

Dr. Margarita Jambrina Enríquez

Postdoctoral Fellow

Contact

Archaeological Micromorphology and Biomarkers (AMBI Lab)

Instituto Universitario de Bio-Organica Antonio González
Avenida Astrofísico Francisco Sánchez,
38206, La Laguna, Tenerife (Spain)
E-Mail: Phone:

Education

PhD in Geology “Doctor Europeus”, University of Salamanca (Spain), 2015.

Dissertation title: *The Sanabria Lake record: climate and environmental variability in the NW Iberian Peninsula for the last 26.000 years.*

Supervisors: *Prof. Dr. Clemente Recio Hernández (Stable Isotope Laboratory, University of Salamanca, Spain), Prof. Dr. Blas Valero Garcés (Pyrenean Institute of Ecology - Spanish National Research Council, Spain).*

Qualification: *Sobresaliente Cum Laude unanimously (maximum mark).*

M. Sc. in Petrology and Geochemistry, University of Salamanca (Spain), 2009.

Dissertation title: *Sedimentology and hidrogeochemistry of the El Cristo and La Cervera ponds (Salamanca, Spain).*

Supervisors: *Prof. Dr. Ildefonso Armenteros Armenteros and Prof. Dr. Ángel Corrochano Sanchez (Department of Geology, University of Salamanca, Spain).*

Qualification: *Sobresaliente Cum Laude unanimously (maximum mark).*

B. Sc. in Geology, University of Salamanca (Spain), 2007.

Other:

- **Assistant Professor Ph.D. Accreditation**, Agency for Quality University System in Castilla y León - ACSUCYL (Spain), 2016.
- **Teacher Certificate**, University of Salamanca (Spain), 2009.

Fellowships and Awards

2016 **Extraordinary Doctoral Awards**, University of Salamanca (Spain).
(Awarded to the best Earth Science PhD Thesis of the year).

- 2012 **Grant for Short Term Scientific Mission (STSM)**, European Cooperation in Science and Technology, Earth System Science and Environmental Management COST Action ES0907 (ESSEM COST Action ES0907) - INTEgrating Ice core, MARine and TERrestrial records - 60,000 to 8000 years ago (INTIMATE)
- 2010 **Extraordinary Master Awards**, University of Salamanca (Spain).
(Awarded to the best Geology Master Thesis of the year).
- 2009-2013 **PhD. Fellowship**, University of Salamanca (Spain).
- 2006-2007 **Department Collaboration Fellowship** - Spanish Ministry of Education and Science.

Professional and research experience

- 11/2016 to present **Post Doctoral Researcher**, Archaeological Micromorphology and Biomarkers AMBI Lab, University of La Laguna (Spain).
(with Dr. Carolina Mallol)
- 10/2012-12/2012 **Pre Doctoral short-stay**, Organic Surface Geochemistry Lab, University of Potsdam (Germany).
(Supervisor: Dr. Dirk Sachse)
- 05/2011-07/2011 **Pre Doctoral short-stay**, Organic Surface Geochemistry Lab, University of Potsdam (Germany).
(Supervisor: Dr. Dirk Sachse)
- 03/2011 **Pre Doctoral short-stay**, Department Navigation and Earth Sciences, University of A Coruña (Spain).
(Supervisor: Dr. Roberto Bao)
- 09/2009-05/2015 **Doctoral Researcher**, Stable Isotope Laboratory - University of Salamanca (Spain)
(Supervisor: Dr. Clemente Recio Hernández, Dr. Blas Valero Garcés)
- 12/2006-07/2009 **Student Research Assistant**, Department of Geology, University of Salamanca (Spain).
(Supervisor: Dr. Ildefonso Armenteros Armenteros, Dr. Ángel Corrochano Sánchez)

Teaching Experience

- 2012-2016 **Teaching Assistant, Master Earth Sciences: Environmental and Applied Geology** (Modern Sedimentary Environments). University of Salamanca (Spain).
(Supervisor: Dr. Ildefonso Armenteros Armenteros)
- 07/2016 **Teaching Assistant, Pre-College Summer Program at University of Salamanca (Spain)**.
"Campus Summer Scientific" is funded by Spanish Foundation for Science and Technology (FECYT), Spanish Ministry of Education, Culture and Sport and supported by Obra Social "La Caixa"
(Supervisors: Dr. Miguel Lizana, Dr. Ana Negro,)
- 20/05/2016 **Invited Talk**
Title: *El registro sedimentario del Lago de Sanabria (España): reconstrucción paleoambiental de los últimos 25.000 años a partir del estudio de biomarcadores.*
Institution: University of La Laguna
Location: *Spain*

- 06/05/2016 **Invited Talk**
 Title: *El sedimento del Lago de Sanabria*
 Institution: *University of Salamanca*
 Location: *Spain*
- 08/05/2015 **Invited Talk**
 Title: *El registro del Lago de Sanabria: variabilidad climática y ambiental en el NO de la Península Ibérica durante los últimos 26.000 años.*
 Institution: *Pyrenean Institute of Ecology - Spanish National Research Council,*
 Location: *Spain*

Participation in research projects

- 2016 to present **PALEOCHAR - ERC-CoG-2014**
 ‘Insights into the Neanderthals and their demise from the study of microscopic and molecular charred matter in Middle Palaeolithic sediments’.
 Funded by *EUROPEAN RESEARCH COUNCIL - Consolidator Grant - HORIZON 2020 - ERC-2014 - CoG, Grant Agreement 648871 (2 M €)*
 Project Coordinator: *Dr. Carolina Mallol (University of La Laguna, Spain)*
- 2013-2015 **HOLOCHILL-CGL2012-32501**
 ‘Cambio global durante el holoceno en Chile a partir de un transepto de registros lacustres desde el trópico a la región mediterránea (18º-36).’
 Funded by *Spanish Ministry of Economy and Competitiveness (109,985 €)*
 Project Coordinator: *Dr. Blas Valero Garcés (Pyrenean Institute of Ecology - Spanish National Research Council, Spain)*
- 2010-2013 **GLOBALKARST-CGL2009-08415**
 ‘Hydrological and geochemical response of karstic lakes to anthropogenic and climate forcing for the last 4000 years in the Iberian Peninsula based on annually-laminated (varved) sequences’.
 Funded by: *Spanish Interministerial Commission for Science and Technology (CICYT) (181,500.01 €)*
 Project Coordinator: *Dr. Blas Valero Garcés (Pyrenean Institute of Ecology - Spanish National Research Council, Spain)*
- 2009-2012 **HORDA – PP.NN. 083/2009**
 ‘Dinámica glacial, clima y vegetación en el Parque Nacional de Ordesa - Monte Perdido durante el Holoceno’.
 Funded by *Red de Parques Nacionales, Ministerio de Medio Ambiente (104,324.02€)*
 Project Coordinator: *Dr. Blas Valero Garcés (Pyrenean Institute of Ecology - Spanish National Research Council, Spain)*

Research papers published in SCI journals

- **Jambrina-Enríquez, M.**, Sachse, D., Valero-Garcés, B.L. 2016. A Deglaciation and Holocene biomarker-based reconstruction of climate and environmental variability in NW Iberian Peninsula: The Sanabria Lake sequence. *Journal of Paleolimnology* 56 (1): 49-66.: DOI: 10.1007/s10933-016-9890-6
- Borruel, V., Gomez-Paccard, M., Larrasoana, J.C., Rico, M., Valero-Garcés, B., Moreno, A., **Jambrina-Enríquez, M.**, Soto, R. 2015. Late Pleistocene to Holocene palaeoenvironmental variability in the north-west Spanish mountains: insights from a source to sink environmental magnetic study of Lake Sanabria. *Journal of Quaternary Science* 30 (3): 222 – 234. DOI: 10.1002/jqs.2773

- Hernández, A., Trigo, R.M., Pla-Rabes, S., Valero-Garcés, B.L., Jerez, S., Rico-Herrero, M., Vega, J.C., **Jambrina-Enríquez, M.**, Giralt S. 2015. Sensitivity of two Iberian lakes to North Atlantic atmospheric circulation modes. *Climate Dynamics* 45 (11): 3403 – 3417. DOI 10.1007/s00382-015-2547-8
- **Jambrina-Enríquez, M.**, Rico, M., Moreno, A., Leira, M., Bernárdez, P., Prego, R., Recio, C., Valero-Garcés, B.L. 2014. Timing of deglaciation and postglacial environmental dynamics in NW Iberia: the Sanabria Lake record. *Quaternary Science Reviews* 94: 136 – 158. doi:10.1016/j.quascirev.2014.04.018
- **Jambrina, M.**, Armenteros, I., Corrochano, Á., Recio, C. 2013. Origin and hydrogeochemistry of a shallow flow-through lake on a Pleistocene piedmont, northern Spanish Meseta. *Journal of Limnology* 72(2): 361-375. DOI: <http://dx.doi.org/10.4081/jlimnol.2013.e29>

Research papers published in non-SCI journals

- Valero Garcés, B.L., González Sampérez, P., Moreno, A., Aranbarri, J., Barreiro, F., Bartolomé, M., Corella, J.P., Frugone, M., García-Prieto, E., Gil-Romera, G., **Jambrina, M.**, Leunda, M., Martí-Bono, C., Morellón, C., Oliva, B., Pérez-Sanz, A., Pérez-Mejías, C., Rico, M.T., Sevilla, M. 2014. Paisajes y climas del último ciclo glacial en el NE de la Península Ibérica: una visión desde la evolución de los glaciares, lagos y espeleotemas, In: Arnáez Vadilla, J., González Sampérez, P., Lasanta Martínez, T., Valero Garcés, B.L. (Eds.). *Geocología, cambio ambiental y paisaje: homenaje al profesor José María García Ruiz*. Consejo Superior de Investigación Científicas, CSIC, Instituto Pirenaico de Ecología, Universidad de La Rioja, pp: 17-48 (in spanish).
- **Jambrina, M.**, Rico, M., Moreno A., Valero Garcés, B.L. 2011. La secuencia sedimentaria del Lago de Sanabria (Zamora, Noroeste de España). *Geogaceta* 50(2): 113-116 (in spanish).
- Salazar, A., Mata, P., Valero-Garcés, B.L., Moreno, A., Barreiro, F. **Jambrina, M.** 2011. La necesidad de actualizar y revisar los inventarios del patrimonio geológico. Dos ejemplos en el valle de Pineta (Pirineo, Huesca) In: Fernández-Martínez, E. y Castaño de Luis, R. (Eds). *Avances y retos en la conservación del Patrimonio Geológico en España. Actas de la IX Reunión Nacional de la Comisión de Patrimonio Geológico (Sociedad Geológica de España)*. Universidad de León. pp: 248-252 (in spanish)
- **Jambrina, M.**, Corrochano, Á., Armenteros, I. 2009. Sedimentology and hydrogeochemistry of the El Cristo and La Cervera ponds (Salamanca, Spain). *Studia Geologica Salmanticensia*, 46(1): 25-46 (in spanish).

Contributions to congresses and workshops

- Valero-Garcés, B., Barreiro-Lostres, F., Moreno, A., Giralt, S., Corella, P., Morellón, M., **Jambrina, M.** (2016). Millennial-scale flood variability in the Iberian Peninsula from Lake Records: a review. PAGES (Past Global Changes) – FLOODS, Cross-community workshop on past flood variability. Grenoble (France), 27-30 June 2016. Oral communication.
- Valero-Garcés, B., Barreiro-Lostres, F., Morellón, M., Corella, P., Moreno, A., Giralt, S., Mata, M.P., **Jambrina, M.**, Vega, J.C. (2015). Abrupt transitions in Iberian Lakes: humans and climate forcings in Mediterranean aquatic environments during the last millenia. PAGES (Past Global Changes) – Aquatic Transitions, Integrating records of aquatic change: existing evidence and missing data. Nottingham (UK), 22-24 April 2015. Oral communication.
- Hernández, A., Trigo, R.M., Pla-Rabes, S., Valero-Garcés, B.L., Jerez, S., Rico-Herrero, M., Vega, J.C., **Jambrina-Enríquez, M.**, Giralt S. (2015). Seasonal influence of the north atlantic atmospheric circulation patterns over iberian lakes. CLIMA-ES 2015. Tarragona (Spain), 11-13 March 2015. Oral communication.
- **Jambrina-Enríquez, M.**, Rico, M., Moreno, A., Leira, M., Bernárdez, P., Prego, R., Recio, C., Vega, J.C., Valero-Garcés, B.L. (2014). The long-term dynamics of Lake Sanabria: a paleolimnological view. WVII Congress of the Iberian association of Limnology – Limnologia 2014 Congress, Santander (Spain), 6-11 July 2014. Oral

communication.

- Leira, M, **Jambrina-Enrriquez, M**, Negro, A.I., Rico, M., Moreno, A., Bernárdez, P., Prego, R., Recio, C., Valero-Garcés, B.L. (2014). Long-term dynamics of diatom assemblages in Sanabria Lake: a sediment core study. WVII Congress of the Iberian association of Limnology – Limnologia 2014 Congress, Santander (Spain), 6-11 July 2014. Oral communication.

- **Jambrina-Enrriquez, M.**, Rico, M., Moreno, A., Prego, R., Bernárdez, P., Leira, M., Valero-Garcés, B.L. (2014). Timing and dynamics of deglaciation and Holocene environmental change in NW Iberian Peninsula: The Sanabria Lake Record. COST INTIMATE MC Final Workshop. Zaragoza (Spain), 16-18 June 2014. Poster.

- Valero-Garcés B.L., **Jambrina-Enrriquez M.**, Rico M., Moreno A., Prego R., Bernárdez P., Leira, M. (2013). Timing and dynamics of deglaciation and Holocene climate change in NW Iberian Peninsula: The Sanabria Lake record. American Geophysical Union's 46th annual Fall Meeting (AGU). San Francisco, California. 9-13 December 2013. Oral communication.

- **Jambrina M.**, Armenteros I., Recio, C. Marcadores geoquímicos de la laguna del Cristo en el piedemonte norte de la sierra de Tamames (Salamanca). (2013). VII Congreso Ibérico y X Congreso Nacional de Geoquímica, Soria (Spain), 21-23 September 2013. Oral communication.

- Hernández A., Trigo R.M., Jerez S., Rico-Herrero M.T., Vega J.C., **Jambrina-Enrriquez M.**, Valero-Garcés B.L., Giralt S. Evaluating the potential of Iberian lakes as sensors of climate circulation patterns. (2013). European Geosciences Union General Assembly (EGU-2013). Vienna (Austria), 7-12 April 2013. Poster

- **Jambrina M.**, Recio C., Valero-Garcés B., Rico M., Moreno A. Geochemical signatures (TOC, TN, $\delta^{13}\text{C}_{\text{org}}$) of Glacial Lake Sanabria sedimentary sequence (NW Spain). (2011) 5th International Limnogeology Congress-ILIC 2011. Konstanz (Germany, August 31st - September 3rd 2011. Poster.

- Salazar, A., Mata, P., Valero-Garcés, B.L., Moreno, A., Barreiro, F. **Jambrina, M.** La necesidad de actualizar y revisar los inventarios del patrimonio geológico. Dos ejemplos en el valle de Pineta (Pirineo, Huesca). (2011). IX Reunión Nacional de la Comisión de Patrimonio Geológico (Sociedad Geológica de España), León (Spain), 14-18 June 2011. Oral communication.

- **Jambrina M.**, Rico M., Moreno, A., Valero Garcés B. La secuencia sedimentaria del Lago de Sanabria (Zamora, Noroeste de España). (2011) 50 Sesión Científica de la sociedad geológica de España, Vigo (Spain), May 27th 2011. Oral communication.

Participation in science divulgation events

- Scientist guide for the first 'Geolodía' of the province of Zamora. Geolodía11 – 'Sanabria, tras las huellas de los glaciares'. Zamora, Spain, May 8th 2011. http://www.sociedadgeologica.es/divulgacion_geolodia.html. Geolodía is an outreach initiative of Geology and the profession of geologist. The Geolodía consists of a set of free tours, guided by geologists and open to all audiences. The promoters of Geolodía are: Geological Society of Spain (SGE), the Spanish Association for the Teaching of Earth Sciences (AEPECT) and Geological Institute and Mining of Spain (IGME).

Technical skills

Analytical laboratory skills and instruments

- Extraction of lipids from sediments and plants using ASE 350 Dionex and purification with column chromatography (SPE).
- Separation, identification and quantification of biomarker compounds on an Agilent GC-MSD/FID system.
- Determination of the stable carbon and hydrogen isotope ratios of individual biomarker compounds on GC-C-

IRMS (ThermoFisher Delta V Plus IRMS).

- Preparation of sediment samples for stable isotope analysis in organic matter ($\delta^{15}\text{N}$ and $\delta^{13}\text{C}$), carbonate mineral phases ($\delta^{13}\text{C}$ and $\delta^{18}\text{O}$) and sulphates mineral phases ($\delta^{34}\text{S}$ and $\delta^{18}\text{O}$).
- Extraction and separation of fossil and modern lacustrine diatoms for stable isotopic analysis ($\delta^{18}\text{O}_{\text{BioSi}}$).
- Preparation of water samples for isotopic analysis: $\delta^{34}\text{S}(\text{SO}_4)$, $\delta^{18}\text{O}(\text{SO}_4)$, $\delta^{15}\text{N}(\text{NO}_3)$, $\delta^{34}\text{S}(\text{S}^-)$, $\delta^{13}\text{C}(\text{DIC})$, $\delta^{13}\text{C}(\text{POM})$, $\delta^{13}\text{C}(\text{CO}_3\text{Sr})$, $\delta^{18}\text{O}$ and δD
- Extraction lines for the measurement of stable isotope ratios (Carbonate and Sulfur Lines).
- EuroVector Euro EA3000 elemental analyzer
- ISOPRIME and SIRA II Isotope Ratio Mass Spectrometers
- Preparation of water samples for ICP-MS and ICP-OES.
- Preparation and extraction of clay fraction and bulk sample for XRD.
- X-ray diffraction (Bruker D8 Advance) and interpretation of XRD-diagrams.
- 6770 Freezer/Mill®

Fieldwork skills and participation in project campaigns

- In-situ measurements of physical-chemical parameters with different multiparametric probes (e.g. temperature, pH, conductivity, dissolved oxygen, turbidity) and water sampling with Niskin bottle.
- Sampling of superficial sediments in lakes with short-coring systems.
- Manual piston corer (Livingstone core sampler).
- Recovery by 'Livingstone corer and Uwitec system on floating platform in lakes.
- Sampling in-situ for ^{137}Cs / ^{210}Pb dating.
- Participation in project campaigns:

LAGUNAS DE VILLAFÁFILA (Zamora, Spain) – Research campaign (Febrero 2016).

SANABRIA-LAKE (Zamora, Spain) - PhD project (2009-2014).

GLOBALKARST project campaign (La Parra lake, Cuenca, Spain) (May 2010)

HORDA project campaign (La Estiva and La Larri, Huesca, Spain) (July 2010).

EL CRISTO and LA CERVERA ponds (Salamanca, Spain) – M.Sc project (2007-2009) and Research campaign (2010 - 2014).

Data processing skills

- Multivariate statistical analysis: SPSS 14.0 and SigmaPlot 12.
- Graphics design software, such as Photoshop or Freehand.
- Microsoft Windows operating system.

Language skills

- Good knowledge of Spanish (mother language) and English.
- Basic knowledge of German.

Miscellaneous

- Professional Music Degree - Piano, Conservatory of Music - Zamora (Spain), 2002.
- Driving licence (Spain, B1 type)