CURRICULUM VITAE:

PEDRO MARTINEZ

ICREA Research Professor
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Universitat de Barcelona
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Spain

OTHER ACADEMIC AFFILIATIONS:

"Professor Associat" (Associate Professor), Departament de Genètica, Universitat de Barcelona (2003-)

Member "Institut Recerca de la Biodiversitat" (IRBio) -Institute of Biodiversity Resarch

Coordinator Doctoral Program "Genetics", Univeristat de Barcelona (2013-2017)

DATE OF BIRTH: 13 August 1960. Figueres (Girona). Spain.

NATIONALITY: Spanish.

LANGUAGES: Spanish and Catalan (mother tongues). English (fluent).

RESEARCH INTERESTS

Broad interest in the comparative analysis of development in different animal systems. Evolution of developmental mechanisms. Evolution of genomes and gene regulatory systems. Gene profiling during development. Pattern formation. Evolution of the Nervous System.

EDUCATION:

PhD. (cum laude), Molecular Biology — October 1990
Universitat Autonoma de Barcelona (SPAIN)
Thesis Title: Studies on the histone H1^{o} gene expression.

Advisor: Dr. Pedro Suau

M.S., Chemistry (Biochemistry and Molecular Biology) June 1983
Universitat Autonoma Barcelona (SPAIN)
M.S. Thesis Title: Accumulation of the histone H1º
in neuronal and glial cells during rat cerebral cortex
development.

B.S., Chemistry (Biochemistry and Molecular Biology) June 1982
Universitat Autonoma de Barcelona

RESEARCH EXPERIENCE

ICREA Research Professor September 2003- current
Departament de Genètica
Universitat de Barcelona, SPAIN

Characterization of patterning genes in acoelomic worms. The origin of bilaterian animals. The origins of neural architectures.

Characterizing patterning genes in echinoderms during development and regeneration. Evolution of Gene Regulatory Networks.

Associated Professor (Førsteamanuensis) January 2000-2003
Department of Anatomy and Cell Biology
University of Bergen, NORWAY

Characterizing patterning genes in echinoderms during development and regeneration. Hox and ParaHox cluster evolution. Evolution of the genomes.

Studying the evolution of regulatory systems by large-scale sequencing of HOX-genomic regions in different animals.
Gene expression during regeneration of ophiuroid arms. Focus on the nervous system.

Senior Research Fellow (with Dr. Carlos Martinez Alonso) September 1997-1999
Department of Immunology and Oncology
Centro Nacional de Biotecnologia, Madrid, SPAIN

Characterized a new gene, DIDO-1, involved in apoptosis, both in mice and humans. Role in morphogenesis.
Implementation of large-scale expression methodologies (SAGE).

Senior Research Fellow (with Dr. Eric Davidson) 1993-1997
Division of Biology, California Institute of Technology, Pasadena, CA.
Member of the "Stowers Institute"

Characterised the expression patterns of homeobox-containing genes in the sea urchin *S. purpuratus* using RNase protection and whole-mount in situ hybridisation. Relevance for the origin of the pentameral symetry in echinoderms.

Mapped eight genes belonging to de HOX class in a single cluster of 400 kb for the first time in echinoderms. Demonstrated that the arrangement corresponds to the prediction based on comparative analysis of *Drosophila* and vertebrate clusters.

Research Fellow (with Dr. Eric Davidson) 1990-1993
Division of Biology, California Institute of Technology, Pasadena, CA.

Cloned and characterised ten homeobox-containing genes in sea urchins belonging to the major classes: HOX, *engrailed* and *paired*.

Characterised the promoter sequences of an endoderm-specific gene in *S. purpuratus*.

Characterised the transcriptional unit of an endodermal-specific gene in the sea urchin *S. purpuratus*.

PhD. Thesis research (collaboration with Dr. Carmie Puckett and Dr. Leroy Hood´ laboratories). Division of Biology, California Institute of Technology. Pasadena, CA. 1990

Studied the expression of the histone H1^{o} in rat PC12 cells. Regulation by NGF.

Detection of Thyroid receptor binding sites in promoter of H1^{o}. (wirh Dr. K. Umesono and Prof. R. Evans at Salk Institute)

PhD. Thesis research (with Dr. Pedro Suau) 1983-1990
Department of Biochemistry and Molecular Biology. Universitat Autonoma Barcelona.

Cloned and characterised the rat gene for histone H1^{o} (terminal differentiation marker in neurones). Expression in rat and mice cerebral cortex.

Studied the hormonal regulation of H1^{o} gene expression in rat brain.

Studied the expression of histone H1^{o} gene in mouse brain using transgenic models. Transcriptional versus post-transcriptional regulation.

M.S. Thesis research (with Dr. Pedro Suau) 1982-1983

Followed kinetics of histone H1º (protein) accumulation during neuronal differentiation in rat cerebral cortex. Evidence that it is a terminal differentiation marker.

Obtained specific antibodies against histone H1º that allow to recognise inmunocytochemicaly this protein in brain slices.

TECHNICAL SKILLS

Manipulation of big fragments of DNA. Construction of genomic libraries in PAC and BAC vectors. Pulsed-field electrophoresis. Arraying technologies. Large-scale sequencing.

Methods for *in situ* detection of expressed messages in sea urchin and acoel flatworm embryos.

Protein analysis. 2-D Gel electrophoresis

Immunological methods. ELISA. Western Blot. Immunohistochemistry.

Genomic and transcriptomic analysis.

High throughput TEM and image processing methodologies

TEACHING EXPERIENCE

-Universitat de Barcelona. Facultat Biologia. 2021

Teacher Practical Course on Invertebrate Embryology

-University of Fribourg (Department of Biology) 2018, 2019, 2020, 2021

Teacher (Chargé de Cours) of Master's Course on :
"Gene Regulatory Networks"

-Universitat de Barcelona. Departament de Genètica. 2013-

Coordinator Master's course: "Evolució de la Regulació Gènica i Xarxes Reguladores" (Evolution of Gene Regulation and Gene Regulatory Networks)

-Universitat de Barcelona. Departament de Genètica. 2006-2009

Coordinator Graduate courses: "Seminaris Recerca en Genètica" and "Sistemes model en Evo-Devo"

-University of Bergen. Faculty of Medicine. 2000-2003

Teacher of the undergraduate course "Cell Biology"
Teaching Assistance of the undergraduate course "Histology"

-Marine Biological Station, Roscoff (France) 2000, 2001

Teacher at the European Course "Evolutionary Developmental Biology"

-California Institute of Technology. 1991-1994.

Supervised the research project of four undergraduate students (Flora Ho, Yu Chen, Jason Lee and Pinky Mehta).

-Department of Biochemistry and Molecular Biology. Universitat Autonoma de Barcelona. 1988

Gave a course on Genetic Engineering organised by the European Union to graduate students.

PROFESSIONAL TALKS

-Gave several invited talks at professional meetings both in Europe and USA.

-Invited speaker in several Universities and research institutions:
University California Santa Barbara, Rutgers University, Scripps Institution of Oceanography, Max Planck Institute of Molecular Genetics, Oceanographic Institution at Villefrache sur mer, Universitat de Barcelona, Stazione Zoologica Napoli, Station Biologique Roscoff, University of California at San Diego, Biozentrum University of Basel, Janelia Farm (Howard Hughes Medical Institute), University Fribourg, University of Vienna, Middle Eastern University (Ankara), etc...

PRACTICAL COURSES TAKEN

EMBO Practical Course December 1999
"Genome Sequencing and Differential Gene Expression Analysis"

Marine Biological Laboratory (Woods Hole) Especial Course October 2010
"Gene Regulatory Networks"

ONLINE CERTIFIED COURSES TAKEN

Fundamentals of Neuroscience (HarvardX - MCB80.3x)	2020
Phylosophy of Science for Engineers and Scientists (KTHx - PHSC01.1x)	2020
Minds and Machines (Phylosophy of Mind) (MITx)	2021
The Einstein Revolution (HarvardX-EMC2x)	2021
Evolution for Teachers (Coursera-AMNH)	2021
The Origin of Life (Santa Fe Institute)	2022
AI for Everyone: Master the Basics (IBM)	2023

STUDENTS AND FELLOWS

Postdoctoral Fellows

Johannes Achatz (from Univeristy of Innsbruck)	2010-2012
Marta Chiodin (from Universitat de Barcelona)	2014

Master Students

Irene Martin, Depart. Genetics, University Barcelona	2003-2004
Elena Perea, Depart. Genetics, University Barcelona	2010-2011
Brenda Gavilán, Depart. Genetics, University Barcelona	2013-2014
Camila Fernández, Depart. Genetics, University Barcelona	2016-2017
Sergio Melero, Depart. Genetics, University Barcelona	2019-2020

PhD Students

Eduardo Moreno, Depart. Genetics, University Barcelona	2005-2010
Amandine Bery, Depart. Genetics, University Barcelona	2006-2009
Andreas Altenburger, Depart. Genetics, University Barcelona (co-directed with Andreas Wanninger, University Copehnagen)	2006-2010
Marta Chiodin, Depart Genetics, University Barcelona	2007-2013
Georgina Garrido, IBMB (CSIC)- Depart Genetics, Univ. Barcelona (co-directed with Dr. Anna Aragay)	2011-2014
Elena Perea, Depart Genetics, University Barcelona	2012-2017
Brenda Gavilán, Depart Genetics, University Barcelona (abandoned)	2015-2022

Internal Students (Graduation Final Experimental Project)

Estela Miralles, Depart Genetics, University Barcelona	2013
Daniel Corbacho, Depart Genetics, University Barcelona	2014
Carles Savall, Depart Genetics, University Barcelona	2015

We have several visiting students from european labs during 2008:
(Silvia Sintoni (Jena); Yu Liu (Ulm) and Henrike Semmler (Copenhagen)
In 2009 we have the visits of Andreas Altenburger (Copenhagen),
Carmen Andrikou (Patras) . In 2010 the visitors have been: Allen Kristof (Copenhagen) and Yousra Ben Khadra (Monastir, Tunisia). In 2012 we had Marianna Misiakou (Patras). In 2014 Zoi Vaitsi (Patras), Yousra Ben Khadra (Monastir, Tunisia), Jonatan Gabre (Gothenburg) and in 2022, Giulia Pria (Milano).

Thesis directed

Eduardo Moreno: " Characterization of the Hox patterning genes in acoel flatworms" (**30/06/2010**)

Amandine Bery: "A general description of the microscopic anatomy of an acoel, Symsagittifera roscoffensis: hatchlings and regenerating adults" (**29/09/2009**)

Andreas Altenburger: "Comparative neurogenesis, muscle development, and gene expression analyses in Brachiopoda" (**December, 2010**)

Marta Chiodin: "The evolution of bilaterian body-plan: perspectives from the developmental genetics of the Acoela (Acoelomorpha)" (**15/02/2013**) (International PhD title)

Georgina Garrido: "Involvement of the Microtubule-regulated RhoGEF GEF-H1 in the G12 family signaling pathways" **(16/09/2014)**

Elena Perea: "The nervous system of Xenacoelomorpha: a morphological and genomic perspective" (2017; **14/07/2017**)

Brenda Gavilán: "Molecular and Morphological approaches to the understanding of Xenacoelomorpha" (2021, unfinished)

Visiting Professors

Ana Varela Coelho (ITQB, Oeiras, Portugal)	2017
Volker Hartenstein (Department of Biology, UCLA, USA)	2018
Ildiko Somorjai (Biology, Univ. Saint Andrews)	2023-2025

GRANTS OBTAINED AS P.I.

Norwegian Research Council. 2000-2003
"Characterization of homeobox genes from echinoderms:patterning the embryo"

Norwegian Cancer Society. 2001
"Molecular Analysis of the nervous system regeneration

Meltzer Foundation, UiB 2002-2003
"A Large-Scale Analysis of mRNAs Expressed in a Regenerating Nervous System"

European Union. ARI Grant to Access Installations. 2002
"Study of Regeneration in Ophiuroids" Kristineberg Marine Station. Sweden.

Norwegian Research Council. 2002
"Establishing a national Imaging Platform"

European Union. Network of Excellence. 2003-2007
"Marine Genomics". Catherine Boyen, coordinator. France.
Acting as Section (workpackage) coordinator.

Spanish Ministerio de Ciencia y Tecnologia 2003-2006
"El origen de los animales bilaterales"

European Union. Early Training Network 2005-2008
MOLMORPH (2.5 PhD salaries)

Spanish Ministerio de Educación y Ciencia 2007-2009
"Una aproximación multigénica al estudio del origen de los animales bilaterales"

Grups Qualitat de la Generalitat de Catalunya "Evolució i Desenvolupament" 2007-

Grants to Sequencing Consortiums (GENOSCOPE, France) 2006 & 2007
(Sequencing of ESTs from P. lividus and S. roscoffensis)

Spaninsh Ministerio of Science and Innovation 2009- 2011
"Los primeros animales bilaterales: estructura del genoma y genómica funcional de filo acelos" (BFU2009-07383)

Spanish Ministerio de Economia y Competitividad 2012-2015
"Utilizando las secuencias genómicas de los acelomorfos para entender el origen de los sistemas nerviosos centralizados" BFU2012-32806.

Grups Qualitat de la Generalitat de Catalunya “Evolució i Desenvolupament” 2014-Open ended

Spanish Ministerio de Ciencia, Innovación y Universidades 2019-2022
“Una aproximación integrativa al estudio del origen evolutivo del cerebro”

EU COST Action (16203) MARISTEM 2017-2021

Spanish Ministerio de Ciencia, Innovación y Universidades “Cerebros ancestrales analizados mediante técnicas de células individualizadas” (PID2021-124415NB-I00) 2022-2025

Grups Qualitat de la Generalitat de Catalunya “Evolució i Desenvolupament” (SGR 00372 Q0818001J Universitat de Barcelona GRC EvoDevo-CAT) 2023-

Several Grants from the “Sven Lovén Internacionalization Program (Sweden) 2015-2020 (every year; **coordinator** of group of scientists visiting Kristineberg Marine Station)

PATENT APPLICATIONS

"Genes encoding for the human and murine death inducer-obliterator-1"
European Patent Application EP19990946314

Inventors: Carlos Martinez-Alonso, David Garcia-Domingo, Alf Grandien, Esther Leonardo y Pedro Martinez

Publication date: 2001

VISITING INSTITUTIONS (More than one month)

Centro de Biologia Molecular, Madrid (own resources) 1986

California Institute of Technology (Spanish fellowship) 2000

Stazione Zoologica di Napoli (EMBO Fellowship) 2002

Kristineberg Marine Station (EU-ARI Fellowship) 2002

Stazione Zoologica di Napoli (EMBO Fellowship) 2003

Kristineberg Marine Station (EU-ARI Fellowship) 2003

Kristineberg Marine Station (Wenner Gren Foundation Fellow) 2004

SARS Center for Molecular Marine Biology (ICREA)	2005
Department of Biology, University of California San Diego (EU, Molmorph). Visiting Schoolar.	2009
Kristineberg Marine Station (Visiting Professor Marine Ecology)	2011
ITQB António Xavier, Lisbon (COST-Action)	2018
Stazione Zoologica Naples (EU-ASSEMBLE PLUS GRANT)	2019
Rudjer Boskovic Institute; Center for Marine Research, Rovinj (Croatia) (EU-COST Action)	2019
University College London (GEE & CDB Departments) (EU-COST Action)	2021
Univeristà di Padova (Visiting Scientist)	2022

I visited many other institutions over these years. Those in which I spent less than a month are not listed here.

I have led, over the last few years, a team of 6 different investigators (from the same number of different countries), collecting Xenoturbella and nemertodermatids in the Gullmanfjord, with funds provided by the "Sven Lovén Internationalization Program".

CURRENT COLLABORATIONS

Dr. Maria I. Arnone. Stazione Zoologica Napoli. Italy

Dr. Leonid Moroz, University Florida, USA

Dr. Simon Sprecher, University Fribourg, Switzerland

Dr. Eugene Berezikov, University Groningen, Netherlands

Dr. Ana Varela Coelho, ITQB, Oeiras, Portugal.

Dr. Volker Hartenstein, UCLA, USA

ADMINISTRATIVE EXPERIENCE

Coordinator of the "Genetics" PhD Program at the University Barcelona (2013-2017)

Founder Member of the Spanish Assoc for the Advancement of Science, AACTE

Administered my own Grants.

Regular referee for the Grants of the Spanish “Ministerio de Ciencia y Tecnología” ANEP

Regular referee for the Grants of the US “National Science Foundation”, BBSRC (U.K.) and “Marie Curie Grants” (EU), Austrian Science Foundation, German Science Foundation, French Research Agency, etc.

Board Member International Society of Invertebrate Morphology (ISIM)

Evaluation Board at the OIST (Okinawa Institue of Science and Technology; Marine Genomics Unit), Okinawa, Japan (2019, 2020)

Universitat de Barcelona representative in the European consortium EuroMarine (2023-)

Evaluation of the “Biology of Organisms Department” (Stazione Zoologica Napoli) Grants (2023)

Evaluation of PhD Projects for funding by the Stazione Zoologica Napoli (2023)

Participation in committee CMDER-250011042 - L4-SORBONNE UNIVERSITÉ-BIOM-SVE2. Evaluation BIOM Unit, Observatoire Océanologique de Banyuls-sur-Mer (2023-2024)

Reviewer promotion to Professor at Department of Organismic and Evolutionary Biology, Harvard University, 2024

Reviewer in tenure track appointment procedure Functional Morphology of Arthropods, University of Vienna (2024)

Evaluation BEOM Section (Stazione Zoologica di Napoli, Italy) 2024

Reviewer in tenure track appointment procedure OIST, Okinawa, Japan (2024)

EDITORIAL ACTIVITIES

Member Editorial Board of Journal Experimental Zoology

Member Editorial Board of Frontiers in Evolutionary Developmental Biology

Member Editorial Board of BMC Evolutionary Biology

OTHER EDITORIAL ACTIVITIES

Editor special issue of "Cell and Tissue Research" on the "**Structure and evolution of the digestive system in invertebrates**" (2019)

Editor special issue of Frontiers in Ecology and Evolution on "**MorphoEvoDevo: A Multilevel Approach to Elucidate the Evolution of Metazoan Organ Systems**" (2023)

Editor special issue of Frontiers in Ecology and Evolution on "**Current Thoughts on the Brain-Computer Analogy -All Metaphors Are Wrong, but Some Are Useful**" (2023)

Referee for different journals, including: PNAS, eLife, Scientific Reports, Developmental Biology, BMC Biology, Development, Frontiers, Proceedings Royal Society, Nature Commun, Neural Development, etc…

MEMBERSHIP

Member of the Sociedad Española de Biologia Evolutiva (Spain)

Member Societat Catalana de Biologia (Spain)

PUBLICATIONS

Clarke, A.V., Hoye, E., Hembrom, A.A., Paynter, V.M., Vinther, J., Wyrozemski, L.A., Birukova, I., Formaggioni, A., Ovchinnikov, V., Heryn, H., Pierce, A., Wu, C., Aslanzadeh, M., Cheneby, J., **Martinez, P.,** Friedlander, M.R., Hovig, E., Hackenberg, M., Umu, S.U., Johansen, M., Peterson, K.V., and Fromm, B. (2024) MirDB 3.0: Improved taxonomic sampling, uniform nomenclature of novel conserved families, and

updated covariance models. *Nucleic Acids Research*;, gkae1094, https://doi.org/10.1093/nar/gkae1094

Komarov, N., Aeschbacher, C., Sauterel, L., Zuercher, E., Bailly, X., **Martinez, P**., and Sprecher, S.G. (2024) Sensory discrimination of chemical and temperature stimuli in the acoel *Symsagittifera roscoffensis.* Submitted.

Peterson, K.J., Clarke, A.W., Zolotarov, G., Deline, B., McPeek, M.A., **Martinez, P.**, and Fromm, B. (2024) Capturing changes to animal complexity from quantifiable patterns in genomic data. Submitted.

Martinez, P., Bailly, X., Sprecher, S.G. and Hartenstein, V. (2024) The acoel nervous system: Morphology and Development. Neural Development. 19:9. https://doi.org/10.1186/s13064-024-00187-1

Parey, E., Ortega-Martinez, O., Delroisse, J., Piovani, L., Czarkwiani., A., Dylus, D., Arya, S., Dupont, S., Thorndyke, M., Larsson, T., Johannesson, K., Buckley, K.M., **Martinez, P.,** Oliveri, P., and Marlétaz, F. The brittle star genome illuminates the genetic basis of animal appendage regeneration. Nature Ecology and Evolution. (2024) 8, 1505-1521.

Rosner, A., Ballarin, L., Barnay-Verdier, S., Borisenko,I., Drago,L., Drobne, D., Eliso, M.C., Harbuzova, Z., Grimaldi, A., Guy-Haim, T., Karahan, A., Lynch, I., Lionetto, M.G., **Martinez, P.**, Mehennaoui, K., Ozcan, E.O, Pinsino, A., Paz, G., Rinkevich, B., Spagnuolo, A., Sugni, M., and Sébastien Cambier (2024) A broad taxa approach as an important concept in ecotoxicological studies and pollution monitoring. Biological Reviews. 99 (1) 131-176

Perea-Atienza, E., Gavilán, B., Chiodin, M., Sprecher, S.G. and **Martinez, P.** (2023) XENACOELOMORPHA. Manuale di Zoologia [Book Chapter] Piccin Editore, Padova.

"Wanninger, A., **Martinez, P**., Meyer, N. P., eds. (2023). MorphoEvoDevo: A multilevel approach to elucidate the evolution of metazoan organ systems. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-8325-3859-3" (E-book)

Wanninger, A., **Martinez, P.,** and Meyer, N. (2023) EDITORIAL " MorphoEvoDevo: A Multilevel Approach to Elucidate the Evolution of Metazoan Organ Systems". Front. Ecol. Evol., Sec. Evolutionary Developmental Biology. Volume 11 | https://doi.org/10.3389/fevo.2023.1307280

Marlétaz, F. et al. (**P. Martinez**, one of the authors) (2023) Analysis of the P. lividus sea urchin genome highlights contrasting trends of genomic and regulatory evolution in deuterostomes. Cell Genomics. 3 (4), 100295.

Botton-Amiot, G., **Martinez, P.,** and Sprecher, S.G. (2023) Associative learning in the cnidarian *Nematostella vectensis. PNAS.* 120 (13) e2220685120

Matassi, G., **Martinez, P**., Mishra, B., eds. (2023). Current thoughts on the brain-computer analogy - all metaphors are wrong, but some are useful. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-83251-651-5". E-book

Matassi, G., Mishra, B., and **Martinez, P.** (2023) Editorial: Current Thoughts on the Brain-Computer Analogy -All Metaphors Are Wrong, but Some Are Useful. Front. Ecol. Evol. 11:1130510.

Matassi, G., and **Martinez, P.** (2023) The Brain-Computer Analogy- "a Special Issue". Frontiers Ecol Evol. 10:1099253.

Magalhaes, F., Andrade, C., Simoes, B., Brigham, F., Valente, R., **Martinez, P**., Rino, J., Sugni, M., Varela-Coelho, A. (2023) Regeneration of Starfish Radial Nerve Cord restores animal mobility and unveils a new coelomocyte population. Cell Tissue Res. **394**, 293–308.

Martinez, P., Ustyantsev, K., Biryukov. M., Mouton, S., Glasenburg, L., Sprecher, SG., Bailly, X., and Berezikov, E. (2023) Genome assembly of the acoel flatworm *Symsagittifera roscoffensis*, a model for research on body plan evolution and photosymbiosis, *G3 Genes|Genomes|Genetics*, 13 (2), jkac336.

Paganos P, Ronchi P, Carl J, Mizzon G, **Martinez P**, Benvenuto G and Arnone MI (2022), Integrating single cell transcriptomics and volume electron microscopy confirms the presence of pancreatic acinar-like cells in sea urchins. Front. Cell Dev. Biol. 10:991664. doi: 10.3389/fcell.2022.991664

Ferrario, C., Ben Khadra, Y., Sugni, M., Candia-Carnevali, M.D., **Martinez, P**., and Bonasoro, F. (2022) Studying arm explant regeneration using *Echinaster sepositus*. In: Blanchoud and Galliot (ed), Whole-body regeneration, Methods in Molecular Biology (Springer Protocols) Vol. 2450. pp 263-292. Humana Press.

Martinez P, Ballarin L, Ereskovsky, AV, Gazave E, Hobmayer B, Manni L, Rottinger E, Sprecher SG, Tiozzo S, Varela-Coelho A, and Rinkevich B. (2022) Articulating the "stem cell niche" paradigm through the lens of non-model aquatic invertebrates. BMC Biology. 20, 23.

Rinkevich B., Ballarin L, **Martinez, P.,** Somorjai, I., Ben-Hamo, O., Borisenko, I., Berezikov, E., Ereskovsky, AV., Gazave E., Khnykin, D., Manni L., Petukhova, O., Rosner, A., Rottinger E., Spagnuolo, A., Sugni, M., Tiozzo S., and Hobmayer B. (2022) A pan-metazoan concept for adult stem cells: The wobbling Penrose landscape. Biological Reviews. 97 (1), 299-325.

Lan, T., Zhao, Y., Zhao, F, He.Y, **Martinez, P**, and Strausfeld, N. (2021) Leanchoiliiidae reveals the ancestral organization of the stem arthropod brain. Current Biology. 31 (19) P4397-4404.e2

Oliveira, B., Guatelli, S., **Martinez, P.,** Simões, B., Bispo, C., Andrade, C., Ferrario, C., Bonasoro, F., Rino, J., Sugni., M., Gardner, R., Zilhão, R., and **Varela Coelho, A**. (2021) Characterization of coelomic fluid cell types in the starfish Marthasterias glacialis using a flow cytometry/imaging combined approach. Frontiers Immunology. 12:641664.

Martinez, P., Hartenstein, V., Gavilán, B., Sprecher, S.G., and Bailly, X. (2021) "Symsagittifera roscoffensis as a model in biology". In: Handbook of Established and Emerging Marine Model Organisms in Experimental Biology. pp 217-234. CRC Press. FL. USA

Duruz, J., Kaltenrieder, C., Ladurner, P., Bruggmann, R., **Martinez, P.#,** and Sprecher, S.G. # (2021) Acoel single-cell transcriptomics: cell type analysis of a deep branching bilaterian. Mol. Biol. Evol. 38 (5): 1888-1904.

Martinez, P., and Sprecher, S.G. (2020) Of circuits and brains. The origin and diversification of neural architectures. Frontiers Ecology and Evolution 8, 82

Perea-Atienza E., Gavilán B., Sprecher S.G., **Martinez P.** (2020) Immunostaining and In Situ Hybridization of the Developing Acoel Nervous System. In: Sprecher S. (eds) Brain Development. Methods in Molecular Biology, vol 2047. Humana, New York, NY.

Jondelius, U., Raikova, O., and **Martinez, P**. (2019) Xenacoelomorpha, a key group to understand bilaterian evolution: morphological and molecular perspectives. In: Pontarotti P. (eds) Evolution, Origin of Life, Concepts and Methods. Springer, Cham. Pp 287-316.

Hartenstein, V. & **Martinez, P**. Structure, development and evolution of the digestive system Cell Tissue Res (2019) 377: 289. https://doi.org/10.1007/s00441-019-03102-x

Hartenstein, V. & **Martinez, P**. Phagocytosis in cellular defense and nutrition: a food-centered approach to the evolution of macrophages. Cell Tissue Res (2019) 377: 527. https://doi.org/10.1007/s00441-019-03096-6

Philippe, H., Poustka, A.J., Chiodin, M., Hoff, K.J., Dessimoz, C., Tomiczek, B., Schiffer, P.H., Müller, S., Domman, D., Horn, M., Kuhl, H., Timmermann, B., Satoh, N., Hikosaka-Katayama, T., Nakano, H., Rowe, M. L., Elphick, M.R., Thomas-Chollier, M., Hankeln, T., Mertes, F., Wallberg, A., Copley, R.R., **Martinez, P.,** and Telford, M. J. Mitigating anticipated effects of systematic errors supports sister-group relationship between Xenacoelomorpha and Ambulacraria. Current Biology (2019) 29 (11) p1818–1826.e6

Gavilán, B., Sprecher, S.G., Hartenstein, V., and **Martinez, P**. The digestive system of xenacoelomorphs Cell Tissue Res (2019) 377: 369. https://doi.org/10.1007/s00441-019-03038-2

Arnone, M.I., Oliveri, P., and **Martinez, P.** (2019) A conceptual history of the "Regulatory Genome": from Theodor Boveri to Eric Davidson. Marine Genomics. 44, 24-31.

Martinez, P. (2018) The comparative method in Biology and the essentialist trap. Front. Ecol. Evol. 6:130.

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