular Ecology* 26(1), 77-91. [Best Student Paper Award – Max Planck IMPRS]
- Pappalardo, A.M., Francisco, S.M., Fruciano, C., Lima, C.S., Pulvirenti, V., Tigano, C., Robalo, J.I., Ferrito, V. 2017. Phylogeographic pattern and glacial refugia of the Rusty blenny (*Parablennius sanguinolentus*, Blenniidae). *Hydrobiologia* 802, 141-154.
- Ferrante, M., Pappalardo, A.M., Pulvirenti, V., Ferrito, V., Fruciano, C., Grasso, A., Sciacca, S., Tigano, C., Copat, C. 2017. Bioaccumulation of metals in *Parablennius sanguinolentus* (Pallas, 1814) sampled along Italian coast and biomarker of environmental stress. *Marine Pollution Bulletin* 122, 288-296
- Fruciano, C.*, Franchini, P.*, Kovacova, V., Elmer, K., Henning, F., Meyer, A. 2016. Genetic linkage of distinct adaptive traits in sympatrically speciating crater lake cichlid fish. *Nature Communications* 7, 12736
- Fruciano, C., Franchini, P., Raffini, F., Fan, S., Meyer, A. 2016. Are sympatrically speciating Midas cichlid fish special? Patterns of morphological and genetic variation in the closely related species *Archocentrus centrarchus*. *Ecology and Evolution* 6(12),4102-4114
- Fruciano, C. 2016. Measurement error in geometric morphometrics. *Development Genes and Evolution* 226(3), 139-158. doi: 10.1007/s00427-016-0537-4
- Jones, J.C., Fruciano, C., Keller, A., Scharl, M., Meyer, A. 2016. Evolution of the elaborate male intromittent organ of *Xiphophorus* fishes. *Ecology and Evolution* 6, 7207-7220.
- Franchini, P., Xiong, P., Fruciano, C., Meyer, A. 2016. The role of microRNAs in the repeated parallel diversification of lineages of Midas cichlid fish from Nicaragua. *Genome Biology and Evolution* 8(5), 1543-1555.
- Franchini, P., Colangelo, P., Meyer, A., Fruciano, C. 2016. Chromosomal rearrangements, phenotypic variation and modularity: a case study from a contact zone between house mouse Robertsonian races in Central Italy. *Ecology and Evolution* 6(5), 1353-1362 doi: 10.1002/ece3.1912
- Schmieder, D.A., Borissov, I.M., Benitez, H.A., Fruciano, C. 2015. Bat species comparisons based on external morphology: a test of traditional versus geometric morphometric approaches. *PLoS One* 10, e0127043.
- Fruciano, C., Pappalardo, A.M., Tigano, C., Ferrito, V. 2014. Phylogeographic relationships of Sicilian brown trout and the effects of genetic introgression on morphospace occupation. *Biological Journal of the Linnean Society* 112, 387–398.
- Franchini, P.*, Fruciano, C.*, Frickey, T., Jones, J.C., Meyer, A. 2014. The gut microbial community of Midas cichlid fish in repeatedly evolved limnetic-benthic species pairs. *PLoS ONE* 9, e95027.
- Franchini, P.*, Fruciano, C.*, Spreitzer, M.L., Jones, J.C., Elmer, K., Henning, F., Meyer, A. 2014. Genomic architecture of ecologically divergent body shape in a pair of sympatric crater lake cichlid fishes. *Molecular Ecology* 23, 1828–1845. [This paper has been covered by a perspective by Rogers & Jamniczky (2014 – *Molecular Ecology* 23, 1650-1652)]
- Gunter, H., Xiong, F., Fan, S., Franchini, P., Fruciano, C., Meyer, A. 2013. Shaping development through mechanical strain: the transcriptional basis of diet-induced phenotypic plasticity in a cichlid fish. *Molecular Ecology* 22, 4516-4531. [This paper has been covered by a perspective by Young (2013 – *Molecular Ecology* 22, 4363-4365)]
- Fruciano, C., Franchini, P., Meyer, A. 2013. Resampling-based approaches to study

variation in morphological modularity. *PLoS ONE* 8(7), e69376.

- Fruciano, C., Tigano, C., Ferrito, V. 2012. Body shape variation and colour change during growth in a protogynous fish. *Environmental Biology of Fishes* 94(4), 615-622.
- Fruciano, C., Tigano, C., Ferrito, V. 2011. Geographic and morphological variation within and between colour phases in *Coris julis* (L. 1758), a protogynous marine fish *Biological Journal of the Linnean Society* 104, 148-162.
- Fruciano, C., Hanel, R., Debes, P.V., Tigano, C., Ferrito, V. 2011. Atlantic-Mediterranean and within-Mediterranean molecular variation in *Coris julis* (L. 1758) (Teleostei, Labridae) *Marine Biology* 158(6), 1271-1286.
- Fruciano, C., Tigano, C., Ferrito, V. 2011. Traditional and geometric morphometrics detect morphological variation of lower pharyngeal jaw in *Coris julis* (Teleostei, Labridae) *Italian Journal of Zoology* 78(3), 320-327.
- Ferrito, V., Pappalardo, A.M., Fruciano, C., Tigano, C. 2009. Morphology of scale lepidonts in the genus *Aphanius* (Teleostei, Cyprinodontidae) using SEM. *Italian Journal of Zoology* 76(2), 173-178.