

Línea de investigación principal:

En las dos últimas décadas el equipo ha trabajado en diferentes líneas de investigación de los periodos Pérmico y Triásico. Los estudios se han llevado a cabo en rocas continentales y marinas, y se han realizado en la Península Ibérica, Francia, Italia, Alemania, Noruega, Marruecos, Suráfrica y Australia. Los aspectos que se han abordado están relacionados con la sedimentología, mineralogía, paleontología, paleosuelos y geoquímica, haciendo con ello que los trabajos alcancen un carácter multidisciplinar.

Equipo científico:

- 1- *José Fernández Barrenechea*. Investigador Principal del proyecto. Catedrático. Facultad de Ciencias Geológicas, Universidad Complutense de Madrid e IGEO (CSIC-UCM). (ver CV al final). *Mineralogía y Geoquímica*. Código ORCID: 0000-0001-6534-7134
- 2- *José López Gómez*. Investigador Principal del proyecto. Científico Titular (CSIC). Instituto de Geociencias, IGEO (CSIC-UCM). (ver CV al final). *Estratigrafía y Sedimentología*. Código ORCID: 0000-0002-7288-3071
- 3- *Javier Luque del Villar*. Profesor Titular. Facultad de Ciencias Geológicas, Universidad Complutense de Madrid e IGEO (CSIC-UCM). *Mineralogía y Geoquímica*. Código ORCID: 0000-0002-4868-3344
- 4- *Raúl de la Horra del Barco*. Profesor Contratado Doctor. Facultad de Ciencias Geológicas, Universidad Complutense de Madrid. *Estratigrafía y Sedimentología*. Código ORCID: 0000-0003-2855-7102
- 5- *Violeta Borrueal Abadía*. Profesora Ayudante. Facultad de Ciencias Geológicas, Universidad Complutense de Madrid. *Geoquímica*. Código ORCID: 0000-0003-3257-8168
- 6- *Belén Galán Abellán*. Profesora Ayudante. Facultad de Ciencias. Universidad Autónoma de Madrid. *Geoquímica*. Código ORCID: 0000-0002-2859-0618
- 7- *Alberto Pérez López*. Profesor Titular. Universidad de Granada. *Estratigrafía y Sedimentología*. Código ORCID: 0000-0002-0228-214X
- 8- *José Bienvenido Díez*. Catedrático. Universidad de Vigo. *Paleontología*. Código ORCID: 0000-0001-5739-7270
- 9- *Sylvie Bourquín*. Full Professor. Rennes University. Francia. *Estratigrafía y Sedimentología*. Código ORCID: 0000-0002-2802-9548
- 10- *Ausonio Ronchi*. Professor. Pavia University. Italia. *Estratigrafía y Sedimentología*. Código ORCID: 0000-0002-7158-3990
- 11- *Piero Gianolla*. Full Professor. Ferrara University. Italia. *Estratigrafía y Sedimentología*. Código ORCID: 0000-0001-7683-2880
- 12- *Teresa Ubide*. Full Professor. Queensland University. Australia. *Geoquímica, vulcanismo*. Código ORCID: 0000-0002-2944-8736
- 13- *Luis Buatois*. Full Professor. Saskatchewan University. Canada. *Paleontología*. Código ORCID: 0000-0001-9523-750X



Parte de los integrantes del Grupo investigador con el personal contratado en el proyecto CGL2014-25699 realizando un estudio sobre la acidez en el Triásico Inferior de los Dolomitas, Alpes italianos.

Proyectos dirigidos por los Investigadores Principales en los últimos 20 años:

A: Laboratorios:

- 1-APC BTE2002-12347E. 20/10/2003-20/10/2005. Total: 10.432€
- 2- Acción Complementaria: CGL2007-28731-E/BTE.12/07-/12/08. Total: 6.000€
- 3- Acción Complementaria: GL2010-09503-E. 10/2010-9/2011. Total: 5.000 €

B: Plan Nacional. 3 o 4 años de duración.

- 4: BTE2002-00775. 2002-2005. Total: 51,750€
 - 5-CGL2005-01520: 31/12/2005-30/12/2008. Total: 49.980€
 - 6- CGL2008-00093: Dic 12/2008-12/ 2011. Total: 63.000€
 - 7- CGL2011-24408. 1/1/2012 to:31/12/2014. Total: 118.544 €
 - 8- CGL2014-52699-P. 1/1/2015 to:31/12/2018 Total: 114.440
 - 9- PGC2018-098272-B-I00 1/1/2019-31/12/2022. Total: 89.300 €
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Capacidad de formación del grupo (tesis dirigidas) en los últimos 10 años

En los últimos 10 años se han dirigido 6 tesis doctorales relacionadas con los periodos Pérmico y Triásico. Todas ellas fueron financiadas con subvencionadas por el Ministerio de Ciencia español y/o la Universidad de Pavia (Italia), y fueron terminados en el tiempo requerido. Los nombres de los doctorandos, fecha y lugar de defensa de las tesis doctorales son:

(1) Nicola Gretter (19/12/2014), Univ Pavia: Evolución sedimentaria de sistemas fluviales del Carbonífero Superior-Triásico Inferior del Pirineo Catalán: facies el análisis como herramienta para las correlaciones interregionales;

(2) M^a José Escudero Mozo (15/05/2015), UCM-CSIC: Plataformas carbonatadas del Triásico Medio (facies Muschelkalk) de la Península Ibérica: Estratigrafía, paleogeografía y recuperación paleoambiental;

(3) Violeta Borrueal Abadía (14/07/2017), UCM-CSIC: Comparación de las variaciones físico-químicas de la serie Permo-Triásico en la Cordillera Ibérica y Cataluña y su relación con la crisis P/T;

(4) Joan Lloret (22/02/2019), UCM-Univ. Pavía (Co-supervisado): Reconstrucción estratigráfica-sedimentaria en las sucesiones Pérmico-Triásico del Pirineo Central y su importancia en la reorganización de la placa de Tetis Occidental;

(5) Manuel Juncal Rosales (06/06/2019), Univ. Vigo: Nuevas aportaciones a la palinoestratigrafía pérmica del Dominio Peritético Occidental;

(6) Lorenzo Stori (entregado: 16/01/2023) UCM-Univ. Pavía (Cotutela): El Triásico Medio de Cerdeña en el marco de la evolución del Tetis occidental.

NOTA 1: Todas las tesis defendidas han obtenido la calificación de Apto Cum Laude.

NOTA 2: Cinco de los doctores arriba citados están trabajando actualmente en el ámbito de la geología; 3 de ellos como profesores en diferentes universidades.

Publicaciones:

El total de publicaciones del grupo investigador está en torno a las 750, como puede verse en los números ORCID que acompañan a cada investigador. Los detalles de los CV de los dos Investigadores Principales figuran al final de estas páginas. Destacamos a continuación únicamente las publicaciones de mayor impacto del último proyecto (5 últimos años) en las que figuran los dos Investigadores principales:

1- A. Tourani, N. Benaouiss, R. De la Horra, J.F. Barrenechea, J. López-Gómez, O.F. Gallego, S. Bourquin 2023. Characterization of the Carnian Pluvial Episode in the Argana Basin (Western High Atlas, Morocco): An approach based on sedimentology, clay mineralogy and palaeosols. **Palaeogeography, Palaeoclimatology, Palaeoecology** 627, 111720.

2- Lloret, J., López-Gómez, J., Heredia, N., Martín-González, F., De la Horra, R., Borrueal-Abadía, V., Ronchi, A., Barrenechea, J.F., García-Sansegundo, J., Galé, C., Ubide, T., Gretter, N., Diez, J.B., Juncal, M., Lago, M., 2021. Transition between Variscan and Alpine cycles in the Pyrenean-Cantabrian Mountains (N Spain): Geodynamic evolution of near-equator European Permian basins. **Global and Planetary Change** 207, 103677. IF 4.433

3- Lloret, J., De La Horra, R., Gretter, N., Borrueal-Abadía, V., Barrenechea, J.F., Ronchi, A., Diez, J.B., Arche, A., López-Gómez, J., 2020. Gradual changes in the Olenekian-Anisian continental record and biotic implications in the Central-Eastern Pyrenean basin, NE Spain. **Global and Planetary Change** 192, 103252. IF 4.433

4- Borrueal-Abadía, V., Barrenechea, J.F., Galán-Abellán, B., De la Horra, R., López-Gómez, J., Ronchi, A., Luque, J.F., Alonso-Azcárate, J., Marzo, M., 2019. Could acidity be the reason behind the Early Triassic biotic crisis on land? **Chemical Geology** 188, 77-86. IF 3.641

5- López-Gómez, J., Alonso-Azcárate, J., Arche, A. (+ 47 authors). 2019. Permian-Triassic Rifting Stage. In: Quesada, C. and Oliveira, J.T. (eds), *The Geology of Iberia: A Geodynamic Approach*. Volume 3: *The Alpine Cycle*. 29-112 pp. **Springer, Heidelberg**. doi:10.1007/978-3-030-11295-0

6- López-Gómez, J., Martín-González, F., Heredia, N. (+14 authors), 2019. New lithostratigraphy for the Cantabrian Mountains: A common tectonostratigraphic evolution for the onset of the Alpine cycle in the W Pyrenean realm, N Spain. **Earth Sciences Review** 188, 249-271. IF. 7.491.

7- Barrenechea, J.F., López-Gómez, J., De la Horra, R. 2018. Sedimentology, clay mineralogy and palaeosols of the Mid-Carnian Pluvial Episode in Eastern Spain: insights into humidity and sea-level variations. **Journal of the Geological Society, London**. IF: 2.683.

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	11/01/2023
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First name	JOSÉ MARÍA		
Family name	FERNÁNDEZ BARRENECHEA		
Gender (*)	Male	Birth date (dd/mm/yyyy)	22/02/1966
Social Security, Passport, ID number	02608514S		
e-mail	barrene@ucm.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-6534-7134		

(*) Mandatory

A.1. Current position

Position	Professor (Catedrático de Universidad)		
Initial date	17/02/2022		
Institution	UNIVERSIDAD COMPLUTENSE DE MADRID		
Department/Center	MINERALOGÍA Y PETROLOGÍA	FAC. GEOLOGÍA	
Country	Spain	Teleph. number	913945242
Key words	Clay Mineralogy, paleoenvironment.		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
01/01/1990-31/12/1993	Predoctoral Scholar (PFPI)/UCM/Spain/PhD degree
24/03/1994-30/09/1996	Senior Lecturer (Interim)/UCM/Spain/new position
1/10/1996-04/03/2001	Associate professor (full-time)/UCM/Spain/new position
05/03/2001-16/02/2022	Senior Lecturer /UCM/Spain/new position
17/02/2022-today	Professor/UCM/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed	COMPLUTENSE DE MADRID/Spain	1989
Degree	COMPLUTENSE DE MADRID/Spain	1990
PhD	COMPLUTENSE DE MADRID/Spain	1994

(Include all the necessary rows)

Part B. CV SUMMARY (max. 5000 characters, including spaces)

My research has focused on three fundamental lines: a) Geology and Mineralogy of Clays, b) Non-metallic mineral deposits and c) Applied Mineralogy,

In the line of Geology and Mineralogy of Clays, I have always worked in multidisciplinary teams. I specialized in the determination of mineralogical indicators in the transition between diagenesis and low-grade metamorphism, first in the Eastern Sector of the Central System, and then in the Cameros Basin (NW Iberian Range). The most relevant results were that illite crystallinities in these units do not follow the expected gradual increase with increasing burial depth since they are largely controlled by the circulation of hydrothermal fluids and by variations in lithology and sedimentary facies (which rule permeability); and that the distribution of clay minerals (specially the formation of rectorite and corrensite) can only be explained in terms of a high fluid-rock ratio during the diagenetic and low-grade metamorphic reactions. Subsequently, my research focused on the mineralogical and geochemical variations related to the palaeoenvironmental alterations that led to the great biotic crisis of the Permian-Triassic boundary and the subsequent life recovery, in the SE of the Iberian Range. These studies revealed the importance of other phases included in the clay fraction, the strontium-rich

aluminium phosphate sulphates (APS minerals), as indicators of acidic conditions unsuitable for the recovery of life, which lasted until the Smithian-Spathian boundary (SSB, end of Lower Triassic). We proposed a quantitative method to determine the proportion of APS minerals in these samples by mapping the distribution of Sr, S, and P by EMPA. These phases were also recognized at the SSB in other peri-Tethys continental basins in subequatorial latitudes (Catalan Coastal Range, Minorca and Sardinia), thus suggesting a global scale alteration, most likely by volcanic aerosols. We have recently pointed the latitudinal control on the distribution of these volcanic aerosols (and thus of the APS minerals) for the SSB through an international collaborative study. These minerals are not present in samples of high latitudes for this time interval, likely reflecting the concentration of volcanic aerosols in subequatorial latitudes.

In recent years I have also worked on the reconstruction of paleoenvironmental conditions of the Carnian Pluvial Episode (CPE, Late Triassic), related also to biotic crisis and recovery, by clay mineralogical and geochemical studies.

The line of Non-metallic mineral deposits was focused on the study of natural graphite deposits, with relevant and innovative results. We showed for the first time that graphite with high crystallinity can precipitate at moderate temperature. We also described the largest number of graphite morphologies in a single natural deposit and related their formation to the different stages of formation.

The Applied Mineralogy line was focused on the recycling of waste from aggregate exploitation to manufacture structural ceramics. The most relevant results derive from the formulation and characterization of lightweight aggregates. A detailed study of the mineralogical phases formed in the different parts of the aggregates was carried out, relating them to the formation conditions, mechanical properties, etc.

My scientific-technical abilities include the use of different techniques: X-ray diffraction (XRD), optical microscopy, scanning and high-resolution electron microscopy (SEM, HRTEM), and electron microprobe analyses (EMPA), combined with bulk geochemical characterization by Inductively Coupled Plasma (ICP) and X-ray Fluorescence (XRF) and stable isotope studies. Our group collaborates with researchers from different countries (Australia, Italy, France, Germany, Morocco, China and United Kingdom).

These results have been presented in 57 JCR publications, with 17 articles in JCR journals in the last 5 years (9 of them in the Q1), and of 73 communications in national and international conferences. Concerning my research responsibilities, I have participated in more than 20 competitive projects, having co-led two projects in the last two calls of the Ministry of Science and Innovation. I am also co-director of UCM Research Group "Mineral Formation Processes and Applied Mineralogy" since 2009.

I have directed two doctoral theses, which obtained the extraordinary doctorate award. Both young researchers are currently working as Lecturers (PAD) at the university, and they are integrated within our research group. In addition, I have been a member of the panel of experts of the ANECA ACADEMIA program since 2008, and in 2011 I was an evaluator of postdoctoral fellowship applications in Earth Sciences for ANEP.

Part C. RELEVANT MERITS (*sorted by typology*)

C.1. Publications (*see instructions*)

Lloret J.; López-Gómez J.; Heredia N.; Martín-González F.; de la Horra R.; Borrueal-Abadía V.; Ronchi A.; **Barrenechea J.F.**; García-Sansegundo J.; Galé C.; Ubide T.; Gretter N. (2021) Transition between Variscan and Alpine cycles in the Pyrenean-Cantabrian Mountains (N Spain): Geodynamic evolution of near-equator European Permian basins. **Global and Planetary Change**, 207. 103677

Lloret J.; De la Horra R.; López-Gómez J.; **Barrenechea J.F.**; Gretter N.; Ronchi A. (2021) Permian and triassic paleosols in the fluviallacustrine record of the central Pyrenees basin, Spain: A stratigraphic tool for interpreting syntectonic sedimentary evolution and paleoclimate. **Newsletters on Stratigraphy**, 54-3, 377-404.

Galán-Abellán, A.B.; **Barrenechea, J.F.**; De la Horra, R.; Alonso-Azcárate, J.; Luque, F. J.; Borrueal- Abadía, V.; López-Gómez, J. (2020) Geochemical markers of palaeoenvironments, weathering and provenance in Permian-Triassic terrestrial sediments. **Journal of Sedimentary Research**. 90-8, 906-920.

Lloret, J.; De La Horra, R.; Gretter, N.; Borrueal-Abadía, V.; **Barrenechea, J.F.**; Ronchi, A.; Diez, J.B.; Arche, A.; López-Gómez, J. (2020) Gradual changes in the Olenekian-Anisian continental record and biotic implications in the Central- Eastern Pyrenean basin, NE Spain. **Global and planetary change**. 192. 103252

Borrueal-Abadía, V., **Barrenechea, J.F.**, Galán-Abellán, A.B., De la Horra, R., López-Gómez, J., Ronchi, A., Luque, F.J., Alonso-Azcárate, J., Marzo, M. (2019) Could acidity be the reason behind the Early Triassic biotic crisis on land? **Chemical Geology**, 515, 77–86

Barrenechea, J.F., López-Gómez, J., De la Horra, R. (2018). Sedimentology, clay mineralogy and palaeosols of the Mid-Carnian Pluvial Episode in Eastern Spain: insights into humidity and sea-level variations. **Journal of the Geological Society, London**, 175, 993-1003.

Borrueal-Abadía, V., **Barrenechea, J.F.**, Galán-Abellán, A.B., Alonso-Azcárate, J., De la Horra, R., Luque, F.J., López-Gómez, J. (2016) Quantifying aluminium phosphate-sulphate minerals as markers of acidic conditions during the Permian-Triassic transition in the Iberian Ranges, E Spain. **Chemical Geology**, 429, 10-20.

Gretter N., Ronchi A., López-Gómez J., Arche A., De la Horra R., **Barrenechea J.F.**, Lago M. (2015). The Late Palaeozoic - Early Mesozoic from the Catalan Pyrenees (Spain): 60 Myr of environmental evolution in the frame of the western peri - Tethyan palaeogeography. **Earth Science Reviews** 150, 679-708.

Galán-Abellán, A.B., **Barrenechea, J.F.**, Benito M.I., De La Horra, R., Luque, F.J., Alonso-Azcárate, J.; Arche, A.; Lopez-Gomez, J.; M. Lago (2013) Palaeoenvironmental implications of aluminium phosphate-sulphate minerals in Early-Middle Triassic continental sediments, SE Iberian Range (Spain). **Sedimentary Geology**. 289, 169 -181.

Galán-Abellán, A.B.; Alonso-Azcárate, J.; Bottrell, S. H.; **Barrenechea, J. F.**; Benito, M. I.; de La Horra, R.; López Gómez, J.; Luque, F.J. (2013) Sources of Sr and S in aluminum-phosphate–sulfate minerals in Early–Middle Triassic sandstones (Iberian Ranges, Spain) and paleoenvironmental implications for the West Tethys. **Journal of Sedimentary Research**. 83, 406–426.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

TYPE OF CONTRIBUTION: Poster, AUTHORS: Borrueal-Abadía, V.; Galán-Abellán, A.B.; Barrenechea, J.F.; De la Horra, R.; Luque, F.J.; Alonso-Azcárate, J.; López-Gómez, J.; Ronchi, A.; Marzo, M. TITLE: Continental sedimentary response to acidity during the Early Triassic (Smithian-Spathian) in the Westernmost Peri-Tethys. CONGRESS: European Geosciences Union (EGU) General Assembly, LOCATION: Viena (Austria). DATE: 23-28 April 2017.

TYPE OF CONTRIBUTION: Poster, AUTHORS: Barrenechea, J.F.; López Gómez, J.; de la Horra, R. TITLE: Mineralogía, sedimentología y paleosuelos del evento pluvial del Carniense Medio en el este de España: indicadores de humedad y variaciones del nivel del mar.. CONGRESS: XXXVII Reunión Científica de la Sociedad Española de Mineralogía, LOCATION: Madrid (Spain). DATE: 12 July 2018.

TYPE OF CONTRIBUTION: Poster, AUTHORS: Barrenechea, J.F.; Borrueal-Abadía, V.; De la Horra, R.; López-Gómez, J.; Gianolla, P. TITLE: APS Minerals in Early-Middle Triassic Rocks of the western peri-Tethys (Alto Adige, Italy). CONGRESS: 3rd European Mineralogical Conference (EMC2020), LOCATION: Kracow (Poland). DATE: 23-28 April 2017.

C.3. Research projects, indicating your personal contribution. In the case of young

REFERENCE: PGC2018-098272-B-100. TITLE: Indicadores paleoambientales de la recuperación de la vida en el Triásico Inferior-Medio: flujos continente-oceáno en el dominio W del Tethys y controles latitudinales. FINANCIAL INSTITUTION: Ministerio de Ciencia, Innovación y Universidades. PRINCIPAL INVESTIGATORS: Dr. José M. Fernández Barrenechea (UCM, IGEO, CSIC_UCM) and Dr. José T. López Gómez (IGEO, CSIC_UCM). START DATE: January 1, 2019, FINISH DATE: December 31, 2022. BUDGET: 89.540 €. PARTICIPATION: Principal investigator

REFERENCE: CGL2014-52699-P. TITLE: Relación continente-océano en la crisis y recuperación de los ecosistemas en la margen O del Tethys durante la transición Pérmico- Triásico. FINANCIAL INSTITUTION: Ministerio de Economía y Competitividad. PRINCIPAL INVESTIGATORS: Dr. José M. Fernández Barrenechea (UCM, IGEO, CSIC_UCM) and Dr. José T. López Gómez (IGEO, CSIC_UCM). START DATE: January 1, 2015, FINISH DATE: December 31, 2018, BUDGET: 95.000 €. PARTICIPATION: Principal investigator.

REFERENCE: CGL2011-24408. TITLE: Cambios sedimentarios, geoquímicos y bióticos en la transición Paleozoico-Mesozoico del E de Iberia. FINANCIAL INSTITUTION: Ministerio de Ciencia e Innovación. PRINCIPAL INVESTIGATOR: Dr. José T. López Gómez (IGEO, CSIC_UCM). START DATE: January 1, 2012, FINISH DATE: December 31, 2014, BUDGET: 108.900 €. PARTICIPATION: Researcher.

REFERENCE: CGL2010-09503-E. TITLE: Cooperación con el Geochemistry of Sulphide Laboratory de Leeds (UK) y fomento del uso común de laboratorios. FINANCIAL INSTITUTION: Ministerio de Ciencia e Innovación. Acciones Complementarias a Proyectos de Investigación Fundamental no orientada. PRINCIPAL INVESTIGATOR: Dr. José T. López Gómez (IGEO, CSIC_UCM). START DATE: October 1, 2010, FINISH DATE: October 19, 2010, BUDGET: 5.000 €. PARTICIPATION: Researcher.

REFERENCE: CGL2008-00093. TITLE: Eventos de crisis y recuperación del Pérmico Superior-Triásico: Cordilleras Ibérica Este y Catalana. FINANCIAL INSTITUTION: Ministerio de Ciencia e Innovación. PRINCIPAL INVESTIGATOR: Dr. José T. López Gómez (IGEO, CSIC_UCM). START DATE: January 1, 2008, FINISH DATE: December 31, 2011, BUDGET: 76.230 €. PARTICIPATION: Researcher.

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

TITLE: Estudio mineralógico y geoquímico de muestras de rocas arcillosas.
COMPANY: Compañía General de Sondeos, S.A. DATE: 1996/97. PRINCIPAL INVESTIGATOR: Dra. Magdalena Rodas.

TITLE: Posibilidad de aplicaciones cerámicas de los materiales arcillosos de La Minoria (Álava). COMPANY: EUSEBIO ECHAVE S.A. DATE: 12/2001 a 6/2002.
PRINCIPAL INVESTIGATOR: Dra. Magdalena Rodas.

TITLE: Estudio de muestras litológicas. COMPANY: REPSOL EXPLORACIÓN S.A.
DATE:
11/2016 a 11/2018 PRINCIPAL INVESTIGATOR: Abati Gómez, Jacobo; Ortega Menor, Lorena; Pieren Pidal, Agustín; Tejero López, Rosa.

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	José Trinidad		
Family name	López Gómez		
Gender (*)	Male	Birth date	15/07/1958
Passport, ID number	ID: 51338150B		
e-mail	jlopez@ucm.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)			0000-0002-7288-3071

(*) Mandatory

A.1. Current position

Position	Senior Scientist (Científico Titular)		
Initial date	February 1990		
Institution	CSIC National Research Council		
Department/Center		Instituto de Geociencias, IGEO (CSIC-UCM) Madrid	
Country	Spain	Telephone	653501138
Key words	Permian, Triassic, Stratigraphy, climate change, Sedimentology, Palaeogeography		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
1982-1985	Doctoral (FPI) Scholarship from the Spanish Ministry of Education and Research. Institut of Economic Geology (IGE, CSIC-UCM), Madrid, Spain. (4 years). Four months of this period at Department of Geology, Montreal University, Canada.
1986-1987	CSIC Postdoctoral scholarship / Institut of Economic Geology (IGE, CSIC-UCM), Madrid, Spain. (24 months)
1987-1988 (UCM Course)	Full Professor of Stratigraphy (Interim) UCM. Madrid, Spain. / 5 months/ It was interrupted when I obtained the CSIC postdoctoral fellowship.
1988-1989	CSIC Postdoctoral scholarship /18 months/ Department of Geology at the Imperial College, London (UK)
1990	“Return from Abroad” Grant. Ministry of Education and Research, Spain (2 months. It was interrupted when I obtained the Senior Scientist position)
1990-actualidad	Científico Titular (Senior Scientist) / CSIC / Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Graduate	Complutense University, Madrid	1980

Licensed	Complutense University, Madrid	1981
PhD	Complutense University, Madrid	1985

(Include all the necessary rows)

Part B. CV SUMMARY (max. 5000 characters, including spaces)

-A: Relevance and contribution to the generation of knowledge: The main contribution is based on the study of the continental and marine record of the Permian and Triassic, both nationally and internationally, but also the Jurassic in Argentina. The relevance lies in the novelty of the results obtained compared to what was previously published. I highlight the development of knowledge of the Permian-Triassic, Smithian-Spatian and Julian-Tuvalian transitions, including the crises in the ecosystems, climatic and acidity variations in said transitions.

-B: Contribution to the generation of ideas: As a synthesis, a) through the development of new models on the first tecto-sedimentary phases of the fracturing of Pangea (Permian and Triassic), and b) on the opening to the "proto-Pacific" (in Argentina).

-C: Hypothesis and results and how they have been communicated: Obtaining a new spatio-temporal framework of the basins and their sedimentary record, providing a new paleogeographic and climatic evolution conception. The results have been communicated in impact journals (see ORCID), conferences and congresses (see below).

-D: Financing obtained: As IP, since 2003 and without interruption, through projects of the National Plan and others from the Spanish Ministry: 502,500 euros (see below).

-E: Scientific-technical capacities acquired: I highlight two: a) the coordination of research groups (20 years as PI), and b) the training of research personnel (see below).

-F: Scientific responsibilities exercised: Participation in the gestation of the Institute of Geosciences, IGEO (CSIC-UCM), and responsibility in the IGEO as: vice director (7 years), director of the Sedimentary Geology department (6 years), and director of the Group of research Global Change (7 years). Also as PI of Ministry PN projects (last 20 years) (see below).

-G: International collaborations and leadership: a) Through the European group "Permian and Triassic Geologists Association" (AGPT), with whom I have co-organized 2 meetings in Spain (2014 Cuenca and 2022 Oviedo); b) Leadership in National Plan projects (NP); c) Within these projects, we have collaborated with the universities of: Rennes, Bonn, Ferrara, Pavia, Marrakech, Saskatchewan, Buenos Aires and Queensland. Researchers from these centers have belonged to the work teams of our NP projects. One of the results has been the co-direction of 3 doctoral theses at the Univ. Pavia.

Contributions to society:

-A: Technological development and innovation activities: Development of techniques for the measurement of "acidity variation" in Triassic rocks (used in 9 countries in the ongoing project. See section C.1).

-B: Dissemination activities: Director of the dissemination courses "Geosciences in the Sierra" (2018 and 2019, El Escorial, Madrid); Co-director of "Geosciences at School" (scheduled monthly from 2021-present) (<https://igeo.ucm-csic.es/geociencias-en-el-colegio->). Others: Participation in conferences, Science Week and Geology

-C: Collaborations with Industry: See section C.4

Contributions to the training of young researchers:

-A: How it has contributed to the development of the careers of these people: I have directed or Co-directed 9 PhD Thesis since 2003. All *Pass Cum Laude*. Currently, 4 are university professors and 2 work in energy companies

-B: How it has contributed to the constitution of research teams: Through the direction of 5 PN projects, the direction of 9 PhD Thesis to consolidate it and collaboration with international groups.

-C: Editorial activities: Co-director of the research magazine "Journal of Iberian Geology" (Springer) from 2000-present, included in the *Science Citation Index*. Impact: 1,590 (2021). Co-editor with Dr Edith Taylor (Kansas University) of vol. 229 (1-2) 2005 "Permian-Triassic

transition in Spain: A multidisciplinary approach” of the journal “*Palaeogeogr, Palaeoclimatol, Palaeoecol*”

-D: Evaluation of researchers, projects and other research activities: Member of the Evaluation Commission of projects in the Area of Management of Earth Sciences (BTE-2012 and 2018); Member of the ANEP Commission of the Ministry for JC and RC contracts (2008 and 2009); Commission of Experts for Project Assessment of the Ministry (2012 and 2015). Also: Research Grants Evaluator: Loverhulme (2004 UK); “Ministero delli Instruzione delli Università e della Ricerca” (2010-2013), “Hispano-Brazileño” Program (2010-2011), and tenured professorship of the Geology Department (2019, Univ. Bonn).

Other contributions:

Complement of productivity of “six-year” (“Sexenios”): **5** (last one applied: 11/30/2018), and “five-year” (“Quinquénios”): **6** (last one applied: 04/22/ 2014). Member of the Spanish Scientific Committee of the UNESCO Man & Biosphere program (since 2017), and member of the IGEO Equality Commission (CSIC-UCM).

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

1- Lloret, J., **López-Gómez, J.**, Heredia, N., Martín-González, F., De la Horra, R., Borrueal-Abadía, V., Ronchi, A., Barrenechea, J.F., García-Sanseguendo, J., Galé, C., Ubide, T., Gretter, N., Diez, J.B., Juncal, M., Lago, M., 2021. Transition between Variscan and Alpine cycles in the Pyrenean-Cantabrian Mountains (N Spain): Geodynamic evolution of near-equator European Permian basins. **Global and Planetary Change** 207, 103677. IF 4.433

2-Lloret, J., De La Horra, R., Gretter, N., Borrueal-Abadía, V., Barrenechea, J.F., Ronchi, A., Diez, J.B., Arche, A., **López-Gómez, J.**, 2020. Gradual changes in the Olenekian-Anisian continental record and biotic implications in the Central-Eastern Pyrenean basin, NE Spain. **Global and Planetary Change** 192, 103252. IF 4.433

3-Borrueal-Abadía, V., Barrenechea, J.F., Galán-Abellán, B., De la Horra, R., **López-Gómez, J.**, Ronchi, A., Luque, J.F., Alonso-Azcárate, J., Marzo, M., 2019. Could acidity be the reason behind the Early Triassic biotic crisis on land? **Chemical Geology** 188, 77-86. IF 3.641

4-**López-Gómez, J.**, Alónso-Azcárate, J., Arche, A. (+ 47 authors). 2019. Permian-Triassic Rifting Stage. In: Quesada, C. and Oliveira, J.T. (eds), *The Geology of Iberia: A Geodynamic Approach*. Volume 3: *The Alpine Cycle*. 29-112 pp. **Springer. Heidelberg**. doi:10.1007/978-3-030-11295-0

5-**López-Gómez, J.**, Martín-González, F., Heredia, N. (+14 authors), 2019. New lithostratigraphy for the Cantabrian Mountains: A common tectonostratigraphic evolution for the onset of the Alpine cycle in the W Pyrenean realm, N Spain. **Earth Sciences Review** 188, 249-271. IF. 7.491.

6-Barrenechea, J.F., **López-Gómez, J.**, De la Horra, R. 2018. Sedimentology, clay mineralogy and palaeosols of the Mid-Carnian Pluvial Episode in Eastern Spain: insights into humidity and sea-level variations. **Journal of the Geological Society, London**. IF: 2.683.

7-**López-Gómez, J.**, Escudero-Mozo, M.J., Martín-Chivelet, J., Arche, A., Lago, M., Galé, C. 2017. Western Tethys continental-marine responses to the Carnian Humid Episode: Palaeoclimatic and palaeogeographic implications **Global and Planetary Change** 148, 79-95 IF: 3.982

8-Gretter N., Ronchi A., **López-Gómez J.**, Arche A., De la Horra R., Barrenechea J., Lago M. 2015. The Late Palaeozoic - Early Mesozoic from the Catalan Pyrenees (Spain): 60 Myr of environmental evolution in the frame of the western peri - Tethyan palaeogeography. **Earth Science Reviews** 150, 679-708 IF: 7,491

9-Arche, A., **López-Gómez, J.**, 2014. The Carnian Pluvial Event in W Europe: New data from Iberia and correlation with the W Neotethys and E North America-NW Africa regions **Earth Science-Review** 128, 196- 231 IF: 7.491

10- Vargas, H., Gaspar-Escribano, J., **López-Gómez, J.**, Van Wees, J.D., Cloetingh, S., De la Horra, R., Arche, A., 2009. A comparison of the Iberia and Ebro basins during the Permian and Triassic, eastern Spain: A quantitative subsidence modelling approach. *Tectonophysics* 474, 160-183. IF. 1.935.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster). Only the 6 more representative are indicated

1-Stori, L., Ros Franch, S., Márquez Aliaga, A., Goy A., Márquez-Sanz, L., **López-Gómez, J.**, Martín-Chivelet, J., Ronchi, A. **Oral Presentation.** Meeting: 21st ISC - International Sedimentological Congress August 22-26, Beijing, China, 2021

2-Lloret, J., Ronchi, A., **López-Gómez, J.**, Arche, A., De la Horra, R., Barrenechea, J.F., Gretter, N. **Oral presentation:** International Meeting of Sedimentology Toulouse, France. 10-12 October 2017

3- Arche, A., **López-Gómez, J.** **Oral presentation.** Meeting: 6th International Conference on Fluvial Sedimentology. Cape Town, South Africa. 22-27/09/ 1997.

4-Ter Voorde, M., López-Gómez, L., Cloetingh, S., Arche, A., Van Wees, J. **Oral presentation.** Meeting: Origin of Sedimentary Basins. Sitges, Barcelona 23-27 September, 1996.

5-Arche, A. and **López-Gómez, J.** **Oral presentation.** Meeting: Origin of Sedimentary basins. International Lithosphere Program. Dead Sea, Israel. 2-7 Oct, 1994.

6- López-Gómez, J. Title: *Conceptos e incertidumbres de la transición Pérmico-Triásico*". **Keynote Conference** XII Congreso Argentino de Sedimentología. Buenos Aires, Argentina. 3 June 2008.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

This section lists the projects of the last 20 years that have been directed by the undersigned and that are related to the line of research of the applicant group.

A: Research support projects (laboratories). From the Spanish Ministry.

1-Funding: APC BTE2002-12347E. 20/10/2003-20/10/2005, IP: **José López Gómez.** 10,432€

2-Funding: Complement. Action: CGL2007-28731-E/BTE. 12/07-/12/08 IP: **J. López-Gómez** 6,000€

3-Funding: Complement. Action: GL2010-09503-E. 10/2010-9/2011. IP: **José López-Gómez** 5,000 €

B: National Plan Research Projects of 3 or 4 years duration.

4: National Plan. BTE2002-00775. 2002-2005. IP: **José López Gómez** 51,750€

5-National Plan. CGL2005-01520: 31/12/2005-30/12/2008 IP **José López Gómez.**: 49,980€

6- Nation Plan. CGL2008-00093: Dec 12/2008-12/ 2011. IP: **José López Gómez.** 63.000€

7-National Plan. CGL2011-24408. 1/1/2012 to:31/12/2014. IP: **José López-Gómez.** 118.544 €

8-National Plan. CGL2014-25699.1/1/ 2015-31/12/ 2018. IPs: **José T. López Gómez** and JF Barrenechea. 114,950 €

9-National Plan. PGC2018-098272-B-I00 1/1/2019-31/12/2022 IP: **José T. López Gómez** and JF Barrenechea. 89,300 €

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority

countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

A- With hydrocarbon companies

1- Name of the cooperation: Fluvial sedimentation in the Central Iberian Ranges: the Late Permian-Early Triassic and Middle Cretaceous examples and their comparison with oil-bearing reservoirs in Holland and Norway. Participating entities: **Norske Shell**, CSIC, Universidad Complutense (2008). Researchers, Arche, A., **López-Gómez, J.**, Melendez, N. Financing: 20.200 euros

2- Name of the cooperation: The Manuel Sandstones Fm (Triassic) in the Alcaraz area (Albacete Prov): Sedimentary and paleogeographical significance. Activity: Field trip. Participating company: **CEPSA**. 2-4 July. 2009. Org: A Arche and **J López Gómez**.

B-Participation in International Cooperation: Development aid.

Cooperation title (Program): *Formación práctica avanzada de profesionales para la exploración de aguas subterráneas y mantenimiento de infraestructuras asociadas en los campamentos de refugiados saharauis, Argelia*. Entidad financiadora: Universidad Complutense de Madrid. Participant entities: UCM (España) – República Árabe Democrática (África): From: 01/06/08 to: 01/06/08. Financing: 74.545 euro. Spanish manager: Dra M^o José Comas (UCM)