

<b>Part A. PERSONAL INFORMATION</b>		<b>CV date</b>	Jan. 2022
First and Family name	Juan Carlos Linares Calderón		
Social Security, Passport, ID number	DNI: 26033568Y	Age	46
Researcher numbers	Researcher ID	G-3474-2011	
	Orcid code	0000-0001-8375-6353	

### A.1. Current position

Name of University/Institution	University Pablo de Olavide		
Department	Physical, Chemical and Natural Systems		
Address and Country	Ctra. Utrera Km 1, 41013 Seville. Spain		
Phone number	(34)650034811	E-mail	<a href="mailto:jclincal@upo.es">jclincal@upo.es</a>
Current position	Associate Professor	From	Dec. 4, 2017
UNESCO codes	241713 / 241702 / 250203 / 310608		
Keywords	Global change, Climate change, Forest ecology, Tree physiology, Dendroecology, Dendroclimatology.		

### A.2. Education

BsC/PhD	University	Year
BsC. Environmental Sciences	University of Jaén	2002
PhD. Sciences	University of Jaén	2008

### A.3. Quality Indicators of Scientific Research: JCR articles, h Index, cites in Web of Science (WS) and Google Scholar (GS); thesis supervised.

Six-year periods of research activity: 2 (2004-2009; 2010-2015); 1 in transference (2004-2011).

*Q1 publications*: 62 (WS); total JCR publications: 84.

*H index*: 31 (WS), 38 (GS).

*Last five years total cites*: >1500 (WS); >3200 (GS).

*Last five years average cites/year*: >250 (WS); >500 (GS).

*Thesis supervised*: 4 (A. Hosseini, 2013, C. Laude; G Sangüesa-Barreda, 2016, C. Laude, Ph.D. Extraordinary Award; A. García-Nogales, 2017, C. Laude; V. Lechuga, 2017, C. Laude, I. Cobo-Simón, 2020, C. Laude), 5 ongoing.

### Part B. CV SUMMARY (max. 3500 characters, including spaces)

My scientific activity is devoted to the understanding of the adaptive capacity of forest ecosystems to climate change. I have focused mainly on field data and climatic analysis, accounting for a wide range of ecological scales, from the landscape to the tree physiology. I currently lead the Dendroecology and Ecophysiology Lab of the University Pablo de Olavide (Seville), where we have steadily increased the scale and complexity of our studies on forest dynamics. Thus, I have led research projects covering the whole range of several tree species, conducting studies in forests from different regions of Spain, Morocco, Chile, Turkey, Iran, Finland and Switzerland. In addition to these international researches, I have conducted several research stays as a Visiting Fellow. The results of these studies are challenging the current paradigm that predicts increasing forests carbon sinks and water use efficiency in response to the global atmospheric CO<sub>2</sub> rise. Besides, our long-term researches highlighting the importance of forest management, as a modulating factor of the responses of drought-sensitive tree species to climate change. Recently, we are also accounting for the role of genetic diversity and epigenetic mechanisms involved in forest decline. Since I got my PhD in Sciences (2008), I have published 84 articles (WoS), 50 in Open Access, in journals such as PNAS, Global Change Biology, Journal of Ecology, Global Ecology and Biogeography. These publications have received above three thousand citations in the last five years, including three "Highly cited" articles. Indeed, I am included as a *highly cited author* in [Ioannidis et al. \(2020\)](#). We must add more than twenty divulgation articles; more than a dozen book chapters and more than fifty communications in national and international scientific meetings (three of them as Invited Speaker). I have participated in 23 research projects (18 national and 5 international), eight of them as principal investigator (PI), and 2 research contracts (1 as PI). I devote substantial efforts to mentor the next generation of scientists and students. I have supervised four PhD students

(currently supervising five more), more than a dozen MsC, BsC students and post-doctoral researchers. Several undergraduates perform research activities in our lab, as well as visitors from Spain and abroad who have conducted research stays. I have participated in committees of the ANEP for research projects evaluation, as well as in the committees for evaluation of postdoctoral fellowships JdC/RyC since 2012.

I devote substantial efforts to mentor the next generation of scientists and students. My academic career means balancing the demands of teaching with research goals, starting as a Graduate Teaching Assistant (FPU, 2004) and later as an Assistant Professor (2008-2012) in the Pablo de Olavide University. My current teaching activity, as an Associate Professor of Ecology, relies on the Bachelor of Environmental Sciences and Master of Climate Change, Carbon and Water Resources, and Biodiversity and Conservation Biology. I have supervised four PhD students (currently supervising five more), about a dozen MsC, BsC students and post-doctoral researchers. Several undergraduates perform research activities in our lab, as well as visitors from Spain and abroad who have conducted research stays. The quality of my teaching activity has been positively evaluated through the DOCENTIA program of the University Pablo de Olavide (2005-2010, 2011-2015); the students' surveys yield an average score of 4.39 (over 5 points), which is above the average ratings of the academic staff. I have published 4 book chapters for university students and forestry technicians and 2 articles on teaching innovation; I have also experience of leading researchers on active learning methods, participating in 3 Teaching Innovation Projects and presenting communications to 3 Teaching Innovation Workshops. I have skilled my teaching training through University Specialist courses in Teaching Innovation in Higher European Education Area.

## Part C. RELEVANT MERITS

### C.1. Publications (10 selected JCR articles)

Batllori et al. 2020. Forest and woodland replacement patterns following drought-related mortality. PNAS. <https://doi.org/10.1073/pnas.2002314117>.

Gazol et al. 2020. Drought legacies are short, prevail in dry conifer forests and depend on growth variability. Journal of Ecology. <https://doi.org/10.1111/1365-2745.13435>.

Bose et al. 2020. Growth and resilience responses of Scots pine to extreme droughts across Europe depend on pre-drought growth conditions. Global Change Biology. <https://doi.org/10.1111/gcb.15153>.

DeSoto et al. 2020. Low growth resilience to drought is related to future mortality risk in trees. Nature Communications. 11:545. <https://doi.org/10.1038/s41467-020-14300-5>.

Kattge et al. 2020 TRY plant trait database – enhanced coverage and open access. Global Change Biology 26(1):119-188. <https://doi.org/10.1111/gcb.14904>.

Gazol et al. 2018. Forest resilience to drought varies across biomes. Global Change Biology. 24 (5) 2143-2158. <https://doi.org/10.1111/gcb.14082>.

Sánchez-Salguero et al. 2017. Climate extremes and predicted warming threaten Mediterranean Holocene firs forests refugia. PNAS. <https://doi.org/10.1073/pnas.1708109114>.

Matías et al. 2017. Contrasting growth forecasts across the geographical range of Scots pine due altitudinal and latitudinal differences in climatic sensitivity. Global Change Biology. 23(10): 4106–4116. <https://doi.org/10.1111/gcb.13627>.

Camarero et al. 2017. Back to the future: the responses of alpine treelines to climate warming are constrained by the current ecotone structure. Ecosystems. 20(4): 683–700. <https://doi.org/10.1007/s10021-016-0046-3>.

Cailleret et al. 2017. A synthesis of radial growth patterns preceding tree mortality. Global Change Biology. 23(4): 1675–1690. <https://doi.org/10.1111/gcb.13535>.

Shestakova et al. 2016. Forests synchronize their growth in contrasting Eurasian regions in response to climate warming. PNAS. 113. 662-667. <https://doi.org/10.1073/pnas.1514717113>.

## **C.2. Research projects and grants (5-7 maximum)**

**UPO-1263216.** Análisis Multiescalar de la Vulnerabilidad en Bosques Mediterráneos Inducida Por El Cambio Climático y la Sequía (Vulbos). Proyectos de I+D+i programa operativo FEDER. IP. Sanchez Salguero, Raul. UPO. 2019-2020. 41.200,00 € Researcher.

**P20\_00813.** VUlnerabilidad y REsilencia a la sequía en bosques Mediterráneos: Un análisis multiescalar de los legados del cambio CLIMático (VURECLIM). Proyectos de I+D+i Modalidad Frontera Conocimiento. Junta de Andalucía. IP. Raúl Sánchez Salguero, UPO. 2022-2023. 99.500,00 € Researcher.

**P18-RT-4963.** Long-term drivers of adaptive capacity in Mediterranean. Proyectos de I+D+i Modalidad Retos Consolidado. Junta de Andalucía. IP. Francisca Alba Sánchez, U. Granada. 2020-2022. 108.292,00 € Researcher.

**P18-RT-1170.** Conservación de pinsapares degradados en la Reserva de la Biosfera intercontinental del Mediterráneo: un enfoque eco-genómico para evaluar el potencial adaptativo al cambio global de especies forestales amenazadas. Proyectos de I+D+i Modalidad Retos Consolidado. Junta de Andalucía. IP. Anass Terrab, U. Sevilla. 2020-2022. 108.292,00 € Researcher.

**UPO-1263216.** Análisis Multiescalar de la Vulnerabilidad en Bosques Mediterráneos Inducida Por El Cambio Climático y la Sequía (Vulbos). Proyectos de I+D+i programa operativo FEDER. IP. Sanchez Salguero, Raul. UPO. 2019-2020. 41.200,00 € Researcher.

**RTI2018-096884-B-C33.** Legados ambientales y de manejo en la sensibilidad a la sequía de de abetales y pinsapares: un enfoque dendrogenómico del potencial adaptativo al cambio climático. Proyectos de I+D Retos Investigación" del Programa Estatal de I+D+i Orientada a los Retos de la Sociedad. IP. Juan Carlos Linares, U. Pablo de Olavide. 2019-2022. 200.860,00 € Principal Researcher.

**EQC2018-005303-P.** Estación para Aplicaciones Dendrocronológica en Investigaciones Medioambientales. Convocatoria de Infraestructura de Investigación y Equipamiento Científico-Técnico (Plan Estatal I+D+i 2017-2021). IP. Juan Carlos Linares, U. Pablo de Olavide. 2018-2020. 393.577,97 € Principal Researcher.

**CGL2013-48843-C2-2-R.** Presiones selectivas del cambio climático sobre la ecofisiología y la estructura genética de árboles y comunidades microbianas del suelo en ecotonos forestales. Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, modalidad 1, "Retos Investigación": Proyectos de I+D+I. IP. Juan Carlos Linares, U. Pablo de Olavide. 2014-2018. 162.140,00 € Principal Researcher.

**0087\_TRANSHABITAT\_2\_E.** Desarrollo sostenible del espacio transfronterizo Red Natura 2000 y hábitats de interés común Andalucía-Marruecos. Unión Europea FEDER. Segunda Convocatoria del Programa Operativo de Cooperación Transfronteriza España-Fronteras Exteriores. Hemerlindo Castro Nogueira (Coordinador), Junta de Andalucía; 2011-2016. 5.605.842,00 € Principal Researcher. Juan Carlos Linares, Subproyecto U. Pablo de Olavide.

**A/024752/09 (I), y A/030763/10 (II).** Efectos del Cambio Global sobre la dinámica de los bosques de *Cedrus atlantica* del Medio Atlas. Interacciones del Cambio Climático y el Manejo I (2010-2011) y II (2011-2012). Agencia Española de Cooperación Internacional. IP. Juan Carlos Linares, U. Pablo de Olavide. 2010-2012. 8.000,00€(I), y 16.310,59€(II). Principal Researcher.

## **C.3. Contracts**

Title: Establecimiento de las bases ecológicas para la gestión de los tipos de hábitat de interés comunitario presentes en España. Empresa/Entidad: AEET-TRAGSA. IP. Juan Carlos Linares, U. Pablo de Olavide. 01/06/2007-02/09/2007. 1.200,00€

Title: Seguimiento de las actuaciones de recuperación y conservación del pinsapo en las provincias de Cádiz y Málaga: indicadores de variación de nutrientes. Empresa/Entidad: EGMASA. PI. José Antonio Carreira, U. Jaén. 01/06/2004-01/07/2006. 31.203,71€

## C.5 Thesis supervised and Ph.D. students' highlights.

Ph.D. candidate: Gabriel Sangüesa-Barreda. Title: Role of biotic factors and their interactions with droughts in forest decline events. Date: January 2016. Score: cum laude (Ph.D. Extraordinary Award). Outstanding publications: <https://www.researchgate.net/profile/Gabriel-Sanguesa-Barreda>. Scientific / professional development: Postdoctoral Research Fellow. IPE-CSIC, University of Valladolid.

Ph.D. candidate: Ana Garcia-Nogales. Title: Comparación biogeográfica de poblaciones de *Quercus ilex* L. Test del modelo núcleo-periferia. Date: March 2017. Score: cum laude. Outstanding publications: <https://www.researchgate.net/profile/Ana-Garcia-Nogales/research>. Scientific / professional development: Postdoctoral Research Fellow applicant.

Ph.D. candidate: Víctor Lechuga Ordoñez. Title: Vulnerability to drought and adaptive management of relict forests of *Abies pinsapo* (Boiss.). Date: September 2017. Score: cum laude. Outstanding publications: <https://www.researchgate.net/profile/Victor-Lechuga-Ordonez/research>. Scientific / professional development: Technician University of Jaén. Postdoctoral Research Fellow applicant.

Ph.D. candidate: Irene Cobo Simón. Title: Selective pressures of climate change on relict drought-sensitive forests. Genetic responses of *Abies pinsapo* and *Cedrus atlantica* to a changing environment. Date: October 2020. Score: cum laude. Outstanding publications: <https://www.researchgate.net/profile/Irene-Cobo-Simon>. Scientific / professional development: Postdoctoral Research Associate at the University of Connecticut.

## C.6 Invited talks and courses

Over twenty university extension courses and own degrees from the International Universidad of Andalucía (2008, 2010, 2011), University of Córdoba (2011), Centro de Formación y Experimentación Forestal Vadillo-Castril (2009), Training courses of the Junta de Andalucía (2013) and Summer Courses of the University Pablo de Olavide (2009, 2010 and 2011).

## C.7. Institutional responsibilities and scientific commissions.

I have participated in the scientific commissions of Ecology and Forestry of the Spanish Ministry of Science since 2012. Thereby I have evaluated nearby half-hundred Research Project proposals for ANEP, as well as attended the scientific commissions of “Biología Vegetal, Animal y Ecología” (2012 y 2018) and “Agricultura” (2013) for Postdoctoral Research Fellowships programs. I have also evaluated Research Projects for international institutions such as Czech Science Foundation, 2016; National Science Centre, Poland, 2013; Netherlands Organisation for Scientific Research; Agence Nationale de la Recherche, Appel à projet Blanc - SVSE 7 - Biodiversité, évolution, écologie et agronomie, 2011. I have revised over one hundred of manuscripts submitted to top JCR Journals, getting recognition at Publons' global Peer Review Awards.

## C.8. Organization of research activities.

International Organizing Committee member TRACE 2015 Tree Rings in Archaeology, Climatology and Ecology. International Conference. Association for Tree-ring Research (ATR). 17-22/05/2015. Seville, Spain. Scientific Committee of the Netherlands Environmental Assessment Agency, IPCC Working Group I (2012). Scientific Committee of the Climate science and human induced climate change survey (University of Colorado).

COST ACTION FP1106-STRESS (2013-2016). COST Action FP1304 (2015-2018).

## C.9. Awards.

Licentiate Extraordinary Award. Given by the University of Jaén (Spain). June 2002.