

ÉGÜEZ, NATALIA

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### Research interests

- Soil micromorphology, lipid analysis, stable isotope biochemistry in coprolites and sediments.
- Taphonomy of organic matter in habitation sites of past and current hunters-gatherer and nomadic pastoral societies.
- Multi-proxy palaeo-environmental reconstruction of Palaeolithic, Neolithic, Bronze and Iron Age sites.

### Current positions

- Postdoctoral Fellow, Department of Maritime Civilizations, University of Haifa, ISR (since 01/04/2021).
- Research fellow at the Archaeological Micromorphology and Biomarkers Laboratory (AMBI Lab), University of La Laguna, ESP (since 2017).
- Research fellow at the Prehistory Research and Studies Seminar Research Group (SERP), Department of History and Archaeology, University of Barcelona, ESP (since 2011).

### Education and academic history

- 2019-21** Postdoctoral Research Fellow at the Archaeological Micromorphology and Biomarkers Laboratory, University of La Laguna, ESP (since 28/05/2019 to 31/03/2021).
- 2019-20** Postdoctoral visiting scholar at the McDonald Institute for Archaeological Research, University of Cambridge, UK (since 15/01/2019 to 15/01/2020).
- 2018** PhD *Magna Cum Laude* in Natural Sciences (*Dr. rer. nat.*). Graduate School Human Development in Landscapes, Institute of Pre- and Protohistoric Archaeology, University of Kiel, DEU. Supervisors: Prof Dr C. Makarewicz and Dr C. Mallol (date of award: 14/12/2018).
- 2017** PhD visiting student at the Archaeological Micromorphology and Biomarkers Research Laboratory, University of La Laguna, ESP (01/01/2017 to 30/09/2017).
- 2016** Postgraduate course in *Stable Isotope Ecology*, Faculty of Mathematics and Natural Sciences, University of Kiel, DEU (21/04/2016 to 21/07/2016).
- 2015** Postgraduate course in *Archaeology of Pastoralism*, Institute of Pre- and Protohistoric Archaeology, University of Kiel, DEU (23/03/2015 to 23/07/2015).
- 2012-14** Research Associate at the Prehistory Research and Studies Seminar Research Group, Department of History and Archaeology, University of Barcelona, ESP (19/10/2012 to 20/10/2014).
- 2012** MA in *Archaeology*. Faculty of Geography and History, University of Barcelona, ESP (19/09/2011 to 07/09/2012).
- 2009** PGCE in *Geography*. History and Art History, Education Sciences Institute, University of Barcelona, ESP (06/10/2008 to 15/05/2009).
- 2008** BA in *Physical Geography*. Faculty of Geography and History, University of Barcelona, ESP (22/09/2003 to 14/07/2008).

### Relevant grants/fellowships and funding

- 2021** Marie Skłodowska-Curie actions Horizon 2020 (as Principal Investigator): "IBERHUNT: Palaeolithic ungulate hunting strategies in the eastern Iberian Peninsula through advanced proteomic profiling". Universidad de La Laguna and University of California Davis (Global H2020-MSCA-IF-2020, 01/2022-01/2025, 263,732.16€)
- 2020** Fundación Palarq project grant (as Principal Investigator): "Arqueología del pastoralismo nómada en Mongolia: las huellas invisibles de los espacios domésticos". (€7.000)
- 2019-20** Council for Higher Education Internationalization Project (as Principal Investigator), University of Haifa, ISR (NIS 69.000).
- 2019** Rust Family Foundation Grant (as co-investigator) 'Invisible Archaeology: Geophysical and Geoarchaeological Investigation of Mobile Pastoralist Campsites in Mongolia'; #RFF-2019-90: \$6211

- 2018 National Geographic Early Career Grant (as Principal Investigator): *Investigating pastoral ethnoarchaeology in Western Mongolia: biomolecular signatures of habitation sites* (EC-216R-18, €3,400).
- 2018 WKU Research & Creative Activities Program (RCAP) (as co-investigator). “Investigating Pastoral Ethnoarchaeology in Mongolia: geochemical and biomolecular signatures of habitation sites”. Award Number: #19-8023. Start Date: May 15, 2018, End Date: December 15, 2019 - \$8000.
- 2015-17 Graduate School Human Development in Landscapes Research Grants Programme. Funded by University of Kiel (€18,000).
- 2014-17 Predoctoral position at the Graduate School Human Development in Landscapes. Funded by University of Kiel (€73,200).
- 2014 Workshop organisation: *Fire and Prehistory: Geoarchaeological Perspectives*. Funded by University of Barcelona and Generalitat de Catalunya (€2,000).

### Peer-reviewed publications

- 2021 Seitsonen, O.; **Égüez, N.** Here be Reindeer: Geoarchaeological Approaches to the Transspecies Lifeworlds of the Sámi Reindeer Herder Camps on the Tundra. *Iskos* 24. In press.
- 2020 Sanz, M., Daura, J., Cabanes, D., **Égüez, N.**, Carrancho, A., Badal, E., Souto, P., Rodrigues, F., Zilhao, J., Early evidence of fire in south-western Europe: the Acheulean site of Gruta da Aroeira (Torres Novas, Portugal). *Scientific Reports* 10, 12053.
- 2020 **Égüez, N.**, Dal Corso, M., Wieckowska-Lüth, M., Delpino, C., Tarantino, M., Biagetti, S. A pilot geo-ethnoarchaeological study of dung deposits from pastoral rock shelters in the Monti Sibillini (central Italy). *Archaeological and Anthropological Sciences*, 12, 114.
- 2019 Sanchis A., Real, C., Sauqué, V., Núñez-Lahuerta, C., **Égüez, N.**, Tormo, C., Pérez-Ripoll, M., Carrión-Marco, Y., Duarte, E., De la Rasilla, M., Neanderthal and carnivore activities at Llonin Cave, Asturias, Northern Iberian Peninsula: faunal study of Mousterian levels (MIS 3). *Comptes rendus Palevol.* 18, 1:113-141.
- 2018 **Égüez, N.**, Makarewicz, C.A., Carbon isotope ratios of plant *n*-alkanes and microstratigraphy analyses of dung accumulations in a pastoral nomadic winter campsite (Eastern Mongolia). *Ethnoarchaeology. Journal of Archaeological, Ethnographic and Experimental Studies*, 10, 2:141-158.
- 2018 **Égüez, N.**, Zerboni, A., Biagetti, S., Microstratigraphic analysis on a modern central Saharan pastoral campsite. Ovicaprine pellets and stabling floors as ethnographic and archaeological referential data. *Quaternary International* 483: 180-193.
- 2017 Sanz, M., Daura, J., **Égüez, N.**, Cabanes, D., On the track of anthropogenic activity in carnivore dens: Altered combustion structures in Cova del Gegant (NE Iberian Peninsula). *Quaternary International* 437: 102-114.
- 2016 **Égüez, N.**, Mallol C., Martín-Socas D., Camalich D., Radiometric dates and micromorphological evidence for synchronous domestic activity and sheep penning in a Neolithic cave: Cueva de El Toro (Málaga, Antequera, Spain). *Archaeological and Anthropological Sciences* 8, 1: 107-123
- 2016 Sanz, M., Daura, J., **Égüez, N.**, Brugal, J.P., Not only hyenids: A multi-scale analysis of Upper Pleistocene carnivore coprolites in Cova del Coll Verdaguer (NE Iberian Peninsula). *Palaeogeography, Palaeoclimatology, Palaeoecology* 443, 1:249-262.
- 2016 Driscoll, K., Alcaina, J., **Égüez, N.**, Mangado, X., Fullola, J.M., Tejero, J.M., Trampled under foot: a quartz and chert human trampling experiment at the Cova del Parco rock shelter, Spain. *Quaternary International* 424: 130-142.

### Articles and chapters in collective volumes

- 2017 Brönnimann, D., Pümpin, C., Ismail-Meyer, K., Rentzel, P., **Égüez, N.** Excrements of omnivores and carnivores. In: Nicosia, C. & Stoops, G. (eds.) *Archaeological soil and sediment micromorphology*. Wiley-Blackwell, Chichester, UK: 67-81.
- 2016 Duarte, C., **Égüez, N.**, Gutiérrez, M., Pérez, A., The application of micromorphology on Holocene anthropogenic deposits in the Iberian Peninsula: current knowledge and future perspectives, in: Coelho, I. P.; Torres, J. B.; Gil, L. S.; Ramos, T. (coord.), *Entre ciência e cultura: Da interdisciplinaridade à transversalidade da arqueologia*. Actas das VIII Jornadas de Jovens em Investigação Arqueológica. Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa, PRT.
- 2015 Mangado, X., Sánchez de la Torre, M., Tejero, J-M., **Égüez, N.**, Garcia-Argüdo G., Pérez-Parque, O., Fullola, J.M., Petit, M.a., Bartrolí, R., Darrereres aportacions al coneixement del Paleolític superior final al vessant sud dels Pirineus occidentals catalans: la transició entre el Magdalenian superior i el Magdalenian mitjà a la Cova

del Parco (Alòs de Balaguer, la Noguera). *Primeres Jornades D'arqueologia I Paleontologia De Ponent*. Generalitat de Catalunya. Spain.

### Team member in ongoing international research projects

- *Insights into the Neanderthals and their demise from the study of microscopic and molecular charred matter in Middle Palaeolithic sediments (PALEOCHAR)*. ERC-2014-CoG (n. 648871).
- *Modelling Anthropocene Trophic Cascades of the Judean Desert Ecosystem: A Hidden Dimension in the History of Human-Environment Interactions (DEADSEA\_ECO)*. ERC-2018-StG (n. 802752).
- *Las sociedades cazadoras-recolectoras del Paleolítico superior y los primeros humanos modernos en Portugal (Abrigo del Lagar Velho, Valle de Lapedo)* (as co-investigator). 2020/2021 T002020N0000045536 (€13.500).
- *Kachchh Archaeological Project: trade, pastoralism and the origins of the Indus Valley Civilisation*. Fundación Palarq, 2020.
- Centre Jacques Berque, Rabat CNRS USR 3136. Archéologie et Ethnographie de L'occupation et Mobilité des Agro-Pasteurs de Sirwa, Morocco (ARCHEOMOBAS) (as co-investigator). Universidad de la Laguna (CJB-2020, 750€).
- *Sistema de etiquetado de imágenes basado en una red neuronal para la descripción micromorfológica en arqueología*. ULL, Ayudas A Nuevos Proyectos De Investigación: Iniciación A La Actividad Investigadora 2019.
- *Estudio de Investigación geoarqueológica de alta resolución en el yacimiento de la Cueva Pintada de Gáldar (Gran Canaria)*. Museo y Parque Arqueológico Cueva Pintada 2018.
- *Western Mongolia Archaeology Project*. Western Kentucky University and National Museum of Mongolia.
- *Climatic changes during the Pleistocene superior to the Catalan central coast and the impact on Neandertal and anatomically modern human populations*. Catalan Government (CLT009/18/00022).
- *Plistocè superior i Holocè a la conca mitja i alta del Segre* Catalan Government (CLT009/18/00030)
- *First Human Occupations and Palaeoecological context from Plioplistocenes deposits of Cuenca Guadix-Baza (Orce, Spain)*. Spanish Ministry of Science and Innovation (B120489SV18BC).
- *Archaeology and Evolution of Early Humans in the Western Façade of Iberia (ARQEVO)*. Portuguese Foundation for Science and Technology (PTDC/HAR-ARQ/30413/2017).

### Organization of scientific meetings

- 2019** Workshop co-organiser: *Workshop on GIS, remote sensing and geoarchaeology*. Department of Archaeology, University of Kerala (Thiruvananthapuram, India, 14-19 November).
- 2019** Workshop co-organiser: *Ibero-British Archaeology: beyond borders (IberoArchUK 2019)*. McDonald Institute for Archaeological Research, University of Cambridge, UK (20 May).
- 2019** Session Co-convener: *Empirical Approaches to Mobile Pastoralist Households*. Society for American Archaeology 84th Annual Meeting (Albuquerque, US, 10 – 14 April).
- 2018** Session Co-convener: *Integrative approaches to the study of animal husbandry, plant resource management and their impact on the landscape*. 24th European Association of Archaeologists Annual Meeting. Faculty of Geography and History, University of Barcelona, ESP (5-8 September).
- 2018** Session Co-convener: *From sediments to behaviour and palaeoenvironments: interdisciplinary approaches to hunter-gatherer contexts during the Late Glacial-Early Holocene*. 24th European Association of Archaeologists Annual Meeting. Faculty of Geography and History, University of Barcelona, ESP (5-8 September).
- 2015** Session Co-convener: *Microarchaeology: tracking the hidden archaeological record through multidisciplinary analysis*. VIII Young Researchers in Archaeology Conference (JIA). Faculdade de Ciências Sociais e Humanas, University of Nova de Lisboa, PRT (21-24 October).
- 2014** Organisation of workshop: *Fire and Prehistory: Geoarchaeological Perspectives*. Department of Prehistory, Ancient History and Archaeology, University of Barcelona (24 April).
- 2013** Workshop co-organiser: *Archaeological Soil Micromorphology*. VI Young Researchers in Archaeology Conference (JIA). Department of Prehistory, Ancient History and Archaeology, University of Barcelona (7-11 May).

## Teaching and invited talks

- 2021** *Geo-archaeology as a tool to study site formation (and other things) through micromorphology and isotope biochemistry*. Lecture for PhD' students (Interdisciplinary Center for Archaeology and Evolution of Human Behaviour ICArEHB, University of Algarve, Portugal, 11th May).
- 2021** Webinar session of the series 'Recent Advances in the Study of the Ancient Mediterranean'. *Geo-archaeology as a tool to study past pastoralism: micromorphology and isotope biochemistry in sediments and animal dung* (Arqueologia del paisatge GIAP, Institut Català d'Arqueologia Clàssica, Tarragona, 8<sup>th</sup> April).
- 2020-21** Co-lecturer in *Prehistory I and II* (BA in History). University of La Laguna, ESP
- 2020** *La Geo-arqueología como herramienta para estudiar sociedades nómadas: micromorfología y bioquímica en depósitos de excrementos animales*, 27th November 2020, Anthropology Talks Series, Universidad Nacional Autónoma de Mexico (UNAM).
- 2020** "Geo-ethnoarchaeology of habitation sites. Searching for molecular footprints of animal husbandry in the Mongolian Bronze Age". 2nd October 2020, Brown Bag Lecture Series, Yale University.
- 2019-20** Co-lecturer in *Prehistory II* (BA in History). University of La Laguna, ESP
- 2019** *Current approaches to Geoarchaeology and Ethnoarchaeology*. Workshop on GIS, Remote Sensing and Geoarchaeology. University of Kerala (Thiruvananthapuram, IND, 14-19 November).
- 2019** *The Geo-Ethnoarchaeology of pastoral herding in alpine desert habitats*. Swiss International Summer School for Alpine Archaeology (SISA), University of Bern (Binn, Switzerland, 6-10 July).
- 2019** *La Geo-arqueología como herramienta para estudiar sociedades móviles: micromorfología y bioquímica en depósitos de excrementos animales*. Lecture for MA in Archaeology, Department of Prehistory, Ancient History and Archaeology, University of Barcelona (Barcelona, ESP, 03 April).
- 2018** *La Geoarqueología como herramienta para el estudio de sociedades nómadas. El caso de los pastores de Mongolia*. Workshop Microhistorias de la tierra. Geoarqueología de alta resolución en la investigación de las sociedades del pasado. University of Granada (Granada, ESP, 27 April).
- 2017** *Micromorphology and Biomarkers in ethnoarchaeological stabling deposits*. Workshop on DNA, Organic Chemistry and Geoarchaeology in the first pastoral practices from Southeastern Europe. University of the Basque Country (Vitoria, ESP, 10-11 April).
- 2017** *Pastoralist Geo-Ethnoarchaeology in Eastern Mongolia: micro-characterization of stabling spaces and dung fuel management in mobile communities*. Ethnoarchaeology of Fire symposium. Archaeological Micromorphology and Biomarkers Laboratory, University of La Laguna (Tenerife, ESP, 9-12 February). With C. Makarewicz.
- 2016** *Ethnoarchaeological approaches to Mongolian herders and their stabling practices*. 1st meeting of the Geoarchaeological Laboratories Network. McDonald Institute for Archaeological Research, University of Cambridge (Cambridge, UK, 16-17 January).

## Conference communications

- 2021** **Égüez, N.**, Jambrina-Enríquez, M., Seitsonen, o., Broderick, L-G., Bayarshaikhan, J., Houle, J-L. *Application of Compound Specific Stable Isotope Analysis in sediments for tracing environmental changes. A 4000 BP multiperiod habitation site in the Züünkhangaï region (Mongolia)*. 9th Developing International Geoarchaeology Conference (DIG) (17-21 May, online).
- 2021** **Égüez, N.**, Jean-Luc Houle, Oula Seitsonen and Jamsranjav Bayarsaikhan. *Herbivore Dung Biomarkers: A Reference Collection for the Archaeology of Pastoral Domestic Spaces in Western and Central Mongolia*. 86th Annual Meeting Society for American Archaeology (SAA) (15-17 April, online)
- 2019** **Égüez, N.**, *Investigation of foddering strategies in pastoral context through micromorphology and lipid biomarkers analysis*. Ibero-British Archaeology: beyond borders (IberoArchUK 2019). McDonald Institute for Archaeological Research, University of Cambridge, UK (20 May).
- 2019** **Égüez, N.**, Buonasera, T., Houle, J-L., Bayarsaikhan, J. *Investigating Fatty Acid Profiles in Sediments. Household and Activity Areas in Western Mongolia Winter Campsites*. Society for American Archaeology 84th Annual Meeting (Albuquerque, US, 10 – 14 April).
- 2019** **Egüez, N.** (as panel member discussant). *Charred organic matter in the archaeological sedimentary record*. Society for American Archaeology 84th Annual Meeting (Albuquerque, US, 10 – 14 April).
- 2019** **Égüez, N.**, C.A., Makarewicz. C., *Molecular footprints of animal husbandry in two ecological zones in Eastern Mongolia: implications for archaeological research*. International Open Workshop "Socio-

- Environmental Dynamics over the last 15.000 years: The Creation of Landscapes VI” (Kiel, DEU, 11-16 March).
- 2018** **Égüez, N.**, Sánchez de la Torre, M., Oms, X., Martínez-Grau, H., Mangado, J., *Looking into a Neolithic-Bronze Age fumier at Abric del Xicotó (Spain): a micromorphological and biomolecular investigation*. 24th European Association of Archaeologists Annual Meeting (Barcelona, ESP, 5-8 September).
- 2018** **Égüez, N.**, C., Makarewicz, C., *Animal husbandry biomarkers in pastoral nomadic winter campsites in Eastern Mongolia. Carbon isotope ratios of plant n-alkanes in dung deposits*. 13th International Council for Archaeozoology (Ankara, TR, 2-7 September).
- 2018** **Égüez, N.**, Gillis, R., Makarewicz, C., *Chemical characterization of cattle dental cementum from Late Neolithic Jarlshof (Scotland, United Kingdom)*. 13th International Council for Archaeozoology (Ankara, TR, 2-7 September).
- 2018** **Égüez, N.**, Acosta-García, N., Mallol, C., *Fluorescence applied to modern carnivore excrements. A reference collection for archaeological deposits*. Society for American Archaeology 82nd Annual Meeting (Washington, US, 11 – 14 April).
- 2017** **Égüez, N.**, Mallol, C., Makarewicz, C., *Microstratigraphic Investigation of Nomadic Pastoral Campsites in Eastern Mongolia. Biomarkers in sediments*. Society for American Archaeology 82nd Annual Meeting (Vancouver, CAN, 29 March - 2 April).
- 2017** **Égüez, N.**, Mallol, C., Makarewicz, C., *Pastoralist Geo-Ethnoarchaeology in mobile communities from Eastern Mongolia Gobi Desert steppe*. Workshop on socio-ecological systems: empty spaces or creative interfaces? A multi-scalar perspective on current dryland archaeology. Universitat Pompeu Fabra (Barcelona, ESP, 15-15 February).
- 2016** **Égüez, N.**, Mallol, C., Zerboni, A., Biagetti, S., Makarewicz, C., *Microstratigraphic analysis on a modern central Sahara pastoral campsite: Ovicaprines pellets and stabling floors as ethnographic referential data*. 8th World Archaeological Congress, (Kyoto, JPN, 28 August-2 September).
- 2016** **Égüez, N.**, Mallol, C., Makarewicz, C., *Management of dung in pastoral campsites along north to south Eastern Mongolia*. 8th World Archaeological Congress, (Kyoto, JPN, 28 August-2 September).
- 2015** **Égüez, N.**, Mallol, C., Makarewicz, C., *Identifying ovicaprine stabling floors in ethnographic pastoral campsites through microstratigraphic analysis*. Current Ethnoarchaeology Conference (Rome, ITA, 25-27 November).
- 2015** **Égüez, N.**, Mallol, C., Makarewicz, C., Ruth Blasco, Rosell, J., Rivals, F., Morin, E., Bachelier, F., Crevecoeur, I., Rougier, K., *Micro-characterization of carnivore coprolites: a contribution to the study of Pleistocene anthropogenic sedimentary deposits*. Developing International Geoarchaeology (Sardinia, ITA, 8-12 June).
- 2014** **Égüez, N.**, Mallol, C., Martín Socas, D., Camalich, M. D., *Estudio microestratigráfico de Cueva de El Toro: resultado del muestreo preliminar. I Seminario de Prehistoria. La Cueva de El Toro (Antequera, Málaga) y el Neolítico en Andalucía*. University of La Laguna (Tenerife, ESP, 22-23 January).

#### Relevant participation in network and training meetings and courses

- 2021** ViMi - Virtual Micromorphology Meeting (online, 23<sup>rd</sup> April).
- 2020** National Geographic Society Sciencetelling Bootcamp courses on *Social Media* and *Photography* (March-May).
- 2019** International Workshop on *Archaeological Soil Micromorphology*. University of Basel, Switzerland (2-4 September).
- 2017** Initial technical and analytical training in *GC-C/TC-IRMS (CNH GC Isolink - Delta V Advantage)*. Instituto Universitario de Bio-Organica Antonio González, University of La Laguna, ESP (7-9 March).
- 2016** *FTIR and Micro-FTIR Block* seminar. Institute for Archaeological Sciences, University of Tübingen, DEU (4-12 June).
- 2014** Short course on *forest fire effects on soil properties*. European Geosciences Union General Assembly (Vienna, AUT, 1 May).
- 2012** 14th International Working Meeting on *Soil Micromorphology*. University of Lleida, ESP (8-14 July).
- 2011** Intensive short course in *Archaeological Soil Micromorphology*. Institute of Archaeology, University College London, UK (7-12 November).

#### Fieldwork experience

- 2021** Archaeological survey and excavation at the *Judean desert* (Pleistocene to Holocene cave deposits) with University of Haifa, ISR.
- 2018-19** Ethnographic and archaeological survey in *Central and Western Mongolia* (Bronze and Iron Age) with Western Kentucky University, US, and National Museum of Mongolia.
- 2017** 1) Ethnographic and archaeological survey in *Western Mongolia* (Bronze and Iron Age) with Western Kentucky University and National Museum of Mongolia; 2) Excavation at *Abric del Xicotó*, ESP (Early Neolithic) with University of Barcelona; 3) *Orce* sites complex (Plio-Pleistocene) with University of Granada, ESP.
- 2015** Ethnographic and archaeological survey in *Eastern Mongolia* (Bronze Age) with University of Kiel, DEU.
- 2014** Fieldwork and excavation at: 1) *Grotte Mandrin*, FRA (Middle Palaeolithic) with URM 5608 TRACES; 2) *Cova Bonica*, ESP (Neolithic) with University of Barcelona; 3) *Abric del Pastor*, ESP (Middle Palaeolithic) with University of la Laguna; 4) *Cova del Gegant*, ESP (Middle Palaeolithic) with University of Barcelona, ESP.
- 2013-15** Fieldwork and excavation at *Abric de El Salt*, ESP (Middle Palaeolithic) with University of la Laguna, ESP.
- 2008-17** Fieldwork and excavation at *Cova del Parco*, ESP (Epipalaeolithic and Upper Palaeolithic) with University of Barcelona.
- 2007-08** Fieldwork and excavation at *Pollentia* (Roman period, I aC - III dC) with University of Barcelona, ESP

### Memberships

- Society of American Archaeology (SAA).
- European Archaeologists Association (EAA)
- International Working Group on Archaeological Soil Micromorphology (WASM).
- GDRI European Network for Quaternary Taphonomy (TAPHEN).