

Curriculum vitae

PERSONAL INFORMATION

Name **MÓNICA BOLÍVAR FERICHE**

Nationality Spanish

Date of birth 16 JUNE 1993

EDUCATION AND TRAINING

ACADEMIC BACKGROUND

- September 2011 – July 2016
- Organization providing education and training
 - Principal subjects/occupational skills covered
- BACHELOR'S DEGREE IN GEOLOGY**
- Facultad de Ciencias, Universidad de Granada and some subjects in the Jagiellonian University (Krakow, Poland) (Erasmus Program).
- Competences: Understand the interactions between the lithosphere, hydrosphere, biosphere and atmosphere through the history of the Earth; Know the formation processes of sedimentary, metamorphic and igneous rocks and their minerals, as well as identify them in the field and in thin section; Identify the principal fossils, their ages and paleoenvironments; Know the different types of natural hazards and the methods used for identification and evaluation; Interpret existing geological maps and cross-sections and perform autonomous geological mapping in the field; Understand geomorphological features and the landscape in general; Know the geological history of the Earth and specially of the Iberian peninsula.
- Undergraduate dissertation (TFG) on Paleontology and Paleocology. Title: "Growth patterns of coralline algae as palaeobathymetry markers: analysis by Environmental Scanning Electron Microscope (ESEM)".
- September 2016 – September 2017
- Organization providing education and training
 - Principal subjects/occupational skills covered
- MASTER'S DEGREE IN GEOPHYSICS AND METEOROLOGY (GEOMET)**
- Facultad de Ciencias, Universidad de Granada.
- Competences: Identify and characterize the properties of different geophysical and meteorological/climatic subsystems; assess the contributions of different geophysical and meteorological methods to the knowledge of Earth and Atmosphere; analyze distinct geophysical and meteorological/climatic processes and their different temporary space scales, together with theories and laws operating and models trying to explain the observations; understand environmental processes and their linked risks to apply the appropriate techniques and methods; know about exploratory techniques of natural or energetic resources employed in geophysics; learn the basic instrumentation used for geophysical and meteorological data as well as interpret and represent those data by means of adequate field and laboratory techniques; utilize suitable statistical methods for the geophysical and meteorological data processing and analysis.
- Master's thesis (TFM) on climate variability. Title: "Registros geológicos de cambio climático en afloramientos pleistocenos del peñón de Gibraltar (Sur de Iberia)".
- November 2018 – IN PROGRESS
- Organization providing education and training
 - Thesis title
 - Aim of the project
 - Expected results
- PHD IN EARTH AND MARINE SCIENCES (EMAS)**
- University of Ferrara and University of Cádiz
- Re-assessment of Miocene Larger Foraminiferal Biostratigraphy in the western Mediterranean*
- The aim of this project is to improve the Shallow Benthic foraminiferal biozones (SBZ) for the Miocene in the western Mediterranean region
- Identification and stratigraphic distribution of the LBF assemblages
- Biostratigraphical zonation based on some LBF groups (like, Nummulitids (Heterostegina, Operculina), Miogypsinids (Miogypsina, Miogypsinoides) and Alveolinids (Borelis) for the Miocene shallow-water deposits in selected stratigraphical sections of different Betic Basins. (define the LBF zonations)

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- Correlation with other LBF zonations (ej. central-eastern Mediterranean basin)
- Correlation of the defined LBF zones with the standard chronostratigraphic scale based on the P (planktonic foraminiferal) and NP (nannoplankton) zones –en nuestras secciones, correlacionaremos con cambios de facies a margas que es donde están los f planktónicos. (Relative geological ages) Si falla este método, acudiríamos al Sr-isotope para obtener valores absolutos.
- Additional Calibration: Sr-isotope stratigraphy
- Paleoecological and paleobiogeographic reconstructions.

TRAINING COURSES

19 February 2015 – 28 March 2015 (25 hours)	“13º CURSO SOBRE ACTUALIDAD CIENTÍFICA: MOMIAS, TESTIGOS DEL PASADO”
<ul style="list-style-type: none">• Organizing entity• Place of performance	Universidad de Granada and Parque de las Ciencias. Parque de las Ciencias, Granada.
• Principal subjects/occupational skills covered	Several conferences; Round table discussions; Guided visit to exhibition “Momias, testigos del pasado” and scientific visit to paleontological sites: Castellón Alto in Galera and Orce paleontological site (Granada).
18 July 2016 – 21 July 2016 (30 hours)	“PALEONTOLOGÍA DEL CUATERNARIO EN LA CUENCA DE GUADIX: IDENTIFICACIÓN DE MAMÍFEROS A TRAVÉS DE SUS HUESOS (FÓSILES Y ACTUALES)”
<ul style="list-style-type: none">• Organizing entity• Place of performance	Centro Mediterráneo – Universidad de Granada Guadix, Granada.
• Principal subjects/occupational skills covered	Geologic trip to la Cuenca de Guadix (Granada). General geological context and meaning of geologic landscapes; Guided visit to paleontological center Fonelas P-1 belonging to EPVRF (IGME) in Fonelas. Georadar prospecting in field to detect fossils in the subsoil; Fossils sampling. Taphonomic considerations in the field: natural biases in the transmission of information between biosphere and lithosphere; Visit to EPVRF facilities. Identification of big and small mammals through their bones and teeth and taxonomic classification; Several conferences.
May 2018 (20 hours)	“FUENTES DE INFORMACIÓN GEOGRÁFICA Y MODELOS DIGITALES DEL TERRENO (LÍDAR, TIN, ETC.) (2ª EDICIÓN)”
<ul style="list-style-type: none">• Organizing entity• Place of performance	Spin-Off GIS4tech, Universidad de Granada. Escuela Técnica Superior de Ingeniería de Caminos, Canales y Puertos, Granada.
• Principal subjects/occupational skills covered	Elementary data sources (topographic survey/GPS, from Excel to GIS, from CAD to GIS). Errors homogenization and debugging; Secondary data sources (data collecting from internet, metadata, catalogues, spatial data, OGC services (WMS, WFS, WCs, ...)); High resolution digital terrain and elevation models (MDT, MDS, LIDAR): procedure, debugging and reclassification, extraction. Vectorial structures (TIN). Mapping (level curves, slopes, shades, visual basins). 3D visualization and virtual flights.
6 April 2018 – 11 May 2018 (30 hours)	“PYTHON PARA CÁLCULO CIENTÍFICO Y TÉCNICO (3ª EDICIÓN)”
<ul style="list-style-type: none">• Organizing entity• Place of performance	Centro Mediterráneo – Universidad de Granada Facultad de Ciencias, Granada.
• Principal subjects/occupational skills covered	Data types and structures (integers, real, lists, tuples, strings, sets and dictionaries); procedural and functional programming with Python: functions and modules; Recursiveness. Exceptions treatment and code optimization; Object-oriented programming; symbolic computation and rough calculation (SymPy); Graphic representations and data visualization (Matplotlib and Pyplot/PyLab). Numerical methods with Python (Numpy and SciPy), linear algebra (linalg), non-linear equations (bisect, fsolve), numerical integration (integrate, quad), differential equations (odeint), interpolation (interpolate), curve fitting (polyfit), optimization (optimize), Fourier transforms (fft); statistical methods and data processing with Python (SciPy and Pandas), R code, clustering and time series treatment; interaction with SO and scripting, regular expressions, LaTeX and automatic generation of reports with graphics using Python; widgets (Tkinter), graphic interfaces (wxPython, JPython) and web management (Flask); Python code and C, C++ and Fortran combination, MATLAB/Octave codes adaptation.

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- 5 – 15 September 2018
(30 hours)
- Organizing entity
 - Place of performance
 - Principal subjects/occupational skills covered
- “**LA GEOLOGÍA QUE NO PUEDE FALTAR EN TU MOCHILA PARA DISFRUTAR DEL PAISAJE DE GRANADA (3ª EDICIÓN)**”
- Centro Mediterráneo – Universidad de Granada
Facultad de Ciencias, Granada.
- Theoretical and practical course developed in Granada province. Subjects:
- Las Béticas: por qué y cómo se ha formado una cadena de montañas al lado del mar
 - El relieve de las Béticas en mapas topográficos y tectónicos
 - Geología del entorno de Granada
 - La formación de la Vega de Granada: millones de años en algunos segundos
 - Fallas y terremotos de Granada
 - Geología en Monachil
 - Recursos minerales alrededor de Granada. El oro de los romanos
 - El agua de Granada: acuíferos, fuentes y manantiales
 - Sierra Nevada: de las rocas metamórficas al glaciario
- 9 June 2019 – 24 June 2019
(~93 hours)
- Organizing entity
 - Place of performance
 - Principal subjects/occupational skills covered
- “**12TH INTERNATIONAL SCHOOL ON FORAMINIFERA (ISF)**”
- Grzybowski Foundation
Urbino, Italy
- Taxonomy, Ecology, Biodiversity and Geological History of Benthic and Planktonic Foraminifera. The Course provided a primer on the study of foraminifera and examples of how foraminifera can be used as (paleo)environmental and (paleo)oceanographical proxies. We reviewed the current classification schemes of the foraminifera, discussed their ecology and life history, their usefulness for biostratigraphical applications and use case studies to investigate the geological history of the group with lab and practical sessions. Microscope lab sessions provided the opportunity for participants to learn the foraminiferal genera and species, and view Cretaceous to Neogene foraminiferal assemblages from Petroleum Exploration areas and ODP sites as well as Quaternary and modern assemblages. The entire course consisted of approximately 60 hours of lectures and 60 hours of practical work.

ATTENDANCE AT SEMINARS

- 7 March 2018
- Name of organizing entity
 - Venue
 - Principal skills covered
- “**LAS PATENTES: HERRAMIENTAS CLAVE EN LA INVESTIGACIÓN**”
- Oficina de Transferencia de Resultados de Investigación (OTRI), Universidad de Granada.
Facultad de Ciencias, Granada.
- Use of patent data (own and external) as a source of technological information for research to avoid redundant investigations and achieve innovative results. Search of patent information through specific database like Espacenet, Patentscope (WIPO) or Invenes that offer abundant national or international patent documents collections.
- 19 December 2018
- Name of organizing entity
 - Venue
- “**LA GEMMOLOGIA MODERNA: SERVIZI AL PUBBLICO E APPLICAZIONI AI BENI CULTURALI**”
- Department of Physics and Earth Sciences, University of Ferrara
Via Saragat, 1 –Polo Scientifico e Tecnologico, Blocco B, 44100 Ferrara, Italy
- 5 April 2019
- Name of organizing entity
 - Venue
- “**MONITORARE IL TERRITORIO CON I SATELLITI RADAR**”
- Department of Earth Sciences, University of Pisa
Via Saragat, 1 –Polo Scientifico e Tecnologico, Aula F4, 44100 Ferrara, Italy
- 10 April 2019
- Name of organizing entity
 - Venue
- “**THERMO-BAROMETRIC RECONSTRUCTION OF MAGNETIC CONDITIONS DRIVING ERUPTIONS AT MT. ETNA**”
- Department of Earth and Marine Sciences, University of Ferrara
Via Saragat, 1 –Polo Scientifico e Tecnologico, Blocco F Aula 35, 44100 Ferrara, Italy
- 27 June 2019
- Name of organizing entity
- “**APTIAN OCEANIC ANOXIA: THE SHALLOW MARINE PERSPECTIVE**”
- Department of Earth and Marine Sciences, University of Ferrara. IAS Special Lecture Tour

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- Venue Via Saragat, 1 –Polo Scientifico e Tecnologico, Blocco F Aula F2, 44100 Ferrara, Italy
- Principal skills covered Cretaceous oceanic anoxia is a major research theme in sedimentary geology, palaeontology, and palaeoceanography. Much of the previous research, however, has focussed on basinal anoxia and (hemi)pelagic organic rich sediment (black shale) deposition. This presentation sheds light on the complex processes taking place in the Tethyan carbonate platform domain during the Aptian OAE1a.

- 4 December 2019
• Name of organizing entity “GESTIONE DEI DATI DELLA RICERCA NEL CONTEST DELL’OPEN SCIENCE”
• Venue Department of Earth and Marine Sciences, University of Ferrara
Via Voltapaletto, 11 –Dipartimento di Economia e Management, 44121 Ferrara, Italy

- 6-8 November 2019
• Name of organizing entity “FORMAZIONE AVANZATA IN MATERIA DI PROGETTAZIONE EUROPEA”
• Venue IUSS-Ferrara 1381 in cooperation with Ripartizione Ricerca di Unife
Corso Porta Mare, 2 –IUSS Sede Palazzo Turchi di Bagno, 44121 Ferrara

- 19 November 2019
• Name of organizing entity “MICROSTRUCTURAL INVESTIGATION BY 3D IMAGING METHODS”
• Venue Department of Earth and Marine Sciences, University of Ferrara
Via Saragat, 1 –Polo Scientifico e Tecnologico, 44100 Ferrara, Italy

- 18 March 2020
• Name of organizing entity “LA NUOVA DISCIPLINA IN TEMA DI PROTEZIONE DEI DATI PERSONALI”
• Venue Pubblica Amministrazione in Emilia-Romagna
Modalità full distance dalla piattaforma SELF

OUTSIDE INTERNSHIPS

- 7 March 2017 – 15 June 2017
(125 hours)
• Name and address of employer **MASTER’S DEGREE EXTERNAL PRACTICES**
Centro de Investigación en Química Sostenible (CIQSO), Geochemistry Dept. Associated Unit CSIC-UHU “Contaminación Atmosférica”, Universidad de Huelva. Campus Universitario El Carmen, 21007, Huelva.
- Type of business or sector Public institution.
- Occupation or position held Intern. Under the supervision of Jesús de la Rosa Díaz.
- Main activities and responsibilities Field work (sampling) and laboratory work (sample preparation and analysis). Participation in chemical analysis of rock samples and aerosols using techniques like Inductively Coupled Plasma Mass Spectrometry (ICP-MS) and Scanning Electron Microscopy (SEM); Introduction to dispersion model Hysplit from ARL_NOAA; Also, attendance to the research group activities and seminars.

SCHOLARSHIPS OR GRANTS RECEIVED

- Academic Year 2014 – 2015
• Organization providing funds “BECA DE CARÁCTER GENERAL PARA ESTUDIOS POSTOBLIGATORIOS”
Secretaría de Estado de Educación, Formación Profesional y Universidades, Ministerio de Educación, Cultura y Deporte, Gobierno de España.
• Purpose Transport costs to attend the University in the city.

- Academic Year 2013 – 2014
• Organization providing funds **LLP-ERASMUS PROGRAM**
Junta de Andalucía and Universidad de Granada
• Host University Jagiellonian University, Kraków (Poland).
• Purpose Studying abroad (Geology degree). Subjects coursed: Engineering geology, geophysics, mineralogy and tectonics.

WORK EXPERIENCE

- 31 January 2018 – in progress
(full time) **EMPLOYMENT CONTRACT**

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- Name and address of employer Facultad de Ciencias, Chemical Engineering Dept., Universidad de Granada. Fuentenueva Avenue, 18071, Granada.
 - Type of business or sector Public institution
 - Occupation or position held Research Personnel in training- European Social Fund
 - Main activities and responsibilities Laboratory and research tasks. Petrographic and microstructural characterization of stone materials damaged by biodeterioration. Performance of tests focused on clarifying the impact of microorganisms (such as algae or cyanobacteria) on heritage stone buildings conservation, like Alhambra Palace fountains. These activities are part of the project "Desarrollo de Nuevas Sinergias Arte-ciencia, aplicadas a la Conservación y Restauración de los Palacios y Jardines de la Alhambra y el Generalife" (Virarte), funded by MINECO.
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PARTICIPATION IN CONGRESSES

- 12 June – 15 June, 2018
HERITAGE 2018 – 6TH INTERNATIONAL CONFERENCE ON HERITAGE AND SUSTAINABLE DEVELOPMENT
 - Organizing entity Green Lines Institute
 - Domain International
 - Venue Escuela Técnica Superior de Ingeniería de Edificación, Granada (Spain).
 - Type of participation Co-Author of two papers presented in the congress. Published in: Proceedings of the 6th International Conference on Heritage and Sustainable Development, Vol.2. Edited by Rogério Amoêda, Sérgio Lira, Cristina Pinheiro, Juan M. Santiago Zaragoza, Julio Calvo Serrano and Fabián García Carrillo. e-ISBN 978-84-338-6261-7.
Paper 1 title: "*Influence of several metabolites excreted by microorganisms on building stone deterioration*".
Paper 2 title: "*Changes in the Alhambra Palaces algal biodeterioration after 25 years*".
- 9 – 12 September, 2019
RCMNS INTERIM COLLOQUIUM "CONTINENTAL-MARINE INTERACTIONS DURING THE NEOGENE IN THE MEDITERRANEAN AREA"
 - Organizing entity University of Granada
 - Domain International
 - Venue Facultad de Ciencias, Granada, Spain.
 - Type of participation Co-Author of one paper presented in the congress and presentation of a poster.
Paper published in: Jiménez-Moreno, G., García-Alix, A. and Minwer-Barakat, R., RCMNS Interim Colloquium "Continental-marine interactions during the Neogene in the Mediterranean area". Granada, Spain, 9-12 September 2019. Abstract book, p. 14.
Paper title: "*Amphistegina Lessonii D'Orbigny from Messinian subtropical coral reefs in the western Mediterranean (Poniente Basin, Almería, SE Spain)*".

RESEARCH GROUP MEMBERSHIP

- 9 April 2018 – in progress (full time)
RESEARCH GROUP "TECHNÉ. INGENIERÍA DEL CONOCIMIENTO Y DEL PRODUCTO"
 - Address of the group Facultad de Ciencias, Universidad de Granada. Fuentenueva Avenue, 18071, Granada.
 - Occupation or position held Component
 - Main activities and responsibilities Laboratory tasks focused on the study and development of commercial products. For example: biocidal treatments on industrial stones (such as limestones or marbles, easily colonized by microorganisms) applying different chemical compounds and production of pre-products which consist of tablets made up of controlled solubility materials high biodegradable, harmless to the stone and harmful to microorganisms.

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PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE **SPANISH**

OTHER LANGUAGES

ENGLISH

- Reading skills 176 (EXCELLENT)
 - Writing skills 164 (GOOD)
 - Verbal skills 165 (GOOD)
- Level B2

FRENCH

- Reading skills 23.50/25 (EXCELLENT)
 - Writing skills 19/25 (GOOD)
 - Verbal skills 22/25 (VERY GOOD)
- Level B2

ITALIAN

Level A2+ (28/30)

SOCIAL SKILLS AND COMPETENCES

Good attitude and commitment skills improved in different campaigns of archaeological/paleontological excavations where I cohabited and worked with work groups as volunteer during summer months.

Communicative and self-sufficiency skills enhanced during my Erasmus stay at Poland by living and studying in other country with distinct culture and academic methods.

TECHNICAL SKILLS AND COMPETENCES

Computer equipment Windows 8.1.

Basic skills to handle mathematical computing software, such as Matlab or Python and geographic information systems (software ArcGIS), as well as several specialized software like JMicroVision (for measuring and quantifying components of high-definition images), Surfer (for data mapping, modeling and analysis), Grapher (for data high-quality graphing), SedLog (for creating graphic sediment logs) or Hysplit (for data dispersion modeling).

DRIVING LICENSE B type. From 28 December, 2011.

ANNEXES

Identification Document

Bachelor's degree title and academic certification

Master's degree title and academic certification

PhD student certification

Training courses certificates

Congresses and publications

Participation in paleontological/archaeological excavations

Language certificates