

PERSONAL INFORMATION

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Nationality: Spanish

EDUCATION

- 2010-2014 PhD in *Biology* (Extraordinary Prize). **University of Barcelona**, Barcelona, Spain.
- 2009-2010 M.Sc. in *Developmental Biology and Genetics* (Extraordinary Prize). **University of Barcelona**, Barcelona, Spain.
- 2004-2009 B.Sc. in *Biological sciences*. **University of Barcelona**, Barcelona, Spain.

ACADEMIC POSITIONS

- Jan 2020-ongoing **Queen Mary University of London**, United Kingdom. Lecturer in Bioinformatics.
- Dec 2014- Dec 2019 **The University of Western Australia**, Perth, Australia. EMBO post-doctoral long-term fellowship/Research associate. Advisor: Prof. *Ryan Lister*.
- Feb 2014- Nov 2014 **Evolutionary Biology Institute, CSIC-UPF**, Barcelona, Spain. European Research Council funded Post-doctoral fellow. Advisor: Prof. *Iñaki Ruiz-Trillo*.
- 2010-2014 **University of Barcelona/Evolutionary Biology Institute**, Barcelona, Spain. PhD Student. Advisor: Prof. *Iñaki Ruiz-Trillo*.
- 2007-2008 **University of Barcelona/Department of Genetics**, Barcelona, Spain. Undergraduate intern student. Supervisor: Prof. *Iñaki Ruiz-Trillo*.

GRANTS AND FUNDING

- 2020 ERC Starting Grant: METHYLEVOL. **Funding agency:** ERC. Amount: 1,500,000 EUR.
- 2017 UWA Research Collaboration Award. **Funding agency:** University of Western Australia. Amount: 21,400 AUD.
- 2014 EMBO post-doctoral long-term fellowship (2014-2016). **Funding agency:** European Molecular Biology Organization. Amount: 138,674 AUD.

PUBLICATIONS

*Equally contributing authors | # Corresponding author

- 2020 **de Mendoza A**, Poppe D, Buckberry S, Pflueger J, Albertin CB, Daish T, Bertrand S, de la Calle-Mustienes E, Gomez-Skarmeta JL, Nery JR, Ecker JR, Baer B, Ragsdale CW, Grützner F, Escriva H, Venkatesh B, Bogdanovic O, Lister R#. The emergence of the brain non-CpG methylation system in vertebrates. ***Nature Ecology and Evolution***. Accepted.

- 2020 Ruiz-Trillo I#, **de Mendoza A**. Towards understanding the origin of animal development. ***Development***. Accepted.
- 2020 Ross SE, Angeloni A, Geng FS, **de Mendoza A**, Bogdanovic O. Developmental remodelling of non-CG methylation at satellite DNA repeats. ***Nucleic acids research***. Accepted.
- 2020 Hadjieconomou D, King G, Gaspar P, Mineo A, Blackie L, Ameku T, Studd C, **de Mendoza A**, Diao F, White BH, Brown AEX, Plaçais PY, Prétat T, Miguel-Aliaga I. Enteric neurons increase maternal food intake during reproduction. ***Nature***. Accepted.
- 2020 Kenny NJ, Francis WR, Rivera-Vicéns RE, Juravel K, **de Mendoza A**, Díez-Vives C, Lister R, Bezares-Calderon L, Grombacher L, Roller M, Barlow LD, Camilli S, Ryan JF, Wörheide G, Hill AL, Riesgo A, Leys S. Tracing animal genomic evolution with the chromosomal-level assembly of the freshwater sponge *Ephydatia muelleri*. ***Nature Communications***. 11(1):3676.
- 2020 Almudi I, Vizueta J, Wyatt CDR, **de Mendoza A**, Marletaz F, Firbas PN, Feuda R, Masiero G, Medina P, Alcaina A, Cruz F, Gómez-Garrido J, Gut M, Alioto TS, Vargas-Chavez C, Davie K, Misof B, González J, Aerts S, Lister R, Paps J, Rozas J, Sánchez-Gracia A, Irimia M, Maeso I, Casares F. Genomic adaptations to aquatic and aerial life in mayflies and the origin of insect wings. ***Nature Communications***. 11(1):2631.
[Highlighted](#) in *Science*.
- 2020 **de Mendoza A**#, Lister R, Bogdanovic O#. Evolution of DNA methylome diversity in eukaryotes. ***Journal of Molecular Biology***. pii: S0022-2836(19)30659-X.
[Special issue cover](#) of the journal.
- 2019 **de Mendoza A**#, Hatleberg W, Pang K, Leininger S, Bogdanovic O, Pflueger J, Buckberry S, Technau U, Hejnol A, Adamska M, Degnan BM, Degnan SM, Lister R#. Convergent evolution of a vertebrate-like methylome in an ancient animal lineage. ***Nature Ecology and Evolution***. 3(10):1464-1473.
- 2019 **de Mendoza A**#, Pflueger J, Lister R#. Capture of a functionally active Methyl-CpG Binding Domain by an arthropod retrotransposon family. ***Genome Research***. 29(8):1277-1286.
- 2019 **de Mendoza A**, Sebé-Pedrós A. Origin and evolution of eukaryotic transcription factors. ***Current Opinion in Genetics & Development***. 26;58-59:25-32.
- 2018 **de Mendoza A**#, Bonnet A, Vargas-Landin DB, Ji N, Hong F, Yang F, Li L, Hori K, Pflueger J, Buckberry S, Ohta H, Rosic N, Lesage P, Lin S, Lister R#. Recurrent acquisition of cytosine methyltransferases into eukaryotic retrotransposons. ***Nature Communications***. 9(1):1341.
- 2017 Knaupp AS*, Buckberry S*, Pflueger J, Lim SM, Ford E, Larcombe MR, Rossello FJ, **de Mendoza A**, Alaei S, Firas J, Holmes ML, Nair SS, Clark SJ, Nefzger CM, Lister R, Polo JM. Transient and permanent reconfiguration of chromatin and transcription factor occupancy drive reprogramming. ***Cell Stem Cell*** 21:834-845.
Highlighted in a *Cell Stem Cell* "[Preview](#)".
- 2016 Gold DA, Grabenstatter J, **de Mendoza A**, Riesgo A, Ruiz-Trillo I, Summons RE. Sterol and Genomic Analyses Validate the Sponge Biomarker Hypothesis. ***Proceedings of the National Academy of Sciences USA (PNAS)*** 113(10):2684-9.
- 2016 **de Mendoza A**, Jones JW, Friedrich M. Methuselah/Methuselah-like G protein-coupled receptors constitute an ancient metazoan gene family. ***Scientific Reports*** 6:21801.

- 2015 **de Mendoza A#**, Suga H, Permanyer J, Irimia M, Ruiz-Trillo I#. Complex transcriptional regulation and independent evolution of fungal-like traits in a relative of animals. *eLife* e08904. Appeared in *Nature* "[Research Highlights](#)".
- 2015 Torruella G*, **de Mendoza A***, Grau-Bové X, Antó M, Chaplin MA, del Campo J, Eme L, Pérez-Cordón G, Whipps CM, Nichols KM, Paley R, Roger AJ, Sitjà-Bobadilla A, Donachie S, Ruiz-Trillo I. Phylogenomics Reveals Convergent Evolution of Lifestyles in Close Relatives of Animals and Fungi. *Current Biology* 25:2404-2410.
- 2014 **de Mendoza A#**, Ruiz Trillo I#. Forward genetics for back-in-time questions. *eLife*. 3: e05218.
- 2014 **de Mendoza A**, Sebé-Pedrós A, Ruiz-Trillo I. The evolution of the GPCR signalling system in eukaryotes: modularity, conservation and the transition to metazoan multicellularity. *Genome Biology and Evolution* 6:606-619.
- 2014 Desvoyes B, **de Mendoza A**, Ruiz-Trillo I, Gutierrez C. Novel roles of plant RETINOBLASTOMA-RELATED (RBR) protein in cell proliferation and asymmetric cell division. *Journal of experimental botany*. 65:2657-66.
- 2013 **de Mendoza A***, Sebé-Pedrós A*, Sêstak SM, Matejcîc M, Torruella G, Domazet-Lôso T, Ruiz-Trillo I. Transcription factor evolution in eukaryotes and the assembly of the regulatory toolkit in multicellular lineages. *Proceedings of the National Academy of Sciences USA (PNAS)* 110:E4858-66.
Selected by the "Faculty of 1000" (score 3).
- 2013 Suga H*, Chen Z*, **de Mendoza A**, Sebé-Pedrós A, Brown MW, Kramer E, Carr M, Kerner P, Vervoort M, Sánchez-Pons N, Torruella G, Derelle R, Manning G, Lang FB, Russ C, Haas BJ, Roger AJ, Nusbaum C, Ruiz-Trillo I. The Capsaspora genome reveals a complex unicellular prehistory of animals. *Nature Communications* 4:1–9.
Selected by the "Faculty of 1000" (score 2).
- 2013 Martín-Durán JM*, **de Mendoza A***, Sebé-Pedrós A*, Ruiz-Trillo I, Hejnal A. A broad genomic survey reveals multiple origins and frequent losses in the evolution of respiratory hemerythrins and hemocyanins. *Genome Biology and Evolution* 5:1435–1442.
- 2012 Suga H, Dacre M, **de Mendoza A**, Shalchian-Tabrizi K, Manning G, Ruiz-Trillo I. Genomic Survey of Premetazoans Shows Deep Conservation of Cytoplasmic Tyrosine Kinases and Multiple Radiations of Receptor Tyrosine Kinases. *Science Signaling* 5:ra35–ra35.
- 2011 **de Mendoza A**, Ruiz-Trillo I. The mysterious Evolutionary Origin for the GNE gene and the root of Bilateria. *Molecular Biology and Evolution* 28:2987–2991.
- 2011 **de Mendoza A**, Ruiz-Trillo I. New genomes, new taxa and deep questions in the eukaryotic tree of life: a meeting report on the EMBO comparative genomics conference. *EvoDevo*. 23;2:22.
- 2011 Sebé-Pedrós A*, **de Mendoza A***, Lang BF, Degnan BM, Ruiz-Trillo I. Unexpected Repertoire of Metazoan Transcription Factors in the Unicellular Holozoan *Capsaspora owczarzaki*. *Molecular Biology and Evolution* 28:1241–1254.
- 2010 **de Mendoza A**, Suga H, Ruiz-Trillo I. Evolution of the MAGUK protein gene family in premetazoan lineages. *BMC Evolutionary Biology* 10:93

PREPRINTS

- 2020 Ross SE, Angeloni A, **de Mendoza A**, Bogdanovic O. Pervasive non-CpG methylation at zebrafish mosaic satellite repeats. [BioRxiv](#).
- 2017 Ford E, Grimmer MR, Stolzenburg S, Bogdanovic O, **de Mendoza A**, Farnham PJ, Blancafort P, Lister R. Frequent lack of repressive capacity of promoter DNA methylation identified through genome-wide epigenomic manipulation. [BioRxiv](#).

BOOK CHAPTERS

- 2019 **de Mendoza A**, Sebé-Pedrós A. Chapter: The protistan cellular and genomic roots of animal multicellularity. **Book:** *Old Questions and Young Approaches to Animal Evolution*. Springer, ISBN 978-3-030-18202-1.
- 2015 Sebé-Pedrós A, **de Mendoza A**. Chapter: Transcription Factors and the Origin of Animal Multicellularity. **Book:** *Evolutionary Transitions to Multicellular Life*, pages 379-394. Springer, ISBN 978-94-017-9641-5.

PRESENTATIONS**INVITED TALKS**

- September 2020 New Horizons in Genomics Meeting, London, UK.
- March 2020 Seminar at the Centre for Genomics and Child Health, Queen Mary University of London, UK.
- November 2019 Seminar at the School of Biological Sciences, University of Adelaide, Australia.
- November 2019 Annual EpiCSA meeting, Adelaide, Australia.
- November 2019 Seminar at the Okinawa Institute of Science and Technology, Okinawa, Japan.
- May 2019 Crossroads between transposons and gene regulation, The Royal Society, UK.
- April 2019 Seminar, Institute of Evolutionary Biology (CSIC-UPF), Barcelona, Spain.
- March 2019 Seminar, Garvan Institute of Medical Research Seminar, Sydney, Australia.
- November 2018 Australia and New Zealand Society for Cell and Developmental Biology Meeting - ACT Chapter, ANZCDB, Canberra, Australia.
- April 2017 CRG Scientific Sessions, Centre for Genomic Regulation, Barcelona, Spain.
- April 2015 Biological Sciences seminar, University of Queensland, Brisbane, Australia.
- January 2014 Colloquium of the Systems and Synthetic Biology Program, Centro Nacional de Biotecnología – CSIC, Madrid, Spain.

CONTRIBUTED TALKS

- June 2014 SMBE Annual Meeting 2014, Society of Molecular Biology and Evolution, San Juan, Puerto Rico. **Walter Fitch Award talk.**
- November 2013 4th SESBE Meeting, Spanish Society for Evolutionary Biology (SESBE), Barcelona, Spain.
- August 2013 International Congress of Protozoology ICOP XIV, Vancouver, Canada.
- July 2013 XIII Evolutionary Biology Meeting, Institute for Catalan Studies, Barcelona, Spain.

POSTERS

- May 2017 Epigenetics and Chromatin 2017, EMBO, Heidelberg, Germany.
- July 2016 SMBE Annual Meeting 2016, Society of Molecular Biology and Evolution, Gold Coast, Australia.
- July 2015 SMBE Annual Meeting 2015, Society of Molecular Biology and Evolution, Vienna, Austria.
- February 2015 36th Annual Lorne Genome Conference, Lorne, Australia.
- October 2011 Comparative Genomics of Eukaryotic Microorganisms, EMBO, Sant Feliu de Guíxols, Spain.
- September 2008 ICREA Conference on the Origin and Early Evolution of Metazoa, ICREA, Barcelona, Spain.

MEETING ORGANISER

- 2021 Symposium: “Transposable elements as drivers of developmental evolution”. Organiser with Dr. Ignacio Maeso. **EuroEvoDevo2021 meeting**, Naples, Italy.
- 2020- QMUL Epigenetics Hub Webinar series.
- 2018 *Evolutionary Genomics Seminar*. Organiser/Coordinator. **The University of Western Australia**, Australia.
- 2015 Symposium: *The origins of multicellularity under the light of genomics*. Organiser with Dr. Arnau Sebe-Pedros. **Society for Molecular Biology and Evolution 2015 Meeting**, Vienna, Austria.

STUDENT SUPERVISION

Primary PhD supervisor:

Luke Sarre. Queen Mary University of London. Thesis project “*The evolution of DNA methylation in early eukaryote evolution*”.

Secondary PhD supervisor:

Keroshini Guynes. Queen Mary University of London. Thesis project “*Dissecting the Role of DNA Methylation in Annelids*”.

Dulce Vargas-Landín. The University of Western Australia, Australia. Thesis project: “*Epigenomic and genomic variation driven by retrotransposon mobilization during hippocampal neurogenesis.*”

TEACHING EXPERIENCE

- 2018 Conventional lectures: **Genomics I - Introduction to genome scale analysis and approaches**. Level 3 core unit in the Biochemistry and Molecular Biology major (Undergraduate)
Hours: 1h. Participant teacher. *The University of Western Australia*, Perth, Australia.
- 2014 Conventional lectures: **Transcription factor evolution and Gene Regulatory Networks**. MSc in Genetics and Genomics (Graduate level).
Hours: 2h. Participant teacher. *University of Barcelona*, Barcelona, Spain.
- 2013 Conventional lectures: **Origins and diversity of eukaryotes**. MSc in Biodiversity (Graduate level).
Hours: 2h. Participant teacher. *University of Barcelona*, Barcelona, Spain.
- 2011 Practical courses: **Developmental biology**. Biology degree (Undergraduate level).
Hours: 45h. Participant teacher. *University of Barcelona*, Barcelona, Spain.

OUTREACH

- 2013 Science communication review article.
The origins of multicellularity. **de Mendoza A**, Sebé-Pedrós A, Ruiz-Trillo I.
Investigación y Ciencia, Spanish affiliate of *Scientific American*.

FELLOWSHIPS AND AWARDS

- 2020 ERC Starting Grant.
- 2019 “Ramon y Cajal” Early PI fellowship (5 years salary + 40,000 EUR). **Funding agency:** Spanish Ministry of Science. Declined in favour of QMUL position.
- 2017 UWA Research Collaboration Award, University of Western Australia.
- 2015 PhD extraordinary prize 2013-2014. Faculty of Biology, University of Barcelona.
- 2014 EMBO post-doctoral long-term fellowship.
- 2014 Walter Fitch Award travel fellowship, SMBE 2014. Puerto Rico.
- 2009-2013 PhD fellowship. FPI program from the Spanish Ministry of Education and Science. Spain.
- 2013 Holtz-Conner Travel award, ICOP XIV. Canada.
- 2013 Prevosti Prize for the best talk, XIII Evolutionary Biology Meeting, Institute for Catalan Studies. Spain.
- 2012 Travel fellowship, FPI program from the Spanish Ministry of Education and Science. Spain.
- 2011 Travel fellowship, conceded by Spanish Genetics Society.
- 2011 Best poster prize, EMBO Comparative Genomics of Eukaryotic Microorganisms. Spain.
- 2010 MSc Degree Extraordinary prize. University of Barcelona. Spain.
- 2008-2009 Undergraduate Research Fellowship. AGAUR program from the Catalan Autonomic Government. Spain.

PEER REVIEW

(source Publons)

Nature Communications
Science Advances
Nature Plants
Genome Research
Communications Biology
Proceedings of the Royal Society B
Molecular Biology and Evolution
Genome Biology and Evolution
Integrative and Comparative Biology
Plos One
Marine genomics
BMC Evolutionary Biology
BMC Genomics
Scientific Reports
Frontiers in Zoology
Essays in Biochemistry

EXTERNAL REVIEW

Czech Science Foundation

