



Department of Paleobiology  
Museo Nacional de Ciencias Naturales  
Consejo Superior de Investigaciones Científicas

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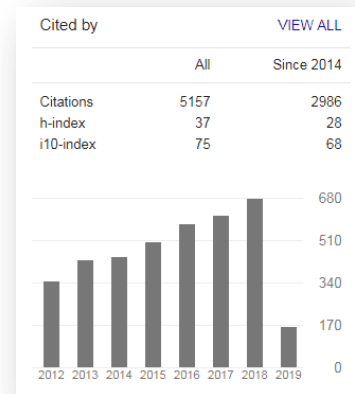
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(Google Scholar Marzo, 2019)

## *Dr. Markus Bastir, Curriculum Vitae*

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### *Research Profile*

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As paleoanthropologist I am interested in human evolutionary anatomy. I am looking into how different anatomical and functional systems interact with each other during ontogeny and evolution giving rise to the variation observed in the hominin fossil record. This view point leads to an “organism-based” framework for a causal-analytical study of hominin fossils. Using geometric morphometrics enables me further to add a hypothetico-deductive dimension to my research. With 3D virtual morphological methods I can not only analyse but also visualize quantitative models of patterns, model functional processes, or simulate patterns of evolutionary change. This combination of concepts and methods allows for an attractive way to contribute to our knowledge about the form, function and paleobiology of our ancestors.

### *Current academic positions*

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| Since 2016 | Scientist in Charge of the Virtual Morphology Lab MNCN-CSIC                                      |
| Since 2015 | Member of the Doctorate Programme in Biology (Universidad Autónoma Madrid)                       |
| Since 2014 | Research Associate, Evolutionary Studies Institute, Wits University, Johannesburg, South Africa. |
| Since 2010 | Senior scientist (Científico Titular) at the Museo Nacional de Ciencias Naturales                |

### *Academic Training and Theses*

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| 2004 | PhD-Thesis, Doctor europaeus (Summa cum laude), Museo Nacional de Ciencias Naturales-CSIC; Autónoma University of Madrid, Spain; (Supervisor: Prof. Antonio Rosas) |
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- 2003 Master of Advanced Studies, Autónoma University of Madrid, Spain
- 1998 “3D-Analysis of prognathism” Master Thesis (MSc), Biology, Physical Anthropology, University of Vienna, Austria (Supervisor: Prof. Horst Seidler)

### *Administration tasks and Service*

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- Since 2016 Scientist in Charge Virtual Morphology Lab MNCN-CSIC (877467)
- Since 2015 Editorial Board of “Anthropological Sciences”, Journal of the Anthropological Society of Nippon, Japan
- 2014-2019 Associate Editor of the American Journal of Physical Anthropologist (AJPA), responsible fields: paleoanthropology, geometric morphometrics, statistics
- 2013-2014 Vocal 3, Titular del Tribunal Nº3 de promoción interna en la Escala de Científicos Titulares (CSIC) (BOE nº 264, 3/11/2013)
- Since 2008 Associate Editor Journal of Anthropological Sciences (JASs)
- 2007-2009 Elected representative for the fellows (Early Stage, Experienced Researchers) Marie Curie Research Training Network “EVAN, European Virtual Anthropology Network)

### *Past academic positions*

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- 2008-2009 Ramon y Cajal postdoctoral researcher, MNCN-CSIC
- 2006-2008 Marie Curie Fellow, Experience Researcher (RTN-EVAN), MNCN-CSIC
- 2004-2006 Post-doctoral fellow (MEC), Hull-York Medical School, University of York, UK
- 1999-2004 Predoctoral fellow (Spanish Ministry of Science); MNCN-CSIC
- 1996-1999 Research assistant at the Institute of Anthropology, Natural History Museum, Vienna, Austria

### *Fellowships, academic awards, recognitions*

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- 2015 Collection study grant (SYNTHESYS3); Natural History Museum, Vienna, Austria.
- 2016 SYNTHESYS-collection study grant (AT-TAF-4616)
- 2015 Scientist in charge of the Virtual Morphology Lab, MNCN-CSIC

- 2013 Highly cited researcher (ISI-Thomson Reuters)
- 2005 Hunter Collection study grant of the Field Museum of Natural History, Chicago, USA, (Prof. Bob Martin, Prof. Matt Ravosa, Prof. Callum Ross).
- 2004 Short research grant (FPI; MCyT) (not carried out) SUNY, Stony Brook, USA (Dr. Callum Ross).
- 2002 Short research grant (FPI; MCyT), Natural History Museum, London, United Kingdom.
- 2001 Collection study grant (SYNTHESYS); The Natural History Museum, London, UK.
- 1999 – 2000 Predoctoral fellowship: Atapuerca (Museo Nacional de Ciencias Naturales, Consejo Superior de Investigaciones Científicas, CSIC).
- 1998 Research fellowship (Ludwig Boltzmann Institute of Historical Anthropology, Vienna).
- 1995- 1996 ERASMUS-fellowship at the Autónoma University of Madrid (University of Vienna, Austria).

#### *Research Projects as Principal Investigator (PI)*

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- 2016-2019 Simulaciones morfométricas en 3D del crecimiento del torso en *Australopithecus*, *Homo* temprano y primates actuales y sus implicaciones funcionales para la evolución humana, PI: Dr. Markus Bastir; Museo Nacional de Ciencias Naturales, Madrid, Spain. (CGL2015-64687-P, Spanish Ministry of Economy and Competition, MINECO) (141.000€)
- 2016-2017 3D geometric morphometrics of the thorax and respiratory muscles of patients with Osteogenesis Imperfecta. IP Dr. Juan Alberto Sanchis Gimeno Co-PI Dr. Markus Bastir, Museo Nacional de Ciencias Naturales, Madrid, Spain, BrittleboneFoundation, Netherlands. (16.000€)
- 2015 – 2017 Morfometría geométrica 3D de la mecánica ventiladora del tórax esquelético y los músculos de la respiración en pacientes con Osteogénesis Imperfecta (OI). IP Dr. Markus Bastir, Museo Nacional de Ciencias Naturales, Madrid, Spain, Co-IP Dr. Juan Alberto Sanchis Gimeno Facultad de Medicina, Universidad de Valencia; (BF14\_005 Fundación ERESA). (20.000€)
- 2013 – 2014 “Comparative thoracic anatomy of the El Sidrón Neanderthals (Asturias, Spain) and its evolutionary implications for the paleobiology of the human respiratory system. (PhD field work grant for Daniel García Martínez, PhD student supervised by Dr. Markus Bastir, (The Leakey Foundation) (Project members Daniel García Martínez, Dr. Markus Bastir, Prof. Antonio Rosas). (7000\$)
- 2013 – 2016 “Crecimiento, integración, forma y función del sistema respiratorio en *Homo*. Implicaciones para la evolución morfológica cranofacial y post-craneal y

- paleofisiología humana" PI: Dr. Markus Bastir; Museo Nacional de Ciencias Naturales, Madrid, Spain. (CGL-2012-37279, Spanish Ministry of Economy and Competition, MINECO). (80.000€)
- 2011 – 2013 Ontogeny, evolution and function of the human respiratory apparatus. IP Dr. Markus Bastir. HULP: PI-1177. (MNCN-CSIC and University Hospital La Paz, Madrid).
- 2010 – 2011 “Human Paleophysiology”: Estudio de la evolución del aparato respiratorio en el género Homo mediante morfometría geométrica 3D y modelización virtual” PI: Dr. Markus Bastir. (CSIC MNCN 201030I005). (25.000€)

### *Participation in research projects*

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- 2019 - 2024 SYNTHESYS PLUS, (Joint Research Activity 2: Work package 7.2): Developing processes and pipelines for high resolution imaging services, including 3D models of NH specimens: Imaging on Demand (IoD)
- 2018 - 2019 FCT-17-12123 (PI Dr. Pilar Lopez –García Gallo) “Ver con las manos, escuchar con la mirada, sentir con los recuerdos y aprender sin limitaciones. El MNCN un museo accessible”
- 2013 - 2017 SYNTHESYS 3, WP4, Joint Research Activity, (Scientist in Charge; Dr. Marian Ramos, Museo Nacional de Ciencias Naturales, Madrid, Spain; (CE 312253); Obj2.1 “Moving from Physical to Digital collections” (responsible researcher at MNCN-CSIC, Dr. Markus Bastir)
- 2014 - 2015 “Proyecto Cervantes”, PI: Dr. Francisco Exteberria Gabilondo (Universidad País Vasco). Digitalización de las momias del Convento de San Ildefonso, de Trinitarias Descalzas, de Madrid
- 2010 – 2012. “Morphological evolution of the genus Homo. Effects of growth duration and encephalic increment” PI: Dr. Antonio Rosas; Museo Nacional de Ciencias Naturales, Madrid, Spain. (CGL-2009-09013, MEC).
- 2007 – 2009. “Mosaic evolution in the craniofacial system of the genus Homo. Phylogenetic relevance of body mass and brain form interactions”. PI: Dr. Antonio Rosas; Museo Nacional de Ciencias Naturales, Madrid, Spain. (CGL-2006-02131, MEC).
- 2005 – 2009. “PALEO”, Marie Curie Research Training Network, Scientist in Charge, Prof. Paul O'Higgins, University of York, United Kingdom.
- 2007 – 2009 “Mosaic evolution in the craniofacial system of the genus *Homo*. Phylogenetic relevance of body mass and brain form interactions”. PI: Dr. Antonio Rosas; Museo Nacional de Ciencias Naturales, Madrid, Spain. (MEC)

- 2005 – 2009 “European Virtual Anthropology Network, EVAN (MRTN-CT-2005-019564)”  
Marie Curie RTN. Coordinator: Dr. Gerhard Weber, University of Vienna,  
Austria. Scientist in Charge: Dr. Antonio Rosas, Museo Nacional de Ciencias  
Naturales, Madrid, Spain.
- 2004 – 2006 "Los Neandertales de las Cuevas de El Sidrón (Asturias)". PI: Dr. Antonio Rosas;  
Museo Nacional de Ciencias Naturales, Madrid, Spain, Convenio de Cultura del  
Principado de Asturias/Universidad de Oviedo (CN-00-184-D3, CN-01-132-133-  
134-B1; CN-04-152)
- 2004 – 2006 “El Pleistoceno y Holoceno de la Sierra de Atapuerca. Paleobiología y  
Paleoeconomía de las poblaciones humanas del Pleistoceno y Holoceno II. PI:  
Dr. José M. Bermúdez de Castro, Museo Nacional de Ciencias Naturales,  
Madrid, Spain BOS 2003-08938-C03-02.
- 2001 – 2003 “El Pleistoceno y Holoceno de la Sierra de Atapuerca. Paleobiología y  
Paleoeconomía de las poblaciones humanas del Pleistoceno y Holoceno I. PI:  
Dr. José M. Bermúdez de Castro, Museo Nacional de Ciencias Naturales,  
Madrid, Spain BXX2000-1258-C03-01.
- 1999 – 2000 “Modelos de dimorfismo sexual en Homo sapiens y su aplicación a los  
homínidos del Pleistoceno Medio de Atapuerca”. PI: Dr. José M. Bermúdez de  
Castro, Museo Nacional de Ciencias Naturales, Madrid, Spain; Institute of  
Anthropology, University of Coimbra; Portugal; MEC: HP: 1995-0031.
- 1998 – 2001 “El Pleistoceno de la Sierra de Atapuerca: Paleobiología de las primeras  
ocupaciones humanas”. PI: Dr. José M. Bermúdez de Castro, Museo Nacional  
de Ciencias Naturales, Madrid, Spain; DGICYT PB 96-1026-C03-02.
- 1997 – 1999 “Functional adaptations of primate hand and wrist bones”. PI: Dr. Margit  
Berner and Dr. Gabriele Macho, Natural History Museum, Vienna, Austria, FWF  
P12373-med.

### *Fieldwork*

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- 1999-2005 Paleoanthropological fieldwork at the Atapuerca sites (Burgos), Sima del  
Elefante (Trinchera del Ferrocarril)
- 2006-2010 Paleoanthropological fieldwork at the El Sidrón Cave system, Piloña, (Asturias)
- 2006-2011 Paleontological fieldwork at La Boella(Tarragona), excavation work at fluvial  
surface sites El Forn and La Mina

### Publication metrics

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Research papers in SCI-journals	96
<i>h</i> -index, (Google scholar, March 2019)	37
Number of citations, (Google scholar, March 2019)	5144

### Publication summary

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Contributions in peer-reviewed journals	105
Contributions in peer-reviewed books	10
Peer-reviewed meeting abstracts	33
Other publications	23
Scientific presentations	53

### Full list of publications

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#### Contributions in peer-reviewed journals

1. **Bastir M**, García-Martínez D, Torres-Tamayo N, Barash A, Villa C, Sanchis-Gimeno JA, Riesco-López A, Beyer B, Torres-Sánchez I, García-Río F et al. . submitted. Rib cage anatomy in *H. erectus* suggests step-wise evolution of endurance capacities.
2. **Bastir M**, Daniel García-Martínez, Nicole Torres-Tamayo, Palancar CA, Alberto Riesco-López, Pedro Osborne-Márquez, Francisco Javier Fernández-Pérez, María Ávila, and López-Gallo P. in revision. 3D printing and measuring: applications and methods in a Virtual Morphology Lab. *Journal of Anthropological Sciences*.
3. **Bastir M**. 2019. Big Choanae, Larger Face: Scaling Patterns between Cranial Airways in Modern Humans and African Apes and Their Significance in Middle and Late Pleistocene Hominin Facial Evolution. *Bull Mem Soc Anthropol Par*: in press.
4. García-Martínez D, **Bastir M**, Torres-Tamayo N, O'Higgins P, Torres-Sánchez I, García-Río F, and Heuzé Y. 2019. 3D analysis of sexual dimorphism in ribcage kinematics of modern humans. *American Journal of Physical Anthropology*:in press.
5. Rosas A, **Bastir M**, and Alarcón JA. 2019. Tempo and mode in the Neandertal evolutionary lineage: A structuralist approach to mandible variation. *Quaternary Science Reviews* (in press)

6. **Bastir**, M. (2018). Pulling faces. *Nature Ecology and Evolution*, 2(6), 923-924. doi:10.1038/s41559-018-0550-2
7. Williams SA, Meyer MR, Nalla S, García-Martínez D, Nalley TK, Eyre J, Prang TC, **Bastir** M, Schmid P, Churchill SE et al. . 2018. The vertebrae, ribs, and sternum of *Australopithecus sediba* *PaleoAnthropology (Special Issue: Australopithecus sediba)*:156-223.
8. García-Martínez, D., Campo Martín, M., González Martín, A., Cambra-Moo, Ó., Barash, A., & **Bastir**, M. (2018). Reevaluation of 'endocostal ossifications' on the Kebara 2 neanderthal ribs. *Journal of Human Evolution*, 122, 33-37. doi:10.1016/j.jhevol.2018.04.011
9. García-Martínez, D., Nalla, S., Ferreira, M. T., Guichón, R. A., D'Angelo del Campo, M. D., & **Bastir**, M. (2018). Eco-geographic adaptations in the human ribcage throughout a 3D geometric morphometric approach. *American Journal of Physical Anthropology*, 166(2), 323-336. doi:10.1002/ajpa.23433
10. García-Martínez, D., Radovčić, D., Radovčić, J., Cofran, Z., Rosas, A., & **Bastir**, M. (2018). Over 100 years of krapina: New insights into the neanderthal thorax from the study of rib cross-sectional morphology. *Journal of Human Evolution*, 122, 124-132. doi:10.1016/j.jhevol.2018.05.009
11. Gómez-Olivencia, A., Barash, A., García-Martínez, D., Arlegi, M., Kramer, P., **Bastir**, M., & Been, E. (2018). 3D virtual reconstruction of the kebara 2 neandertal thorax. *Nature Communications*, 9(1), 4387. doi:10.1038/s41467-018-06803-z
12. Kochiyama, T., Ogiwara, N., Tanabe, H. C., Kondo, O., Amano, H., Hasegawa, K., **Bastir**, M. . . Akazawa, T. (2018). Reconstructing the neanderthal brain using computational anatomy. *Scientific Reports*, 8(1) doi:10.1038/s41598-018-24331-0
13. Meyer, M. R., Woodward, C., Tims, A., & **Bastir**, M. (2018). Neck function in early hominins and suspensory primates: Insights from the uncinat process. *American Journal of Physical Anthropology*, 166(3), 613-637. doi:10.1002/ajpa.23448
14. Rodriguez-Perez, F. J., Rosas, A., García-Martínez, D., **Bastir**, M., García-Tabernerero, A., Estalrrich, A., . . . Pastor, J. F. (2018). A 3D form comparative analysis of the neandertal glenoid fossa in the context of the genus homo. *Quaternary International*, 481, 91-100. doi:10.1016/j.quaint.2017.07.031
15. Rosas, A., Ríos, L., Estalrrich, A., Liversidge, H., García-Tabernerero, A., Huguet, R., **Bastir**, M. . . Dean, C. (2018). Response to comment on "The growth pattern of neandertals, reconstructed from a juvenile skeleton from el sidrón (spain)". *Science*, 359(6380) doi:10.1126/science.aar3820
16. Torres-Tamayo, N., García-Martínez, D., Lois Zlolniski, S., Torres-Sánchez, I., García-Río, F., & **Bastir**, M. (2018). 3D analysis of sexual dimorphism in size, shape and breathing kinematics of human lungs. *Journal of Anatomy*, 232(2), 227-237. doi:10.1111/joa.12743
17. Torres-Tamayo, N., García-Martínez, D., Nalla, S., Barash, A., Williams, S. A., Blanco-Pérez, E., . . . **Bastir**, M. (2018). The torso integration hypothesis revisited in homo sapiens: Contributions to the understanding of hominin body shape



evolution. *American Journal of Physical Anthropology*, 167(4), 777-790.  
doi:10.1002/ajpa.23705

18. **Bastir M**, García-Martínez D, Williams SA, Recheis W, Torres-Sánchez I, García Río F, Oishi M, and Ogiwara N. 2017. 3D geometric morphometrics of thorax variation and allometry in Hominoidea. *Journal of Human Evolution* 113:10-23.
19. Williams SA, García-Martínez D, **Bastir M**, Meyer MR, Nalla S, Hawks J, Schmid P, Churchill SE, and Berger LR. 2017. The vertebrae and ribs of *Homo naledi*. *Journal of Human Evolution* 104:136-154.
20. **Bastir M**, García-Martínez D, Torres-Tamayo N, Sanchis-Gimeno JA, O'Higgins P, Utrilla C, Torres Sánchez I, and García Río F. 2017. In Vivo 3D Analysis of Thoracic Kinematics: Changes in Size and Shape During Breathing and Their Implications for Respiratory Function in Recent Humans and Fossil Hominins. *Anatomical Record* 300(2):255-264.
21. **Bastir M**, García Martínez D, Ríos L, Higuero A, Barash A, Martelli S, García Tabernero A, Estalrich A, Huguet R, de la Rasilla M et al. . 2017. Three-dimensional morphometrics of thoracic vertebrae in Neandertals and the fossil evidence from El Sidrón (Asturias, Northern Spain). *Journal of Human Evolution* 108:47-61.
22. Rodríguez-Perez FJ, Rosas A, García-Martínez D, **Bastir M**, García-Tabernero A, Estalrich A, Huguet R, and Pastor JF. 2017. A 3D form comparative analysis of the Neandertal glenoid fossa in the context of the genus *Homo*. *Quaternary International*.
23. Rosas A, Ferrando A, **Bastir M**, García-Tabernero A, Estalrich A, Huguet R, García-Martínez D, Pastor JF, and de la Rasilla M. 2017a. Neandertal talus bones from El Sidrón site (Asturias, Spain): A 3D geometric morphometrics analysis. *American Journal of Physical Anthropology* 164(2):394-415.
24. Rosas A, Ríos L, Estalrich A, Liversidge H, García-Tabernero A, Huguet R, Cardoso H, **Bastir M**, Lalueza-Fox C, De La Rasilla M et al. . 2017b. The growth pattern of Neandertals, reconstructed from a juvenile skeleton from El Sidrón (Spain). *Science* 357(6357):1282-1287.
25. Been E, Gómez-Olivencia A, Shefi S, Soudack M, **Bastir M**, and Barash A. 2017. Evolution of Spinopelvic Alignment in Hominins. *Anatomical Record* 300(5):900-911.
26. Bruner E, Pereira-Pedro AS, and **Bastir M**. 2017. Patterns of morphological integration between parietal and temporal areas in the human skull. *Journal of Morphology* 278(10):1312-1320.
27. García-Martínez D, **Bastir M**, Huguet R, Estalrich A, García-Tabernero A, Ríos L, Cunha E, Rasilla MDL, and Rosas A. 2017. The costal remains of the El Sidrón Neanderthal site (Asturias, northern Spain) and their importance for understanding Neanderthal thorax morphology. *Journal of Human Evolution* 111:85-101.

28. García-Martínez D, Gil OG, Cambra-Moo O, Canillas M, Rodríguez MA, **Bastir M**, and Martín AG. 2017. External and internal ontogenetic changes in the first rib. *American Journal of Physical Anthropology* 164(4):750-762.
29. Pérez-Criado L, Rosas A, **Bastir M**, and Pastor JF. 2017. Humeral laterality in modern humans and Neanderthals: A 3D geometric morphometric analysis. *Anthropological Science* 125(3):117-128.
30. Ríos L, Mata-Escolano F, Blanco-Pérez E, Llidó S, **Bastir M**, and Sanchis-Gimeno JA. 2017. Acute headache attributed to whiplash in arcuate foramen and non-arcuate foramen subjects. *European Spine Journal* 26(4):1262-1265.
31. Ríos L, Palancar C, Pastor F, Llidó S, Sanchis-Gimeno JA, and **Bastir M**. 2017. Shape change in the atlas with congenital midline non-union of its posterior arch: a morphometric geometric study. *Spine Journal* 17(10):1523-1528.
32. Sanchis-Gimeno JA, Alonso L, Rahhal M, **Bastir M**, Perez-Bermejo M, and Belda-Salmeron L. 2017a. Corneal thickness differences between type 2 diabetes and non-diabetes subjects during preoperative laser surgery examination. *Journal of Diabetes and its Complications* 31(1):209-212.
33. Sanchis-Gimeno JA, Perez-Bermejo M, Rios L, Llido S, **Bastir M**, Blanco-Perez E, and Mata-Escolano F. 2017. Analysis of the relationship between the double transverse foramen and the possibility of developing clinical symptoms after whiplash. *Clinical Anatomy* 30(6):761-766.
34. García-Martínez D, Torres-Tamayo N, Torres-Sanchez I, García-Río F, and **Bastir M**. 2016. Morphological and functional implications of sexual dimorphism in the human skeletal thorax. *American Journal of Physical Anthropology* 161(3):467-477.
35. Torres-Tamayo N, García-Martínez D, Lois Zloliniski S, Torres-Sánchez I, García-Río F, and **Bastir M**. 2018. 3D analysis of sexual dimorphism in size, shape and breathing kinematics of human lungs. *Journal of anatomy* 232(2):227-237.
36. Varea-Sánchez M, Tourmente M, **Bastir M**, and Roldan ERS. 2016. Unraveling the sperm bauplan: Relationships between sperm head morphology and sperm function in rodents. *Biology of Reproduction* 95(1).
37. Rosas, A., Rodriguez-Perez, F.J., **Bastir, M.**, Estalrich, A., Huguet, R., García-Taberner, A., Pastor, J.F., de la Rasilla, M., 2016. Adult Neandertal clavicles from the El Sidrón site (Asturias, Spain) in the context of Homo pectoral girdle evolution. *Journal of Human Evolution* 95, 55-67.
38. García-Martínez, D., Recheis, W., **Bastir, M.**, 2016. Ontogeny of 3D rib curvature and its importance for the understanding of human thorax development. *American Journal of Physical Anthropology* 159, 423-431.
39. Amano H, Kikuchi T, Morita Y, Kondo O, Suzuki H, Ponce de León MS, Zollikofer CPE, **Bastir M**, and Ogihara N. 2015. Virtual Reconstruction of the Neanderthal Amud 1 Cranium. *American Journal of Physical Anthropology* 158:158-197.

40. Rosas A, Pérez-Criado L, **Bastir M**, Estalrich A, Huguet R, García-Taberner A, Pastor JF, and de la Rasilla M. 2015. A geometric morphometrics comparative analysis of Neandertal humeri (epiphyses-fused) from the El Sidrón cave site (Asturias, Spain). *Journal of human evolution* 82:51-66.
41. **Bastir M**, Garcia-Martinez D, Estalrich A, Garcia-Taberner A, Huguet R, Rios L, Barash A, Recheis W, de la Rasilla M, and Rosas A. 2015. The relevance of the first ribs of the El Sidron site (Asturias, Spain) for the understanding of the Neandertal thorax. *Journal of Human Evolution* 80:64-73.
42. **Bastir M**, Higuero A, Ríos L, and García Martínez D. 2014. Three-dimensional analysis of sexual dimorphism in human thoracic vertebrae: implications for the respiratory system and spine morphology. *American Journal of Physical Anthropology* 155(4):513-521.
43. Rosas A, Peña-Melián A, García-Taberner A, **Bastir M**, and De La Rasilla M. 2014. Temporal Lobe Sulcal Pattern and the Bony Impressions in the Middle Cranial Fossa: The Case of the El Sidrón (Spain) Neandertal Sample. *The Anatomical Record* 297:2331-2341.
44. Vallverdú, J., Saladié, P., Rosas, A., Huguet, R., Cáceres, I., Mosquera, M., Garcia-Taberner, A., Estalrich, A., Lozano-Fernández, I., Pineda-Alcalá, A., Carrancho, Á., Villalaín, J.J., Bourlès, D., Braucher, R., Lebatard, A., Vilalta, J., Esteban-Nadal, M., Bennàsar, M.L., **Bastir, M.**, López-Polín, L., Ollé, A., Vergés, J.M., Ros-Montoya, S., Martínez-Navarro, B., García, A., Martinell, J., Expósito, I., Burjachs, F., Agustí, J., Carbonell, E., 2014. Age and Date for Early Arrival of the Acheulian in Europe (Barranc de la Boella, la Canonja, Spain). *PLoS ONE* 9, e103634.
45. Ornelas-García, C.P., **Bastir, M.**, Doadrio, I., 2014. Morphometric variation between two morphotypes within the *Astyanax* Baird and Girard, 1854 (Actinopterygii: Characidae) genus, From a Mexican tropical lake. *Journal of Morphology*, 275 (7), pp. 721-731
46. García Martínez D, Barash A, Recheis W, Torres Sanchez I, Garcia Rio F, and **Bastir M**. in press. On the chest size of Kebara 2. *Journal of Human Evolution*. 70 (1), pp. 69-72
47. **Bastir M**, Böhme M, Sanchiz B. in press. Middle Miocene remains of *Alytes* (Anura, Alytidae) as an example of the unrecognised value of fossil fragments for evolutionary morphology studies. *Journal of Vertebrate Paleontology*. 34 (1), pp. 69-79
48. Varea Sánchez M, **Bastir M**, and Roldan ERS. 2013. Geometric morphometrics of rodent sperm head shape. *PLoS ONE* 8(11):e80607-e80607.
49. Esteve-Altava B, Marugàn-Lobón J, Botella H, **Bastir M**, and Rasskin-Gutman D. 2013. Grist for Riedl's mill: A network model perspective on the integration and modularity of the human skull. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*: 320 (8), pp. 489-500
50. Alarcon JA, **Bastir M**, García-Espona I, Menéndez-Núñez M, and Rosas A. in press. Morphological integration of mandible and cranium: Orthodontic implications. *Archives of Oral Biology*. 59 (1), pp. 22-29

51. Coquerelle M, Prados-Frutos J, Rojo R, Mitteröcker P, and **Bastir** M. 2013. Short faces, big tongues: Developmental origin of the human chin. *PLoS ONE* 8(11):e81287
52. **Bastir** M, García Martínez D, Recheis W, Barash A, Coquerelle M, Rios L, Peña-Melián Á, García Río F, and O'Higgins P. 2013. Differential Growth and Development of the Upper and Lower Human Thorax. *PLoS ONE* 8(9):e75128.
53. **Bastir** M, and Rosas A. 2013. Cranial airways and the integration between the inner and outer facial skeleton in humans. *American Journal of Physical Anthropology* 152(2):287-293.
54. Dean MC, Rosas A, Estalrrich A, García-Taberner A, Huguet R, Lalueza-Fox C, **Bastir** M, and de la Rasilla M. 2013. Longstanding dental pathology in Neandertals from El Sidrón (Asturias, Spain) with a probable familial basis. *Journal of Human Evolution* 64(6):678-686.
55. Rosas A, Estalrrich A, García-Taberner A, **Bastir** M, García-Vargas S, Sánchez-Meseguer A, Huguet R, Lalueza-Fox C, Peña-Melián Á, Kranioti EF et al. . 2012. The Neandertals from El Sidrón (Asturias, Spain). Updating of a new sample. *Les Néandertaliens d'El Sidrón (Asturies, Espagne) Actualisation d'un nouvel échantillon. L'Anthropologie* 116(1):57-76.
56. Hardy K, Buckley S, Collins MJ, Estalrrich A, Brothwell D, Copeland L, García-Taberner A, García-Vargas S, De La Rasilla M, Lalueza-Fox C, Huguet, R., **Bastir**, M. et al.. 2012. Neanderthal medics? Evidence for food, cooking, and medicinal plants entrapped in dental calculus. *Natur-wissenschaften* 99(8):617-626.
57. **Bastir**, M. (Book review) *The evolution of the human head* by Dan Lieberman. *American Journal of Physical Anthropology* 147(3):508-509.
58. **Bastir** M, Rosas A, Gunz P, Pena-Melian A, Manzi G, Harvati K, Kruszynski R, Stringer C, and Hublin J-J. 2011. Evolution of the base of the brain in highly encephalized human species. *Nature Communications* 2:588.
59. **Bastir** M, Godoy-Alonso P, and Rosas A. Common features of sexual dimorphism in the cranial airways of different human populations. *American Journal of Physical Anthropology* 146:414-422
60. Peña-Melián A, Rosas A, García-Taberner A, **Bastir** M, de la Rasilla, M, Fortea J.. Paleoneurology of Two New Neandertal Occipitals from El Sidrón (Asturias, Spain) in the Context of Homo Endocranial Evolution. *Anatomical Record*. 294:1370-1381.
61. Lalueza-Fox C, Rosas A, Estalrrich A, Gigli E, Campos PF, García-Taberner A, García-Vargas S, Sánchez-Quinto F, Ramírez O, Civit S, **Bastir** M, Huguet R, Santamaría D, Gilbert MTP, Willerslev E, de la Rasilla M (2010) Genetic evidence for patrilineal mating behaviour among Neandertal groups. *Proceedings of the National Academy of Sciences USA*, 108:250-253.
62. Alarcon JA, **Bastir** M, and Rosas A (2009) Chin cup modifies the shape of the mandible in growing prognathic patients. *American Journal of Orthodontics and Dentofacial Orthopedics*. 140:38-43

63. **Bastir**, M., Rosas, A., Stringer, C., Cuétara, J.M.d.I., Kruszynski, R., Weber, G.W., Ross, C.F., Ravosa, M.J., en revisión. The effects of brain and facial size on the evolution of the basicranium in *Homo*. *Journal of Human Evolution* (58), 424 (2010)
64. **Bastir M**, Rosas A, Tabernero AG, Peña-Melián A, Estalrriich A, de la Rasilla M, and Fortea J. 2010. Comparative morphology and morphometric assessment of the Neandertal occipital remains from the El Sidrón site (Asturias, Spain: years 2000-2008). *Journal of Human Evolution* 58:68-78.
65. Kranioti EF, Rosas A, García-Vargas S, Estalrriich A, **Bastir M**, and Peña-Melián Á (2009) Remodeling patterns of occipital growth: A preliminary report. *Anatomical Record* 292(11):1764-1770.
66. Kranioti E, **Bastir**, M, Sánchez-Meseguer A, Rosas A (2009) The application of geometric-morphometrics in sex identification of the humerus for forensic purposes. *Forensic Science International* 189(1-3):111.e111-111.e118.
67. Alarcon, J.A., **Bastir**, M., Rosas, A., Martin, C., 2009. Geometric morphometric analysis of the effects of chin cup treatment. *Journal of Dental Research* 88B,81.
68. **Bastir M**, Rosas A. 2009. Mosaic evolution of the basicranium in *Homo* and its relation to modular development. *Evolutionary Biology* 36:57-70.
69. Cunha C, M **Bastir**, M. M. Coelho, Doadrio I. 2009. Body shape evolution among different ploidy levels of the *S. alburnoides* hybrid complex (Teleostei, Cyprinidae). *Journal of Evolutionary Biology* 22: 718-728.
70. Bruner E, and **Bastir M** (2008) Digital Morphology: modelling anatomy and evolution. *Journal of Anthropological Sciences* 86:3-5.
71. **Bastir M** (2008) A systems-model for the morphological analysis of integration and modularity in human craniofacial evolution. *Journal of Anthropological Sciences* 86:37-58.
72. **Bastir M**, Sobral PG, Kuroe K, Rosas A. 2008. Human craniofacial sphericity: A simultaneous analysis of frontal and lateral cephalograms using geometric morphometrics and partial least squares analysis. *Archives of Oral Biology* 53(4):295-303.
73. **Bastir M**, Rosas A, Lieberman DE, O'Higgins P. 2008. Middle cranial fossa anatomy and the origins of modern humans. *Anatomical Record* 291(2):130-140.
74. Rosas A, **Bastir M**, Alarcón JA, Kuroe K. 2008. Thin-plate spline analysis of the cranial base in African, Asian and European populations and its relationship with different malocclusions. *Archives of Oral Biology* 291(2):130-140.
75. Rosas A, Peña A, Garcia-Tabernero A, **Bastir M**, De la Rasilla M, Fortea J. 2008. Endocranial occipito-temporal anatomy of the SD-1219 fossil from the El Sidrón Neandertals. *Anatomical Record* 291(5):502-12.
76. **Bastir M**, O'Higgins P, Rosas A. 2007. Facial ontogeny in Neanderthals and modern humans. *Proceedings of the Royal Society B: Biological Sciences* 274:1125-1132.

77. Gómez-Robles A, Martínón-Torres M, Bermúdez de Castro JM, Margvelashvili A, **Bastir** M, Arsuaga JL, Pérez-Pérez A, Estebaranz F. 2007. A geometric morphometric analysis of hominin upper first molar shape. *Journal of Human Evolution* 53(3):272-85.
78. Rincon P, **Bastir** M, Grossman GD. 2007. Form and performance. Body shape and prey capture success in four drift-feeding minnows. *Oecologia* 152(2):345-355.
79. **Bastir** M, Rosas A. 2006. Correlated variation between the lateral basicranium and the face: A geometric morphometric study in different human groups. *Archives of Oral Biology* 51(9):814-24.
80. O'Higgins P, **Bastir** M, Kupczik K. 2006. Shaping the human face. *International Congress Series* 1296:55-73.
81. **Bastir** M, O'Higgins P, Rosas A. 2006. Human Evolution: Relationships between the basicranium and the face. *Annals of Human Biology* 32(5):790.
82. **Bastir** M, Rosas A, O'Higgins P. 2006. Craniofacial levels and the morphological maturation of the human skull. *Journal of Anatomy* 209(5):637-54.
83. Martínón-Torres M, **Bastir** M, Bermúdez de Castro JM, Gómez A, Sarmiento S, Muela A, Arsuaga, J. L. 2006. Hominin lower second premolar morphology: evolutionary inferences through geometric morphometric analysis. *Journal of Human Evolution* 50(5):523-533.
84. Rosas A, Martínez-Maza C, **Bastir** M, García-Taberner A, Lalueza-Fox C, Huguet R, Ortiz JE, Julia R, Soler V, Torres Td and others. 2006d. Paleobiology and comparative morphology of a late Neandertal sample from El Sidrón, Asturias, Spain. *Proceedings of the National Academy of Sciences, USA* 103:19266-19271.
85. Lalueza-Fox C, Krause J, Caramelli D, Catalan G, Milano L, Sampietro L, Calafell F, Martínez-Maza C, **Bastir** M, García-Taberner A and others. 2006. Mitochondrial DNA of an Iberian Neandertal suggests a population affinity with other European Neandertals. *Current Biology* 16(16):R629-30.
86. Lalueza-Fox C, Sampietro ML, Caramelli D, Puder Y, Martina Lari, Francesc Calafell, Martínez-Maza C, **Bastir** M, Fortea J, Rasilla Mdl and others. 2005. Neandertal Evolutionary Genetics; Mitochondrial DNA Data from the Iberian Peninsula. *Molecular Biology and Evolution* 22(4):1077-1081.
87. **Bastir** M, Rosas A. 2005. Hierarchical nature of morphological integration and modularity in the human posterior face. *American Journal of Physical Anthropology* 128(1):26-34.
88. Carbonell E, Bermudez de Castro JM, Arsuaga JL, Allue E, **Bastir** M, Benito A, Caceres I, Canals T, Diez JC, van der Made J and others. 2005. An Early Pleistocene hominin mandible from Atapuerca-TD6, Spain. *Proceedings of the National Academy of Science* 102(16):5674-5678.
89. **Bastir** M, Rosas A, Kuroe K. 2004. Petrosal orientation and mandibular ramus breadth: Evidence of a developmental integrated petroso-mandibular unit. *American Journal of Physical Anthropology* 123(4):340-350.

90. **Bastir M, Rosas A.** 2004. Comparative ontogeny in humans and chimpanzees: Similarities, differences and paradoxes in postnatal growth and development of the skull. *Annals of Anatomy* 186(5-6):503-509.
91. **Bastir M, Rosas A.** 2004. Facial heights: Evolutionary relevance of postnatal ontogeny for facial orientation and skull morphology in humans and chimpanzees. *Journal of Human Evolution* 47:359-381.
92. Marugán-Lobón J, **Bastir M.** 2004. Common Patterns of Morphological Variation in the Skull of Vertebrates: Invariant Processes? *Journal of Morphology* 260(3):310.
93. Rosas A, **Bastir M.** 2004. Geometric morphometric analysis of allometric variation in the mandibular morphology from the hominids of Atapuerca, Sima de los Huesos Site. *The Anatomical Record Part A* 278A:551-560.
94. Rosas A, **Bastir M,** Martínez Maza C, Bermúdez de Castro JM. 2002. Sexual Dimorphism in the Atapuerca-SH hominids. The evidence from the mandibles. *Journal of Human Evolution* 42:451-474.
95. Rosas A, **Bastir M.** 2002. Thin-Plate Spline Analysis of Allometry and Sexual Dimorphism in the Human Craniofacial Complex. *American Journal of Physical Anthropology* 117:236-245.
96. **Bastir M, Rosas A.** 2001. Thin-plates spline analysis of human craniofacial sexual dimorphism. *American Journal of Physical Anthropology* 114(S32):36-37.
97. Bermúdez de Castro JM, Sarmiento S, Cunha E, Rosas A, **Bastir M.** 2001. Dental size variation in the Atapuerca-SH Middle Pleistocene hominids. *Journal of Human Evolution* 41:195-209.

#### **Contributions in peer-reviewed books**

98. **Bastir, M.,** in revision. The functional anatomy and structural integration of the upper airways in Neandertals: nasal cavity, pharynx, and larynx in: Maddux, S., Cowgill, L. (Eds.), *Neandertal Skeletal Anatomy*. Cambridge University Press.
99. **Bastir M,** Torres-Tamayo N, Palancar CA, Lois Zolniski S, García-Martínez D, Riesco-López A, Vidal D, Blanco-Pérez E, Barash A, Nalla S et al. . 2019. Geometric Morphometric Studies in the Human Spine. In: Been E, Gómez- Olivencia A, and Kramer PA, editors. *The human spine*: Springer Verlag. p in press.
100. **Bastir, M.,** 2018. Back to Basics: Morphological Analysis in Paleoanthropology *Biological Theory*, MIT-press (Massachusetts Institute of Technology) p 205-227.
101. García-Martínez D, Riesco A, and **Bastir M.** 2018. Missing element estimation in sequential anatomical structures: the case of the human thoracic vertebrae and its potential application to the fossil record. In: Carme Rissech LL, Jordi Nadal, Josep Maria Fullola, editor. *Geometric morphometrics Trends in biology, paleobiology and archaeology: Seminari d'Estudis i Recerques Preshistoriques*, Universitat de Barcelona (SERP), Societat Catalana d'Arqueologia (SCA). p 93-97.
102. Megía I, Burgos M, Sanmiguel Rojas E, Torres-Tamayo N, García-Martínez D, Piqueras FM, and **Bastir M.** 2018. Sexual dimorphism of nasal airways in modern

humans. In: Carme Rissech LL, Joordi Nadal, Josep Maria Fullola, editor. Geometric morphometrics Trends in biology, paleobiology and archaeology: Seminari d'Estudis i Recerques Preshistoriques, Universitat de Barcelona (SERP), Societat Catalana d'Arqueologia (SCA). p 53-62.

103. Peña-López L, Torres-Tamayo N, García-Martínez D, and **Bastir M**. 2018. Craniofacial morphological variation in humans from the Southern hemisphere: a 3D geometric morphometric approach. In: Carme Rissech LL, Joordi Nadal, Josep Maria Fullola, editor. Geometric morphometrics Trends in biology, paleobiology and archaeology: Seminari d'Estudis i Recerques Preshistoriques, Universitat de Barcelona (SERP), Societat Catalana d'Arqueologia (SCA). p 41-52.
104. Martínón-Torres M, **Bastir M**, JM Bermúdez de Castro, A Gómez, S Sarmiento, A Muela, Lozano M, Arsuaga J. Gran Dolina-TD6 and Sima de los Huesos dental samples: an approach to the evolutionary scenario of the first human settlement in Europe. In: Hublin J, Bailey S, editors; 2007; Leipzig. Springer Verlag. p 65-79.
105. Rosas A, M. **Bastir**, C. Martínez-Maza, García-Tabernero A, Lalueza-Fox C. 2006. Inquiries into Neanderthal cranio-facial development and evolution: 'accretion' vs 'organismic' models. In: Harrison T, Harvati K, editors. Neanderthals Revisited. New York University: Springer Verlag. p 38-69.
106. **Bastir M**, Rosas A, Sheets DH. 2005. The morphological integration of the hominoid skull: A Partial Least Squares and PC analysis with morphogenetic implications for European Mid-Pleistocene mandibles. In: Slice D, editor. Modern Morphometrics in Physical Anthropology. New York: Kluwer Academic/Plenum Publishers. p 265-284.
107. **Bastir M**, Rosas A. 2004. Geometric morphometrics in paleoanthropology: Mandibular shape variation, allometry, and the evolution of modern human skull morphology. In: Elewa A, editor. Morphometrics in Paleontology. Berlin, Wien: Springer. p 231-241.

#### Peer-reviewed meeting abstracts

108. **Bastir M**, García Martínez D, Spoor F, and Williams SA. 2018. Thoracic vertebral morphology of KNM-WT 15000. European Society for the Study of Human Evolution. Faro: European Society for the Study of Human Evolution. p 11.
109. García-Martínez D, Torres-Tamayo N, Torres-Sanchez I, García-Río F, and **Bastir M**. 2018. Estimation of total lung capacity (TLC) in Neanderthals with physiological implications. European Society for the Study of Human Evolution. Faro: European Society for the Study of Human Evolution. p 67.
110. Morales N, Díaz A, Manríquez G, **Bastir M**, and Toro-Ibacache V. 2018. The importance of the environment in the modification of craniofacial architectural relationships in *Homo sapiens*. European Society for the Study of Human Evolution. Faro: European Society for the Study of Human Evolution. p 134.
111. Palancar CA, García-Martínez D, Barash A, Radovčić D, Antonio Rosas, and **Bastir M**. 2018. Reconstruction of the atlas (C1) of the La Chapelle-aux-Saints Neanderthal through geometric morphometric techniques. European Society for



the Study of Human Evolution. Faro, Portugal: Proceedings of the European Society for the Study of Human Evolution. p 146.

112. Meyer MR, Williams SA, García-Martínez D, and **Bastir M**. 2018. Toward Solving the Puzzle of Thorax Shape Variation Among Early Hominins. *American Journal of Physical Anthropology* 165:176-176.
113. **Bastir M**, Garcia-Martinez D, Williams SA, Meyer MR, Nalla S, Schmid P, Barash A, Oishi M, Ogihara N, Churchill SE et al. . 2017. Geometric morphometrics of hominoid thoraces and its bearing for reconstructing the ribcage of *H. naledi*. *American Journal of Physical Anthropology* 162:111-112.
114. García Martínez D, Spoor F, Nalla S, Torres-Tamayo N, Cunha E, Haeusler M, and **Bastir M**. 2017. 3D growth changes in ribs during late ontogeny in hominids and its importance for the thorax of KNM-WT 15000: a preliminary approach. *European Society for the Study of Human Evolution. Leiden, Netherlands: Proceedings of the European Society for the Study of Human Evolution. p 72.*
115. Williams SA, Garcia-Martinez D, Meyer MR, Nalla S, Schmid P, Hawks J, Churchill SE, Berger LR, and Bastir M. 2016. The axial and thoracic skeleton of *Homo naledi*. *American Journal of Physical Anthropology* 161:195
116. **Bastir M**, Daniel Garcia Martínez, Jenny Eyre, Scott A. Williams, Shahed Nallah, Motoharo Oishi, Naomichi Ogihara, Steve Churchill, Lee Berger, and Schmid P. 2016. Preliminary findings of the 3D analysis of the costal remains of *Australopithecus. sediba*. *Paleoanthropology Society. Atlanta. P.9*
117. García-Martínez D, Spoor F, and **Bastir M**. 2016. 3D assessment of rib curvatures in KNM-WT 15000. *Paleoanthropology Society. Atlanta. p 45.*
118. Torres-Tamayo N, García Martínez D, Utrilla C, Sanchez-Torres I, García Río F, and **Bastir M**. 2016. Geometric morphometrics of sexual dimorphism and pulmonary kinematics in *Homo Sapiens*". *American Journal of Physical Anthropology* 161:145
119. **Bastir M**, García-Martínez D, and Barash A. 2015. The 3D structure of thoracic vertebrae and their significance for size and shape of the ribcage in Neandertals. *ESHE. London: PESHE. p 44.*
120. **Bastir M**, García-Martínez D, Williams SA, Meyer MR, Nalla S, Schmid P, Barash A, Oishi M, Ogihara N, Churchill SE et al. . 2016. A geometric morphometric reconstruction of the thorax of *H. naledi*. *ESHE Madrid. PESHE p 93.*
121. García-Martínez D, Martelli S, **Bastir M**, and O'Higgins P. 2015. Neanderthal lumbar lordosis assessed by 3D geometric morphometrics of vertebral morphology. *ESHE. London: PESHE. p 95.*
122. Bastir M, García-Martínez D, and Barash A. 2015. The 3D structure of thoracic vertebrae and their significance for size and shape of the ribcage in Neandertals. *ESHE - 5th Annual Meeting. London: PESHE. p 42.*
123. Gómez-Olivencia A, Barash A, Arlegi M, Martínez DG, Patricia A. Kramer, **Bastir M**, and Been E. 2015. 3D virtual reconstruction of the Kebara 2 thorax. *ESHE. London. p 100.*

124. **Bastir**, M., García-Martínez, D., Barash, A., Been, E., Torres, I., García Río, F., 2014. Thorax kinematics and the reconstruction of body models in hominin evolution, European Society for the Study of Human Evolution, Florence, p. 35.
125. Been, E., **Bastir**, M., Barash, A., 2014. Spino-pelvic alignment, European Society for the Study of Human Evolution, Florence, p. 58.
126. García Martínez, D., **Bastir**, M., Estalrrich, A., García Tabernero, A., Huguet, R., Cunha, E., de la Rasilla, M., Rosas, A., 2014. Preliminary study of the head-neck complex of Neanderthal ribs from the El Sidrón site (Asturias, Spain), in: PESHE (Ed.). Society for the Study of Human Evolution, Florence, p. 76.
127. **Bastir** M, García-Martínez D, A. Estalrrich, García Tabernero A, Huguet R, Barash A, Recheis W, de la Rasilla M, and A R. 2013. A preliminary assessment of the thoracic remains of the El Sidron Neandertal (Asturias, Spain). In: PESHE, editor. 3rd annual meeting European Society for the Study of Human Evolution. Vienna. p 38.
128. Coquerelle M, Prados-Frutos J, Mitteröcker P, and **Bastir** M. 2013. 3D analysis of the jaw-basicranium-cervical skeleton in fetal and infant humans and chimpanzees. Implications for shaping the mandibular symphysis. *American Journal of Physical Anthropology* S56:102.
129. García-Martínez D, **Bastir** M, Recheis W, Barash A. 2013. Dos barriles diferentes para dos primates diferentes: Morfometría geométrica 3D de Sliding semilandmarks del tórax de la superfamilia *Hominoidea*. *En libro de resúmenes del XVIII Congreso de la Sociedad Española de Antropología Física*. Pag. 39.
130. Coquerelle M, Prados-Frutos JC, Rojo R, Murillo-Gonzales JA, Mitteröcker P, and **Bastir** M. 2013. Fetal development of the modern human chin: The 3D shape variation is bounded to spatial arrangement of the hyoid bone, the tongue and suprahyoid muscles. In: PESHE, editor. 3rd Annual Meeting, European Society for the Study of Human Evolution. Vienna. p 38.
131. **Bastir** M, García-Martínez D, Recheis W, Barash A, Coquerelle M, Rios L, Peña A, O'Higgins P. 2013. 3D analysis of human ribcage ontogeny. *American Journal of Physical Anthropology*. S56:75.
132. Estalrrich A, Rosas A, García-Tabernero A, Huguet R, **Bastir** M, de la Rasilla M. 2012. Handedness on 11 Neanderthals from the El Sidrón cave (Asturias, Spain): Evidence from the non-dietary dental wear. In: Proceedings of the ESHE, 2nd Annual Meeting of the ESHE. Bordeaux (France). p 74.
133. Bastir, M., & Rosas, A. (2011). Nasal form and function in Middle Pleistocene human facial evolution. A first approach. *American Journal of Physical Anthropology*, 144(S52), 83.
134. **Bastir** M, García-Martínez D, Coquerelle M, Barash A, Recheis W. (2012). Systems-approaches to skeletal variation in paleoanthropology: the human thorax In: PESHE, editor; 2012 21, and 22.09.2012; Bordeaux. p 35.

135. **Bastir** M, Rosas A, Stringer C, Cuétara JMdl, Kruszynski R, Ross CF, Ravosa MJ. 2009. Basicranial flexion in the evolution of *Homo*: new analyses of an old model. *American Journal of Physical Anthropology*, S48:84.
136. **Bastir**, M., García Tabernero, A., Rosas, A., 2009. Geometric morphometrics of the human nasal cavity. *Paleontologia i evolució* 3,25-26.
137. **Bastir**, M., Gunz, P., Rosas, A., Harvati, K., Hublin, J.J., 2009. Variation and evolution of the cranial base and floor in *Homo*: a 3D geometric morphometric approach. *Paleontologia i evolució* 3,23-24.
138. Cuétara, J.M.d.l., **Bastir**, M., 2009. Primate cranial base: analysis of mid and lateral elements in a cercopithecoid sample using geometric morphometrics. *Paleontologia i evolució* 3,47-48.
139. Marugan Lobon, J., **Bastir**, M., 2009. The analysis of a complex cranial trait shared by primates and birds using geometric morphometrics. An overview of its macroevolutionary implications. *Paleontologia i evolució* 3,89-91.
140. Bruner, E., **Bastir**, M., 2009. Landmarks could slide, brains cannot: interpreting models of shape variation. *Paleontologia i evolució* 3,33-34.
141. **Bastir** M, Rosas A. 2008. Mosaic evolution, integration and modularity: evolution of the human cranial base. *American Journal of Physical Anthropology* S46:65.
142. Rosas A, **Bastir** M, García-Tabernero A, de la Rasilla M, Fortea J. 2008. Comparative morphology and morphometric assessment of the occipitals from the El Sidrón Neanderthals (Asturias, Northern Spain). *American Journal of Physical Anthropology* S46:162.
143. **Bastir** M, Rosas A, O'Higgins P. 2007. 3D architecture of the middle cranial fossa and modern human origins. *Am J Phys Anthropol.* S44:69.
144. Rosas A, C. Martínez-Maza, M. **Bastir**, A.García-Tabernero, C. Lalueza-Fox, R. Huguet, A. Estalrich, S. García-Vargas, M. de la Rasilla, Fortea. J. 2007. Paleobiological aspects of El Sidrón (Asturias, Spain) Neandertals. *American Journal of Physical Anthropology* S44:202.
145. **Bastir** M, Rosas A. 2004. Facial heights: Implications of postnatal ontogeny and facial orientation for skull morphology in humans and chimpanzees. *American Journal of Physical Anthropology* 123S:60-61.
146. Rosas A, Fortea J, de la Rasilla M, **Bastir** M, Martinez-Maza C. 2004. Neanderthals from El Sidrón Cave (Asturias, Spain). Presentation of a new sample. *American Journal of Physical Anthropology* 123S:169.
147. **Bastir** M, Rosas A, Kuroe K. 2002. Morphogenetic determinants of mandibular ramus breadth. A test in modern human populations. *American Journal of Physical Anthropology* S115:40-41.

## Other publications

148. **Bastir M.** 2016. Mirar y tocar para comprender: Tecnologías 3D del Laboratorio de Morfología Virtual MNCN. *madri+d*. madrid: fundacion para el conocimiento madrid.
149. Informe Ejecutivo de la Segunda Fase del Proyecto Cervantes: búsqueda, localización y estudio osteológico de los restos mortales de Don Miguel de Cervantes <https://www.elcultural.com/PDF/informe-cervantes.pdf>
150. García-Martínez D, Recheis W, Barash A, Bastir M. 2013. Of bells and domes: 3D Geometric Morphometrics of sliding semilandmarks of the Neanderthal upper thorax of Kebara 2. *Trending Topics in Palaeontology*. p 55-58.
151. García-Martínez D, Recheis W, **Bastir M.** 2013. The whole and its parts: 3D geometric morphometrics of human thorax *Evolution, Paleodiversity and Paleoecology of Iberian Ecosystems*. p. 126-127.
152. Rosas A, Estalrich, Bastir, M. 2012. Una reevaluación de los restos humanos neolíticos In: Muñoz JR, Casasola dB, Vila EV, and Duarte JJC, editors. *El abrigo y la cueva de Benzú Memoria de los trabajos arqueológicos de una década*; Ciudad Autónoma de Cádiz: Universidad de Cádiz. p 597-606.
153. **Bastir M**, Gunz P, Rosas A, Harvati K, and Hublin J-J (2009) Morphological trends of cranial base evolution in *Homo* *Paleoanthropology 2009*:A3.
154. Blanco, Peña A, M **Bastir**. 2008. Analysis of cerebellar change in shape and size along development by using geometric morphometric coordinates; Sevilla. University of Sevilla. p 92.
155. Rosas A, García Tabernero A, **Bastir M**, Peña A. 2007. Paleontología Virtual: Aplicaciones al estudio de la Evolucion Humana. In: Cambra Moo O, Martínez Perez C, Chamero B, Escaso F, de Esteban Trivigno F, Marugan Lobon J, editores. *Cantera Paleontológica*. Cuenca: Diputación Provincial de Cuenca. p 37-58.
156. **Bastir M**, Rosas A. Modularity and integration in development and evolution of the human craniofacial system; 2006; Prague. University of Prague. p 89.
157. Rosas A, García-Tabernero A., **Bastir M**, C Martínez-Maza. 2006. ¿Qué datos tenemos de los ocupantes de la cueva? In: Ramos MJ, Bernal Casasola D, editors. *El Proyecto Benzú*. Cadiz: University of Cádiz. p 147-156.
158. O'Higgins P, **Bastir M**, Kupczik K. 2006. Shaping the human face. *International Congress Series 1296*:55-73.
159. Rosas A, Huguet R, Pérez-González A, Carbonell E, Bermúdez de Castro JM, Vallverdú J, van der Made J, Allué E, García N, Martínez-Pérez R, **Bastir**, M. 2006. The "Sima del Elefante" cave site at Atapuerca (Spain). *Estudios Geologicos* 62(1):327-348.
160. Rosas A, J F, De la Rasilla M, Fernández Colón P, Hidalgo González A, Lasca Marquina E, Martínez Maza C, Garcia-Tabernero A, **Bastir M.** 2005. Restos de

Neandertales de la Cueva de El Sidrón: una restauración al servicio de la investigación paleontológica. PH-Boletín 53:70-73.

161. Ramos J, Castañeda V, Bernal D, Domínguez S, Vijande E, Pérez, M, Herrero N, Chamorro S, Ruiz B, Gil MJ, Rosas A, **Bastir** M, and others. Avance al estudio de la Cueva de Benzú (Ceuta). Nuevas perspectivas de investigación de sociedades tribales en el área norteafricana del Estrecho de Gibraltar. In: Arias P, Ontañón, R., García-Moncó, C. , editor; 2005; Santander. p 1023-1033.
162. Lalueza-Fox C, Sampietro ML, **Bastir** M, Martínez-Maza C, Bertranpetit J, Rasilla Mdl, Fortea J, Rosas A. 2005. Neandertales, ADN antiguo y restos fósiles de la cueva de El Sidrón (Asturias). BioJournal 2(Mayo).
163. Made van der, J, Aguirre E, **Bastir** M, Fernández-Jalvo Y, Huguet R, Laplana, C, Marquez B, Martínez-Maza C, Martínón M, Rosas A, Rodríguez J and others. 2003. El registro paleontológico y arqueológico de los yacimientos de la Trincheras del Ferrocarril en la Sierra de Atapuerca. Coloquios de Paleontología 1:345-372.
164. Rosas A, **Bastir** M, Martínez-Maza C. 2002. Morphological integration and predictive value of the mandible in the craniofacial system of Hominids: A test with the Atapuerca SH mandibular sample. Collegium Anthropologicum 26:171-172.
165. Rosas A, **Bastir** M, Martínez-Maza C. 2002. Una vision general de la evolución humana. Biopress 5:1-7.
166. Rosas A, **Bastir** M, Martínez-Maza C. 2001. Aspectos biológicos en la evolución humana. L'Avenc 259:30-34.
167. Nieto M, **Bastir** M, Cabrero Sañudo FJ, Hortal J, Martínez-Maza C, Jesus R. 2004. Does evolution evolve? In: Baquedano E, editor. Homenaje a Emiliano Aguirre. Alcala de Henares: Museo Arqueologico Regional. p 232-252.
168. Ramos, J., Castañeda, V., Bernal, D., Domínguez, S., Vijande, E., Pérez, M, Herrero, N., **Bastir**, M. (2005). Avance al estudio de la Cueva de Benzú (Ceuta). Nuevas perspectivas de investigación de sociedades tribales en el área norteafricana del Estrecho de Gibraltar. Paper presented at the III Congreso del Neolítico en la Península Ibérica. Monografías del Instituto internacional de Investigaciones Prehistóricas de Cantabria, Santander.
169. Rosas A, Huguet R, Pérez-González A, Carbonell E, Vallverdú J, van der Made J, Allué E, García N, Martínez-Pérez R, Rodríguez J, **Bastir** M. and others. 2004. Initial approach to the site formation and Paleoecology of the "Sima del Elefante": a Pleistocene karst locality at Atapuerca Hill. In: Baquedano E, editor. Homenaje a Emiliano Aguirre. Alcala de Henares: Museo Arqueologico Regional. p 135-155.
170. **Bastir** M, Rosas A. Comparative ontogeny in humans and chimpanzees: Similarities, differences and paradoxes in postnatal growth and development of the skull; 2003; Greifswald, Germany. Institut für Anatomie, Universität Greifswald. p P2.
171. Rosas A, **Bastir** M. 2003. Estudio preliminar de los restos humanos de la cueva de Benzu. In: José Ramos DB, Vicente Castañeda, editor. El abrigo y cueva de Benzu

en la prehistoria de Ceuta. Aproximación al estudio de las sociedades cazadoras-recolectoras y tribales comunitarias en el ámbito norteafricano del Estrecho de Gibraltar: Servicio de Publicaciones de la Universidad de Cádiz, UNED, Centro asociado de Ceuta, Consejería de Educación y Cultura - Ciudad Autónoma de Ceuta. p 363-369.

172. **Bastir M.** 1999. Vorwort zur deutschen Auflage. Lamarck und die Boten. Frankfurt, Berlin Bern, New York, Paris, Wien: Peter Lang Europäischer Verlag der Wissenschaftsverlag. p 9-11.

### *Invited lectures, conferences, key-notes, presentations*

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- Marzo 2019 "El Torso de los homínidos", técnicas digitales en paleontología; Madrid por la Ciencia, IFEMA
- November 2018. "Cerebros, caras y costillas": estudio de la evolución del cuerpo humano usando tecnología 3D. Semana de la Ciencia de Madrid.
- Abril 2018. Coloquios de Paleoantropología MNCN-UAM. *La evolución del ciclo vital humano. (Sociedad de Amigos del Museo, SAM)*
- January 2018. "The significance of the respiratory system for cranial and postcranial skeletal morphology in Neanderthals and modern humans", invited conference, University of Poitiers, Journées de la Société d'Anthropologie de Paris. (Host: Dr. Francois Marchand)
- September 2015. "Back to basics: Morphological analysis in Paleoanthropology", Invited Speaker, Symposium Konrad Lorenz Institute for Evolution and Cognition, Vienna, Austria
- November 2014. 3D Geometric Morphometrics in human evolutionary anatomy. (Facultad de Medicina, Universidad de Valencia, Host. Dr. Juan Alberto Sanchis Gimeno)
- December 2014. "Organism models in human paleobiology" (University la Sapienza, Rome, Host Prof. Giovanni Destro-Bisol).
- July 2016. "Evolution, form and function of the respiratory system in human evolution". invited conference, (Hilgendorf Lecture, University of Tübingen, Host: Prof. Havarti)
- November 2014. "Avances conceptuales y metodológicos en paleoantropología. Seminarios del Departamento de Biología (Autónoma University, Madrid. (invited conference, Host Dr. Armando Gonzalez).
- December 2017. "La evolución del cerebro en *Homo*"; invited conference, Facultad de Psicología, UAM, Madrid (Host: Dr. Carmen F. Monraveta)

- November 2017. “Donde la paleoantropología se encuentra con la ortodoncia” invited conference, Congreso Chileno de Anatomía, Concepción, Chile, (Host: Dr. Rodolfo Sanzana)
- November 2017. “Ontogeny and evolution of the human thorax” invited conference, Congreso Chileno de Anatomía, Concepción, Chile (Key-note lecture) (Host: Dr. Rodolfo Sanzana)
- October 2017. “Dónde la paleoantropología se encuentra con la ortodoncia” invited conference, Universidad Santiago de Chile, Santiago de Chile (Host: Dr. Viviana Toro-Ibacache)
- November 2016. Técnicas de virtualización al Servicio de la arqueología: el uso de escáner 3D en búsqueda de Cervantes” (Semana de la Ciencia, Museo del Traje).
- October 2016. “3D Morphometrics of Breathing Kinematics and its Potential Implications for Respiratory Issues in Osteogenesis Imperfecta (OI)”;  
Keynote-lecture, Congress Osteogenesis Imperfecta, Lisbon, Portugal
- April 2016. Coloquios de Paleoantropología MNCN-UAM. *H. naledi* (Sociedad de Amigos del Museo, SAM)
- November 2015. Morfometría 3D del aparato respiratorio IV Jornada de Fisioterapia en Osteogénesis Imperfecta de AHUCE
- November 2013. “The evolution of the human respiratory system” Musee d’homme, Paris (Host: Dr. Martin Friess)
- December 2012. “El cerebro y el cráneo en evolución humana.” Ciclo de conferencias de la Facultad de Psicología de la University Autónoma de Madrid. (invited conference).
- April 2011. "Nasal form and function in Midpleistocene human facial evolution" AAPA Minneapolis, USA (Invitado a symposium) Host Dr. Karen Baab.
- December 2010. “Evolución y desarrollo en el cráneo humano. Perspectivas actuales en la Paleoantropología” ponencia en el ciclo de la Historia de la Biología y Evolución: MÓDULO 5. El Factor Histórico en la Evolución, University Autónoma de Madrid (invited by Dr. Ángela Delgado Buscalioni).
- April 2008. “Mosaic evolution, integration and modularity: evolution of the human cranial base” AAPA meeting, Columbus, Ohio, USA (Symposium conference invited by Dr. Katherine Wilmoore, Harvard University, USA).
- September 2006. “Middle Cranial Fossa Evolution in Humans” Department of Anthropology University College London, United Kingdom. (invited by Dr. Charles Lockwood).

- June 2006. “The evolution of the lateral base” Max Planck Institute for Evolutionary Anthropology; Leipzig, Germany (invited by Prof Hublin y Dr. Gunz).
- August 2005. “Integration and modularity of the cranial base” University de Praga, Republica Checa, (invited by Dr. Chris Klingenberg, University of Manchester, United Kingdom).
- November 2002. “Structural determination of modern human mandibular ramus breadth” University of Liverpool. Department of Anatomy and Cell Biology, United Kingdom (invited by Dr. Gabriele Macho, University of Liverpool)
- November 2002. “Systemic factors of morphological variation in Mid-Pleistocene hominids” University of Cambridge, Leverhulme Centre for Human Evolutionary Studies, United Kingdom. (invited by Dr. Marta Mirazon Lahr, y Prof. Foley; Leverhulme Centre for Human Evolutionary Studies, United Kingdom)
- October 2002. “Morphogenetic interactions between the modern human basicranium and the mandible”, University College London, Department of Developmental Biology and Anatomy; United Kingdom. (invited by Prof. Paul O’Higgins and Prof. Chris Dean, University College London).
- September 2002. “The paleontological sites of Atapuerca. Early occupation in Europe”. Natural History Museum, London, United Kingdom (invited by Dr. Louise Humphrey and Prof. Chris Stringer).
- March 2000. “Morfometría geométrica y el análisis del dimorfismo craneofacial en humanos”, Museo Nacional de Ciencias Naturales; CSIC (invited by Dr. Antonio Valdecasas).

### *Scientific presentations*

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- September 2018. “Thoracic vertebral morphology of KNM-WT 15000”, European Society for the Study of Human Evolution. European Society for the Study of Human Evolution, Faro.
- April. 2017. American Association of Physical Anthropologists, New Orleans, EEUU
- September 2016. ESHE Madrid “A geometric morphometric reconstruction of the thorax of *H. naledi*”
- April. 2016. American Association of Physical Anthropologists, Atlanta, EEUU
- April. 2016. 3D assessment of rib curvatures in KNM-WT 15000 Paleoanthropology Society, Atlanta, EEUU



- April. 2016. Preliminary findings of the 3D analysis of the costal remains of Australopithecus. Sediba; Paleoanthropology Society, Atlanta, EEUU
- September 2015. ESHE London: "3D structure of thoracic vertebrae and their significance for size and shape of the ribcage in Neandertals"
- September 2014. ESHE Florence: Thorax kinematics and the reconstruction of body models in hominin evolution
- September 2013. "A preliminary assessment of the thoracic remains of the El Sidrón Neandertal (Asturias, Spain)"; 3<sup>rd</sup> meeting of the European Society for the Study of Human Evolution, Bordeaux, France
- April 2013. "3D-analysis of the jaw-basicranium-cervical skeleton in fetal and infant humans and chimpanzees. Implications for shaping the mandibular symphysis" American Association of Physical Anthropologists (AAPA) Knoxville, USA.
- April 2013. American Association of Physical Anthropologists (Minneapolis, EEUU) Knoxville, USA.
- September 2012. "Systems-approaches to skeletal variation in paleoanthropology: the human thorax"; 2<sup>nd</sup> meeting of the European Society for the Study of Human Evolution, Bordeaux, France.
- November 2011. "Geometric morphometric analysis of endocranial base evolution in *Homo*. Sociedad Española de Biología Evolutiva.
- March 2011. American Association of Physical Anthropologists (Minneapolis, EEUU)
- July 2009. "Variation and evolution of the cranial base and floor: a 3D geometric morphometric approach", First Iberian Symposium on Geometric Morphometrics, Sabadell.
- July 2009. "Geometric morphometric analysis of the nasal cavity in humans." First Iberian Symposium on Geometric Morphometrics, Sabadell.
- May 2009. "Evolución y desarrollo del sistema craneofacial en humanos" Facultad de Anatomía, Ciencias Morfológicas II; (invited by Dr. Angel Peña-Melian).
- April 2009 American Association of Physical Anthropologists (Chicago, EEUU)
- May 2008. "Morfometría geométrica en Paleoantropología: Evolución y desarrollo del sistema craneofacial en humanos" Facultad de Anatomía, Ciencias Morfológicas II; (invited by Dr. Angel Peña-Melian).
- May 2008. "The evolution and development of the cranial base" Museo Nacional de Ciencias Naturales; CSIC (Marie Curie RTN-EVAN Workshop on craniofacial biology and evolution).

- May 2008. “The counterpart principles and its application to human evolution” Museo Nacional de Ciencias Naturales; CSIC (Marie Curie RTN-EVAN Workshop on craniofacial biology and evolution)..
- May 2007. “Morfometría geométrica en Paleoantropología: Evolución y desarrollo del sistema craneofacial en humanos” University Complutense, Facultad de Anatomía, Ciencias Morfológicas II; (invited by Dr. Angel Peña-Melian).
- March 2007. American Association of Physical Anthropologists (Philadelphia, EEUU)
- April 2005. “Evolution of the lateral cranial base” University de York, United Kingdom. British Society of Human Biologists.
- April 2004 American Association of Physical Anthropologists (Tampa, EEUU)
- June 2002. “Nuevos métodos en Antropología física: morfometría geométrica”. Departamento de Arqueología. Autónoma University de Madrid (invited by Dr. Javier Baena).
- October 2001. “Sexual dimorphism in modern humans. A geometric morphometric study”, University College London, Department of Developmental Biology and Anatomy, United Kingdom, (invited by Prof. Paul O’Higgins, UCL).
- March 2001. “Thin-plates spline analysis of human craniofacial sexual dimorphism” American Association of Physical Anthropologists Kansas City, Missouri. EEUU.

#### *Visits at international research centers*

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2018. Georgian National Museum, Tbilisi (Georgia)
2017. Universidad de Santiago, Museo de Historia Natural, Chile
2015. Naturhistorisches Museum Wien, Abteilung fuer Anthropologie (SYS-fellowship)
2014. University of Witwatersrand (South Africa, Collection studies, Rising Star workshop)
2013. Muséum national d'histoire naturelle (MNHN).
2012. Georgian National Museum, Tbilisi (Georgia)
2012. Museo Dar Es Salaam (Tanzania).
2011. Museo Dar Es Salaam (Tanzania).
2010. University of Vienna, Austria. Software training (Evan-toolkit).

- 2009. University of York, United Kingdom. Alpha testing of EVAN-software.
- 2007. Institute of Human Evolution, University of Nice, France.
- 2007. University of Vienna, Austria. Software training. Virtual Anthropology and geometric morphometrics in R.
- 2007. Max Planck Institute for Evolutionary Anthropology 2 (April); (Collection studies and collaborations).
- 2007. Max Planck Institute for Evolutionary Anthropology (June); (Collection studies and collaborations).
- 2007. GEO – Hamburg, Germany (1 week): Scientific journalism training (EVAN- Editorial GEO).
- 2006. MorphoFest, University of Vienna, Austria (3 weeks). Course, seminar and symposium, in geometric morphometrics.
- 2006. Natural History Museum, London, United Kingdom.
- 2006. Hull York Medical School, University de York United Kingdom, Medical Imaging Workshop (EVAN).
- 2006. Neanderthal Museum Mettmann, Germany, Digital data bases ([www.NESPOS.org](http://www.NESPOS.org)).
- 2005. Orthodontic Department, University Kagoshima, Japon,.
- 2005. Field Museum of Natural History (2 weeks); Chicago, USA. (collaboration and collection studies, FMNH, University of Chicago, and North Western University).
- 2003. University of Kiev (Ucrania)
- 2003. Institut für Anatomie, Universität Greifswald, Germany
- 2002. Natural History Museum, London, United Kingdom (“estancia corta FPI”) (8 weeks)
- 2001. Natural History Museum, London, United Kingdom (SYNTHESESYS) (10 weeks)
- 2000. Instituto de Antropología, University of Coimbra, Portugal
- 1999. Instituto de Antropología, University of Coimbra, Portugal (3 weeks)

### *Academic teaching*

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- 2013 “Análisis virtual de la forma mediante morfometría geométrica 3D” Sociedad de Amigos del Museo, MNCN-CSIC; Museo Nacional de Ciencias Naturales, Consejo superior de Investigaciones científicas  
([http://www.sam.mncn.csic.es/cursos\\_seminarios1.php?idcursosimi=53](http://www.sam.mncn.csic.es/cursos_seminarios1.php?idcursosimi=53))

- Since 2012 Training in geometric morphometrics of undergraduate and Master students
- 2008 “Introduction to Geometric Morphometrics”, Training within the First Iberian Symposium for Geometric Morphometrics at Sabadell (ICP), with Dr. Chris Klingenberg, (University of Manchester; United Kingdom; and Dr. Jesus Marugán (Autónoma University, Madrid)
- 2005-2007 Courses in geometric morphometrics at the MNCN CSIC (Departamentos de Biología Evolutiva, y Paleobiología)
- 2002-2009 Participation in doctorate courses in the field of geometric morphometrics (Facultad de Biología UAM, UCM; Facultad de Medicina UCM)

### *Supervision of Undergraduate and Master theses*

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- 2018-2019. *Eugenia Palomino*, Morfometría geométrica del manubrio (UG)
- 2017-2018. *Jose Maria Ruiz Gonzalez*, La Morfometría Geométrica como herramienta aplicada al estudio de la escoliosis en pacientes con osteogénesis imperfecta (University Autónoma de Madrid)
- 2016-2017. *Alberto Riesco*, MÉTODOS CUANTITATIVOS PARA LA RECONSTRUCCIÓN DE ELEMENTOS SERIALES EN ANATOMÍA EVOLUTIVA HUMANA; Complutense University, Madrid.
- 2016-2017. *Carlos Palancar*, Anatomía Comparada del Atlas (primera vértebra cervical, C1) a través de la Morfometría Geométrica 3D, (University Autónoma de Madrid)
- 2016-2017. *Lucia Peña*, VARIACIÓN MORFOLÓGICA CRANEOFACIAL ENTRE POBLACIONES DEL HEMISFERIO SUR; Complutense University, Madrid.
- 2016-2018. *David Oropesa*, Análisis de la variabilidad en la nasofaringe de humanos modernos mediante morfometría geométrica 3D; Complutense University, Madrid.
- 2015-2016. *Stephanie Llois Zloniski*: ESTUDIO DE PARÁMETROS MORFOLÓGICOS DE LA COLUMNA VERTEBRAL LUMBAR HUMANA MEDIANTE MORFOMETRÍA GEOMÉTRICA (University Autónoma de Madrid)
- 2015-2016. *Nicole Torres Tamayo*: Comparación de patrones cinemáticos pulmonares en pacientes con Enfermedad Pulmonar Obstructiva Crónica (EPOC) e individuos sanos mediante Morfometría Geométrica en 3D. Complutense University, Madrid.
- 2015-2016. *Alberto Riesco*. La digitalización del *Megatherium americanum* del Museo, parte II (University Autónoma de Madrid)

- 2015-2016. *Lucía Peña López*. Problemas anatómicos en homínidos de cuerpo pequeño, Complutense University, Madrid.
- 2014-2015 *David Oropesa Olmedo*: 3D analysis of craniofacial capacity (en curso)
- 2014-2015 *Sara Solanas Mozun*: Anatomía comparada de vertebras en primates con diferentes patrones de locomoción mediante morfometría geométrica de landmarks y semilandmarks en 3D. (University Autónoma de Madrid)
- 2014-2015 *Nicole Torres Tamayo*: Análisis del dimorfismo en la cinemática pulmonar en humanos mediante morfometría geométrica de landmarks y semilandmarks en 3D (Complutense University, Madrid.
- 2014-2015 *Alberto Riesco*. La digitalización del *Megatherium americanum* del Museo, parte I (University Autónoma de Madrid)
- 2014-2015 *Daniel Amigo*: Rutinas en el prototipado rápido y modelado virtual (Universidad Alcalá de Henares)
- 2014-2015 *Stephanie Llois Zloniski*: Morfometría geométrica de discos intervertebrales en humanos. (Universidad Alcalá de Henares)
- 2013-2014 *Francisco Javier Rodriguez Perez*: 3D analysis of the clavicle (University Autónoma de Madrid) (mejor trabajo del curso académico), co-dirigido con Dr. Antonio Rosas
- 2013-2014 *Elena Sierra Soria*: 3D analysis of the hand. (University Autónoma de Madrid), co-dirigido con Dr. Antonio Rosas
- 2013-2014 *Noelia Anaya García*: 3D analysis of the femur (Complutense University, Madrid), co-dirigido con Dr. Antonio Rosas
- 2013-2014 *Ana Isabel Ferrando*: 3D analysis of the talus, (University Autónoma de Madrid), co-dirigido con Dr. Antonio Rosas
- 2013-2014 *Susana Fernandez Cerezo*: 3D analysis of the calcaneus. (University Autónoma de Madrid), co-dirigido con Dr. Antonio Rosas
- 2012-2013 *Daniel García Martínez*: "3D morphometrics of the Nariokotome thorax (KNM WT 15000), reconstruction and its ontogenetic, functional and evolutionary implications" (University Autónoma de Madrid) (summa cum laude)
- 2012-2013 *Laura Perez Criado* "Allometry and sexual dimorphism in the humerus of Neandertals from El Sidrón and modern humans (Complutense University, Madrid) co-dirigido con Dr. Antonio Rosas
- 2011-2012 *Daniel García Martínez*: "3D morphometrics of a Neandertal thorax reconstruction and its ontogenetic, functional and evolutionary implications" (University Autónoma de Madrid)

- 2009-2010 *Paula Godoy Alonso*: “Variation patterns in pharynx and nasal cavity: sexual dimorphism, geographic and climatic variation and its relevance for human skull evolution. (University Autónoma de Madrid)
- 2006-2007 *Jose Manuel de la Cuétara Pastor*: “Efecto de la encefalización sobre la morfología craneofacial en Anthrooidea (Orden Primates)”. (University Autónoma de Madrid)
- 2005-2006 *Pilar Guillermina Mercedes Sobral*: “Facial growth patterns” (University Autónoma de Madrid)

### *Supervision of Doctoral dissertations (PhD-theses)*

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- Since 2018 Jose María Gonzalez Ruiz ((Autonoma University, Madrid)
- Since 2018 Stephanie Lois Zlolski (co-supervision); Univeristy of Valencia)
- Since 2017 Carlos Palancar (Autonoma University, Madrid)
- Since 2017 Nicole Torres Tamayo (FPI-predocctoral student), Autonoma University, Madrid
- Since 2016 Guillermo Bravo (co-supervision, University of Granada, Univeristy of Vienna)
- Since 2014 Alina Lucea Ruíz (co-supervision) Universidad de Barcelona):
- 2014-2018 Maria Ávila Rodriguez (co-supervision); Universidad Complutense, Madrid, sobresaliente)
- 2013-2017 Daniel García Martínez (University Autónoma de Madrid, summa cum laude)

### *Supervision of Post-doctoral researchers*

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- 2018-2019. Dr. Benoit Beyer (University of Belgium, Brussels)
- 2011-2013 Dr. Michael Coquerelle (post-doc researcher of Fyssen Foundation)

### *PhD-theses and dissertation committees*

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- 2018 Dr. Javier Santos (Universidad de Barcelona), suplente
- 2018 Dr. Antonio García Tabernero (MNCN-UAM), vocal
- 2017 Dr. Gizeh Rangel de Lazaro (IPHES, University of Tarragona), vocal
- 2016 Dr. Marta Pina, ICP, Sabadell (suplente)

- 2016 Dr. Aniol Pujol Bayona, Enero 2016, Universidad de Barcelona (vocal).
- 2015 Dr. Almudena Estalrich, Febrero, 2015, University Autónoma de Madrid (vocal)
- 2013 Dr. Dimitri Neaux, Noviembre 2013, University de Poitiers (Francia), Rapporteur.
- 2013 Dr. Ioannis Sarris, University Autónoma de Madrid (vocal)
- 2012 Dr. Bea Chamero Macho. Enero 2012. University Autónoma de Madrid (secretario)
- 2010 Dr. Antigoni Kaliontzopoulou, Noviembre 2010. University de Barcelona (vocal)
- 2009 Dr. Luis Quevedes, Diciembre 2009. University Autónoma de Madrid (vocal)

### *Meeting organizations*

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2016. Second Iberian Symposium on Geometric Morphometrics; Madrid, España (Conveyor and organizing board).
2015. Simposio de Morfometría Geométrica (Sociedad Española de Antropología Física), Congreso SEAF, Madrid, España
2009. Miembro del comité organizador y científico de: "First Iberian Symposium on Geometric Morphometrics. The analysis of organic shape". Sabadell, España.
2008. Miembro del comité organizador del workshop EVAN (Marie Curie Research Training Network en "Biología Craneofacial", Museo Nacional de Ciencias Naturales.
2007. Organizer EVAN-training workshop "Software "R" in Geometric Morphometrics". University of Vienna, Austria.

### *Media coverage (selected items)*

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- Atapuerca** (2001a) Die ersten Europäer, part I: ORF, Austrian Broadcasting Corporation. <http://science.orf.at/science/news/15462>.
- (2001b) Atapuerca und die ersten Europäer, part II: ORF, Austrian Broadcasting Corporation. <http://science.orf.at/science/news/16048>.
- (2001c) Atapuerca und die ersten Europäer, part III: ORF, Austrian Broadcasting Corporation. <http://science.orf.at/science/news/16702>.

(2002) ORF (Radio-Televisión Austriaca “OE1” “Dimensionen”) Evolution des Menschen (Interviews on Atapuerca (German), with Mag. Birgit Dalheimer.

**Neanderthals** Daily Telegraph (2007)  
(<http://www.telegraph.co.uk/earth/main.jhtml?xml=/earth/2007/07/31/scineanderthal131.xml>).

Science daily 2006:  
<http://www.sciencedaily.com/releases/2006/12/061222092638.htm>.

“REDES” documental de RTVE, “Todos somos de la misma tribu” (2007)  
Cervantes

“Informa semanal” documental de RTVE, “El Museo Nacional de Ciencias Naturales” (2007)

Der Falter <http://www.falter.at/web/heureka/blog/?p=131> y  
<http://www.falter.at/web/heureka/blog/?p=126#more-126>

El País: Entrevista sobre la inteligencia en Neandertales (Julio 2008).

**Skull evolution** Der Standard (Periódico diario de Austria) “Geistesblitz” (Julio 2008).

<https://www.agenciasinc.es/Noticias/La-expresion-de-las-cejas-clave-en-la-supervivencia-humana>

**Olfaction** Der Standard (2011)

<http://derstandard.at/1323222967596/Nasaler-Vorsprung-Neandertaler-konnte-schlechter-riechen-als-der-moderne-Mensch>

Spektrum der Wissenschaften (Investigación y Ciencia) (2011)

<http://www.spektrum.de/alias/evolution/menschen-haben-groesseren-riechkolben-als-neandertaler/1135953>

<http://www.elmundo.es/elmundo/2011/12/13/ciencia/1323780254.html>

<http://www.sciencedaily.com/releases/2011/12/111214101818.htm>

**Body posture** <https://cosmosmagazine.com/archaeology/ape-like-or-human-disagreement-erupts-over-neanderthal-posture>

**Evolution** Entrevista televisión española (RTVE) “La 2” “La aventura del saber”  
(November 2013)

**Thorax** <http://www.agenciasinc.es/Noticias/Una-tecnica-3D-permite-ver-con-detalle-el-desarrollo-del-torax-en-humanos> 2013

<https://www.agenciasinc.es/Noticias/El-torax-de-los-neandertales-estaba-adaptado-a-un-mayor-consumo-de-oxigeno> 2017



<https://www.agenciasinc.es/Noticias/Reconstruyen-por-primera-vez-en-3D-el-torax-de-un-neandertal> 2018

<https://www.agenciasinc.es/Noticias/El-tamano-del-torax-humano-varia-en-funcion-del-frio> 2018

<https://www.agenciasinc.es/Noticias/Los-neandertales-tenian-cerca-de-un-20-mas-de-capacidad-pulmonar-que-los-sapiens> 2018

**H. naledi** El significado de *H. naledi* (various interviews, RNE, 21.09.2015; 14.11.2015)

Televisión “El Laboratorio de Morfología Virtual del CSIC: *H. naledi*” (RTVE, Telediario La 1, 02.11 2015)

Print News 2015 *H. naledi* (Principal newspapers in German (Der Standard, Profil), Spanish (El Pais, La Vanguardia, EFE Press Agency);

**Brain Evolution** <https://www.agenciasinc.es/Noticias/Los-neandertales-pudieron-desaparecer-por-el-tamano-de-su-cerebelo> 2018

<https://www.agenciasinc.es/Noticias/Un-estudio-da-pistas-sobre-la-integracion-entre-craneo-y-cerebro> (2017)

### *Scientific evaluation and peer-review*

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#### **Project Evaluator**

Agencia Nacional de Evaluaciones de Proyectos Científicos (ANEP), SECyT (Sociedad de Ciencia y Tecnología, Leakey Foundation (USA), Israel Science Foundation (IS), FED-tWIN: Belgian programme of sustainable research cooperation, Scientific Board (extended experts) of The Research Foundation Flanders (FWO)

#### **Peer reviewer**

Nature, Nature Ecology and Evolution, PLOS Biology, Quaternary Science Research, Biological Journal of the Linnean Society, Proceedings of the National Academy of Sciences, Evolution, British Dental Journal, American Journal of Physical Anthropology, Journal of Human Evolution, Journal of Anatomy, Clinical Anatomy, The Anatomical Record, Human Biology, New Anatomist, Human Brain Mapping, American Journal of Human Biology, Naturwissenschaften, Collegium Anthropologicum, American Journal of Orthodontics and Dentofacial Orthopedics, Archives of Oral Biology, Plos One, Anatomischer Anzeiger

### *Memberships*

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- Honorary Research Fellow (University of Witwatersrand, Johannesburg, South Africa)
- Honorary Research Fellow (University of York, United Kingdom)

- Member of American Association of Physical Anthropology
- Member of the European Society for the Study of Human Evolution
- Member of Paleoanthropology Society (USA)
- Member of NESPOS.org
- Member of EVAN society (European Virtual Anthropology Network)