

## CURRICULUM VITAE

### MARCO TRIZZINO, PhD

Current position (2022-present): **Senior Lecturer** (Associate Professor), Department of Life Sciences, Division of Cell and Developmental Biology, **Imperial College London**, UK

Previous positions (2019-2022): **Assistant Professor**, Department of Biochemistry and Molecular Biology, and Farber Institute for Neuroscience, **Thomas Jefferson University**, Philadelphia, PA

E-mail: marco.trizzino83@gmail.com

Phone: +1 484-598-3902

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### EDUCATION

PhD        *Sapienza* University, Rome, Dept. of Biology and Biotechnology, 2011  
M. Sc     *Sapienza* University, Rome, Evolutionary Biology, 2007 (cum laude)  
B. Sc     *Bicocca* University, Milan, Biological Sciences, 2005

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### POSTDOCTORAL TRAINING

2016 – 2019: Postdoctoral fellow, Department of Gene Expression and Regulation, **The Wistar Institute**, Cancer Center affiliated to the University of Pennsylvania, Philadelphia, PA.

2014 – 2016: Postdoctoral fellow at **University of Pennsylvania**, Department of Genetics, Perelman School of Medicine, Philadelphia.

2012 – 2013: Teaching Faculty at *Insubria* University of Varese, Italy, and Assistant Project Manager, *Istituto Oikos* ONG, Milan, Italy

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### GRANT SUPPORT

#### Current Funding

- Alzheimer's Association – New to the Field Grant (P.I.): “Mechanisms regulating chromatin relaxation in Alzheimer's Disease”. 10/01/2022-09/30/2025. Direct costs: **\$136,000**. Total budget including indirect costs: **\$150,000**.

- R35-MIRA, NIH NIGMS (P.I.): “Mechanisms of gene regulation mediated by SVA transposons”. 07/01/2020-06/30/2025. Direct costs: **\$1,250,000**. Total budget including indirect costs: **\$1,950,000**.

- G. Harold and Leila Y Mathers Foundation (P.I.): “The ARID1A/ARID1B crosstalk as a central regulator of neural and craniofacial development”. 03/01/2020-02/28/2023. Direct costs: **\$750,000**. Total budget including indirect costs: **\$825,000**.

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### TEACHING EXPERIENCE

Spring 2022: Advanced topics in Genome Regulation and Organization (Course director).

Spring 2021: Current Literature in Biochemistry and Molecular Pharmacology. Course focused on Evolutionary Medicine (BI-725. Course director)

Spring 2021 and 2022: Genetic Information Transfer (BI-525. Invited Guest Lecturer)

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2012 – 2013: Teaching Faculty at *Insubria* University, Varese, Italy (Organismal Biology, laboratories).

2007 – 2011: Teaching Assistant at *Sapienza* University, Rome (Anatomy, Physiology, General Biology)

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### COMMUNITY SERVICE

**Grant Reviewer:** MRC Medical Research Council, UK

**Invited (permanent) member of the Editorial Board:** Physiological Genomics

**Topic Editor:** *Frontiers in Ecology and Evolutionary Biology* (Special Issue on Transposable Elements and Gene Regulation).

**Reviewer for:** *Physiological Genomics*, *Genome Biology*, *Genome Research*, *eLife*, *Nature Communications*, *Life Science Alliance*, *Cell Reports*, *Genome Biology and Evolution*, *Molecular Biology and Evolution*, *Molecular Cancer Research*, *Proceedings of the Royal Society B*, *Biological Control*, *Health Science Reports*, *Zootaxa*, *Molecular Phylogenetics and Evolution*, *European Journal of Zoology*.

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### ACADEMIC SERVICE

#### Academic Committees at Thomas Jefferson University

2021-present: BMP Program Committee

2021-present: BMB Department Education Committee

2019-present: College of Life Sciences, BMP PhD student admissions committee.

2020: Search Committee for recruitment of a new Faculty member in the Department of Biochemistry and Molecular Biology.

2021-present: Graduate committee for Mason Tracewell

2021-present: Graduate committee for Signe Caksa

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### INVITED ACADEMIC TALKS (Last five years)

- 2016: Cornell University, Department of Ecology and Evolution
- 2017: Sapienza University, Rome, Italy
- 2018: Kent University, Biosciences Department, Canterbury UK
- 2018: University of Edinburgh, Patrick Wild Centre, UK
- 2018: York University, Department of Biology, UK
- 2018: Cardiff University, Biosciences Department, UK
- 2019: Wayne State University, Detroit, MI
- 2021: The Fragile Nucleosome (international seminar series on chromatin biology). (streamed on YouTube, audience of ~1,500 people)

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- 2021: The University of Oregon Medical School - 2021: Insubria University, Varese, Italy - 2021: State University of New York, Albany (virtual)
  - 2021: "Development presents" seminar series organized by the Journal "Development" (virtual; host Dr. James Wells).
  - 2022: Oxford University, Department of Physiology, Anatomy and Genetics (virtual, host Dr. David Paterson)
  - 2022: Drexel University, Department of Biology (virtual)
  - 2022: Indiana University, Department of Biology (in person)
  - 2022: Cell and Experimental Biology (Boston, MA) – **invited speaker**
  - 2022: FASEB Transposable Element Meeting (Dublin, Ireland) – **invited speaker**
  - 2022: European Evo/Devo meeting (Naples, Italy) – **invited speaker**
  - 2022: Cincinnati Children's Hospital, Division of Developmental Biology
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### **PUBLICATIONS (\* = Co-First Author)**

#### **Publications as Principal Investigator**

- S. Patoori, S. Barnada, C. Large, J. Murray and **M. Trizzino**, 2022. Young transposable elements rewired gene regulatory networks in human and chimpanzee hippocampal intermediate progenitors. *Development*. *Biorxiv* preprint: <https://doi.org/10.1101/2021.11.24.469877>.
- S. Barnada, A. Isopi, D. Tejada-Martinez, C. Goubert, S. Patoori, L. Pagliaroli, M. Tracewell and **M. Trizzino**, 2022. Genomic features underlie the co-option of SVA transposons as cis-regulatory elements in human pluripotent stem cells. *PLOS Genetics* 18(6): e1010225.
- D. Tejada-Martinez, R. Avelar, I. Lopes, B. Zhang, G. Novoa, GP De Magalhaes, and **M. Trizzino**, 2022. Positive selection and enhancer evolution shaped lifespan and body mass in great apes. *Molecular Biology and Evolution* 39(2): msab369.
- L. Pagliaroli, P. Porazzi, A. Curtis, C. Scopa, H.M.M. Mikkers, C. Freund, L. Daxinger, S. Deliard, S.A. Welsh, S. Offley, C. Ott, B. Calabretta, S.A. Brugmann, G.W.E. Santen and **M. Trizzino**, 2021. Inability to switch from ARID1A-BAF to ARID1B-BAF impairs exit from pluripotency and commitment towards neural crest formation in ARID1B-related neurodevelopmental disorders. *Nature Communications*, 12(6469): 1–16.
- L. Pagliaroli and **M. Trizzino**, 2021. The Evolutionary Conserved SWI/SNF Subunits ARID1A and ARID1B Are Key Modulators of Pluripotency and Cell-Fate Determination. *Frontiers in Cell and Developmental Biology*, 9: 643361.

#### **Postdoc Publications**

- **M. Trizzino**, A. Zucco, S. Deliard, F. Wang, E. Barbieri, F. Veglia, D. Gabrilovich, and A. Gardini, 2021. EGR1 is a gatekeeper of inflammatory enhancers in human macrophages. *Science Advances*, 7(3): eaaz8836.
- M. Caliskan, E. Manduchi, H. Rao, J.A. Segert, M. H. Beltrame, **M. Trizzino**, Y. Park, S.W. Baker, A. Chesi, M.E. Johnson, K.M. Hodge, M.E. Leonard, B. Loza, D. Xin, A.M. Berrido, N.J. Hand, R.C. Bauer, A.D. Wells, K.M. Olthoff, A. Shaked, D.J. Rader, S.F.A. Grant, C.D. Brown, 2019. Genetic and epigenetic fine mapping of complex trait associated loci in the human Liver. *American Journal of Human Genetics* 105(1): 89-107.
- A. Carrer, S. Trefely, S. Zhao, S. Campbell, R.J. Norgard, K.C. Schultz, S. Sidoli, J.L.D. Parris, H.C. Affronti, S. Sivanand, S. Egolf, Y. Sela, **M. Trizzino**, A. Gardini, B. A. Garcia, N.W Snyder, B. Z.

Stanger and K. Wellen, 2019. Acetyl-CoA metabolism supports multi-step pancreatic tumorigenesis. *Cancer Discovery* 9(3):416-435

- **M. Trizzino**, E. Barbieri, A. Petracovici, S. Wu, S. Welsh, T. Owens, R. Zhang and A. Gardini, 2018. The tumor suppressor ARID1A controls global transcription via pausing of RNA Polymerase II. *Cell Reports*, 23: 3933–3945. **Recommended by F1000.**
- **M. Trizzino**, A. Kapusta, and C.D. Brown, 2018. Transposable elements generate regulatory novelty in a tissue specific fashion. *BMC Genomics*, 19:468.
- E. Barbieri\*, **M. Trizzino\***, S.A. Welsh, T. Owens, B. Calabretta, M. Carrol, K. Sarma and A. Gardini, 2018. Targeted enhancer activation by a subunit of the Integrator complex. *Molecular Cell*, 71: 1–14. **\*co-first author.**
- S. Wu, N. Fatkhutdinov, T. Fukumoto, B. Bitler, PH Park, A.V. Kossenkov, **M. Trizzino**, A. Gardini, D.W. Speicher, R. Zhang, 2018. Catalytic subunits switch drives resistance to EZH2 inhibitors in ARID1A-mutated cells. *Nature Communications*, 9: 4116.
- **M. Trizzino\***, Y. Park\*, M. Holsbach-Beltrame, K. Aracena, K. Mika, M. Caliskan G. Perry, V. Lynch and C.D. Brown, 2017. Transposable elements are the primary source of novelty in primate gene regulation. *Genome Research*, 27:1623–1633.

#### Key publications from PhD

- S. Sabatelli, P. Audisio, G. Antonini, E. Solano, A. Martinoli and **M. Trizzino** (2016). Molecular ecology and phylogenetics of the water beetle genus *Ochthebius* revealed multiple independent shifts to marine rockpools lifestyle. *Zoologica Scripta*, 45: 175–186.
- **M. Trizzino**, F. Bisi, L. Maiorano, A. Martinoli, M. Petitta, D.G. Preatoni and P. Audisio 2015. Mapping biodiversity hotspots and conservation priorities for the Euro-Mediterranean headwater ecosystems, as inferred from diversity and distribution of a water beetle lineage. *Biodiversity and Conservation*, 24(1): 149–160.
- **M. Trizzino**, M. Jäch, P. Audisio, R. Alonso and I. Ribera, 2013. A molecular phylogeny of the cosmopolitan hyperdiverse genus *Hydraena* Kugelann (Coleoptera, Hydraenidae). *Systematic Entomology*, 38: 192–208.
- **M. Trizzino**, P. Audisio, G. Antonini, E. Mancini and I. Ribera, 2011. Molecular phylogeny and diversification of the "*Haenydra* lineage" (Hydraenidae, genus *Hydraena*), a North-Mediterranean endemic-rich group of rheophilic Coleoptera. *Molecular Phylogenetics and Evolution* 61: 772–783.
- **M. Trizzino**, P. Audisio, G. Antonini, A. De Biase, E. Mancini, 2009. Comparative analysis of sequence and secondary structure of the rRNA internal transcribed spacer 2 (ITS2) in pollen-beetles of the subfamily Meligethinae (Coleoptera, Nitidulidae): potential use of slippage-derived sequences in molecular systematics. *Molecular Phylogenetics and Evolution* 51: 215-226.

#### Other PhD publications

- S. Sabatelli, M. Liu, D. Badano, E. Mancini, M. Trizzino, A. R. Cline, A. Endrestøl, M. Huang, P. Audisio, 2020. Molecular phylogeny and host-plant use (Lamiaceae) of the Thymogethes pollen beetles (Coleoptera). *Zoologica Scripta* 49(1): 28-46.

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- **M. Trizzino**, F. Bisi, C. Morelli, D. Preatoni, L. A. Wauters and A. Martinoli. 2014. Spatial niche partitioning of two saproxylic sibling species (Coleoptera, Cetoniidae, genus *Gnorimus*). ***Insect Conservation and Diversity***, 7: 223–231.
  - **M. Trizzino**, L. Carnevali, S. De Felici and P. Audisio, 2013. A revision of the *Hydraena* species of the "Haenydra" lineage. ***Zootaxa*** 3607 (1): 1–173.
  - **M. Trizzino**, L. F. Valladares, J. Garrido and P. Audisio, 2012. Morphological reply to a DNA call: a new cryptic species of *Hydraena* from western Europe, with a complete overview of the *H. gracilis* complex (Coleoptera, Hydraenidae, "Haenydra" lineage). ***Journal of Natural History*** 46: 1065–1078.
  - A. De Biase, G. Antonini, E. Mancini, **M. Trizzino**, A. Cline and P. Audisio, 2012. Discordant patterns in the genetic, ecological, and morphological diversification of a recently radiated phytophagous beetle clade (Coleoptera: Nitidulidae: Meligethinae). ***Rendiconti dell'Accademia Nazionale dei Lincei***: 23(2): 207–215.
  - **M. Trizzino**, P. Audisio, M. Jäch and I. Ribera, 2011. Molecular and morphological data confirm two new species of *Hydraena* s.str. of the *H. emarginata-saga* complex (Coleoptera, Hydraenidae). ***Zootaxa*** 2760: 29–38.
  - P Audisio, H Brustel, GM Carpaneto, G Coletti, E Mancini, **M Trizzino**, G Antonini, A De Biase, 2009. Data on molecular taxonomy and genetic diversification of the European Hermit beetles, a species complex of endangered insects (Coleoptera: Scarabaeidae, Cetoniinae, Osmoderma). ***Journal of Zoological Systematics and Evolutionary Research***. 47(1): 88–95.
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## PROFESSIONAL REFERENCES

Dr. Christopher "Casey" Brown  
Department of Genetics, Perelman School of Medicine  
University of Pennsylvania  
415 Curie Blvd., Philadelphia, PA, 19104  
215-746-4049  
chrbro@penmedicine.upenn.edu

Dr. Alessandro Gardini  
Genetics and Gene Regulation program  
The Wistar Institute, Cancer Center  
3601 Spruce street, Philadelphia, PA, 19104  
215-898-3785  
agardini@wistar.org

Dr. Emiliano Mancini  
Department of Biology and Biotechnologies  
University of Rome "Sapienza"  
via A. Borelli 50, 00161, Rome  
emiliano.mancini@uniroma1.it

Dr. Vincent Lynch  
Department of Human Genetics  
SUNY Buffalo, NY  
vjlynch@buffalo.edu

Prof. Paolo Audisio  
Department of Biology & Biotechnologies  
University of Rome "Sapienza"  
via A. Borelli 50, 00161, Rome  
Phone: + 39 649918030  
paolo.audisio@uniroma1.it