AYUDAS RAMÓN Y CAJAL – CONVOCATORIA 2021
Turno RYC-INIA-CCAA

Área Temática: **Ciencias agrarias y agroalimentarias**
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Título: Fotosíntesis y eficiencia en el uso del agua

Resumen de la Memoria:

El Dr Cano es doctor ingeniero de montes por la Universidad Politécnica de Madrid y máster especialista por la Universitat de les Illes Balears. Durante su etapa predoctoral, el Dr Cano realizó estancias en centros de investigación europeos (INRA, Francia) e internacionales (Universidad de Sydney, Australia) por un tiempo acumulado de 11 meses. Después de completar su doctorado en 2015, viajó de nuevo a Australia para trabajar como investigador postdoctoral esta vez en el instituto de cambio global Hawkesbury Institute for the Environment (HIE, Western Sydney University) y en el prestigioso Australian Research Council Centre of Excellence for Translational Photosynthesis (ARC CoETP), durante más de cuatro años. En 2021, fue atraído de regreso a España donde obtuvo un contrato altamente competitivo (Juan de la Cierva Incorporación, convocatoria 2019) por tres años en el INIA-CSIC y es investigador honorario en el HIE de Australia.

El Dr Cano ha hecho contribuciones fundamentales para nuestra comprensión de las limitaciones de la fotosíntesis y actualmente está trabajando en una variedad de proyectos que examinan las interacciones planta-ambiente con un énfasis particular en comprender y explotar la variabilidad inter- e intraespecífica de las plantas en un escenario de cambio climático. Durante la última década ha estado contribuyendo activamente en el debate sobre las principales limitaciones para la fijación de carbono en especies arbóreas y en plantas C4, demostrando: la importancia de la conductancia del mesófilo (gm) para mejorar la eficiencia en el uso del agua (WUE), como las hojas desarrolladas a la sombra están más limitadas por una reducida gm que por la restricción estomática bajo estrés hídrico y la preponderancia de limitaciones bioquímicas frente a las difusivas en gramíneas de hoja ancha frente a las de hoja estrecha, lo cual confiere mayor WUE a las últimas. Más recientemente, se embarcó en un innovador y desafiante proyecto que examina la morfología foliar de distintas variedades de sorgo como rasgo integrador de su tolerancia al estrés hídrico y por altas temperaturas.

Resumen del Currículum Vitae:

El investigador Dr Ingeniero de Montes Javier Cano obtuvo su doctorado en la Universidad Politécnica de Madrid (UPM) en febrero del año 2015. Tras un año de baja por paternidad (mi hijo nació en septiembre 2014), y realizando trabajos puntuales fue investigador posdoctoral en la Western Sydney University (WSU, Australia), concretamente en el instituto de cambio global Hawkesbury Institute for the Environment (HIE) y en el prestigioso Centro de Excelencia australiano ARC Centre of Excellence for Translational Photosynthesis (ARC CoETP) durante más de cuatro años, donde perfeccionó técnicas de medición con isótopos y modelización de flujos de agua y carbono de la vegetación con la atmósfera. Actualmente ha comenzado un contrato Juan de la Cierva Incorporación (2021-2024) en el INIA-CIFOR y mantiene un honorary fellowship con la WSU. Sus principales líneas de investigación se centran en la fotosíntesis, la respuesta de los vegetales frente al cambio climático (estrés hídrico, altas temperaturas y aumento de CO2) y el modelado de los flujos de gases entre la hoja y la atmósfera en especies forestales, pero también recientemente en especies agronómicas como el sorgo. Ha participado en tres proyecto del Plan Nacional, en otro autonómico y en una COST Action (E52) europea. Como investigador principal ha liderado un proyecto para jóvenes investigadores financiado por el prestigioso ARC CoETP. Fruto del trabajo realizado en estos dos proyectos el ARC CoETP le acaba de conceder un nuevo proyecto de un año de duración por $50.000 que lidera como investigador principal sobre mecanismos de adaptación y tolerancia a las altas temperaturas. El Dr. Cano ha realizado diversas estancias de investigación en centros europeos (INRA con el Dr Hervé Cochard diseñador del modelo SurEau que se va a implementar en la propuesta)e internacionales, ha presentado más de 30 comunicaciones a congresos nacionales e internacionales, ha dirigido un proyecto fin de carrera (UPM) y una tesis doctoral en el extranjero (WSU, Australia). Actualmente se encuentra codirigiendo una tesis en España del Sr Faustino Rubio, sobre el papel del ABA en la respuesta de brinzales de haya al cambio climático y que participa en el equipo de trabajo) junto con la profesora de la ETSI Montes (UPM) Rosana López (participa en el equipo de investigación) y otra entre Australia y la India de Swathy Anija Harikumar sobre sorgo y adapataciones al cambio climático junto con A/Prof Oula Ghannoum (WSU) y Dr Usha Chacko (Kerala Agricultural University, India). Actualmente ha publicado un total de 22 artículos en revistas internacionales indexadas en el SCI, que acumulan 797 citas totales (1193 según google scholar) y una media de 36 citas (WoS/artículo), así como cuatro capítulos de libro en editoriales prestigiosas (e.g. Springer). Es revisor habitual de más de 18 revistas científicas internacionales (e.g. New Phytologist, Plant Physiology, Plant, Cell & Environmnet) y revisor desde 2017 de convocatorias de proyectos de investigación para la Agencia Nacional de Evaluación y Prospectiva (ANEP), en el área Biología Vegetal, Animal y Ecología. También es editor en la revista Plants desde 2020 (Q1 Plant Science, IF = 3.9) y ha dirigido número especiales para la revista Frontiers in Forests and Global Change. El Dr Cano ha recibido diversos premios y reconocimientos a la labor investigadora y al mérito

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Área Temática: **Ciencias agrarias y agroalimentarias**
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Título: Role of somatic-germ cell interaction in the regulation of male fertility in ruminants

Resumen de la Memoria:

In 2013, I was granted a PhD fellowship from the Irish Department of Agriculture, Food and the Marine with Prof. Patrick Lonergan at University College Dublin, as part of a large multidisciplinary project (worth 1.2M) to study the role of antimicrobial peptides present in sperm. During this time, I became aware of the immense complexity of sperm physiology, and the little knowledge we have regarding the male contribution to fertility. In addition, being in a group that had traditionally worked on maternal-embryo communication, and participating in many of these studies, I started questioning the paternal role in these interactions. As a result, I decided to focus my postdoctoral research on studying how interactions between male factors and the female reproductive tract shape successful pregnancy. In 2016, I was awarded a 2-year Science Foundation Ireland Postdoctoral Fellowship at University College Dublin. During this period, I demonstrated the detrimental effect of bull seminal plasma (the fluid portion of the ejaculate) on endometrial RNA integrity due to a seminal vesicle-derived ribonuclease whose dimeric form allows it to evade protein-based inhibitors. This led me to hypothesise that the modulation of the uterine environment by paternal factors is not due to direct contact with seminal plasma in cattle. To address this hypothesis, I wrote a successful Marie Curie Individual Fellowship proposal as Principal Investigator. Thus, in 2018, I moved to the University of Girona where I studied the effect of exposure to paternal factors on the maternal environment and pre-implantation embryo development in cattle. Using both in vivo and in vitro models, I demonstrated for the first time that sperm play a more critical role than seminal plasma in the regulation of the maternal environment in species that ejaculate inside the vagina. Since 2020, I have continued to study the factors involved in this process at CSIC-INIA under a Juan de la Cierva Incorporación Postdoctoral Fellowship and have demonstrated the different ability of sperm factors bound at ejaculation and those acquired during spermatogenesis and epididymal maturation, in the regulation of the bovine uterine environment. This has opened the door to new hypotheses regarding the role of the male reproductive tract in the regulation of the ability of sperm to modulate the maternal environment, and ultimately pregnancy success, which I intend to explore during my Ramón y Cajal Fellowship.

Resumen del Currículum Vitae:

I graduated with a Doctor in Veterinary Medicine (DVM) degree in 2012 and, after obtaining my MSc in Veterinary Science in 2013, I was awarded a PhD fellowship from the Irish Ministry of Agriculture at University College Dublin (UCD). In 2016, I obtained a Science Foundation Ireland Postdoctoral Fellowship at UCD. Two years later, in 2018, I returned to Spain as Principal Investigator of a project funded by a Marie Curie Individual Fellowship at University of Girona. I currently hold a Juan de la Cierva Incorporación Postdoctoral Fellowship (awarded on 2020) at CSIC-INIA.

Overall, my work has led to the publication of 31 articles in SCI/JCR-indexed journals, which have received 406 citations. I occupy a relevant position (first, second, or last author) in 55% of these, reflecting my critical contribution to the formulation of hypotheses, experimental design, execution, and reporting of these. In addition, I have authored 40 conference abstracts and my current h index is 12.

The impact of my research in the scientific community is evidenced by the fact that I have been invited to give 4 oral presentations at international conferences, including the International Embryo Technology Society, where I won the Student Competition in 2016, and was selected as a finalist in 2017. Following this trajectory, the PhD student that I supervise, was runner up in 2019. I have been invited to talk at prestigious institutions such as the Smithsonian Conservation Biology Institute (USA) and the Leeds Institute of Cardiovascular and Metabolic Medicine (University of Leeds, UK). My scientific achievements led me to be selected as one of 20 participants of the 2017 Frontiers in Reproduction Course (held at the Marine Biological Laboratory, The University of Chicago), supported by a Burroughs Wellcome Fund Fellowship ($3,500 awarded). In addition, I serve as ad hoc reviewer for >10 leading international journals in my field, and as expert project evaluator for national and international research agencies. Since 2018, I am a member of the Domestic Animal Biomedical Embryology Committee, and have recently been appointed as a chair of the Reproduction Task Force of the International Society for Extracellular Vesicles. As a result, I have a wide network of both national and international collaborators.

Because the results derived from my studies intend to support the broad society, I actively participate in the implementation of scientific findings in the field and have collaborated in 7 national and international research contracts with companies. I also believe in the importance of scientific outreach, and have organized workshops for the 2021 Spanish Science Week at CSIC-INIA, the 2019 European Researcher¿s Night in Girona, and was also invited to talk at the 2019 Discovered in Girona outreach seminar series. Recently, I have been invited as a guest in the upcoming season of the Repro Radio podcast.

Throughout my career, I have participated in promoting the scientific careers of young researchers. I have supervised 1 PhD (ongoing), 3 Master s (1 ongoing), and 6 undergraduate theses; and have taught BSc and MSc students at University College Dublin, University of Girona, University of Murcia and Valencia Polytechnic University (total 387h). In addition, I served as Governor of the Trainee Association of IETS (the Morulas; 2016-2018).

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Área Temática: **Ciencias agrarias y agroalimentarias**
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Título: Vectors, vector-borne diseases and global change

Resumen de la Memoria:

My main research line is related to the effect of landscape anthropization and global change in vector-borne pathogens, arthropod vectors, and zoonotic diseases, with a One Health approach.

I obtained the degree in Veterinary Science in 2012 (Universidad de Zaragoza) and the master s degree in Terrestrial Ecology and Biodiversity Management in 2014 (Universidad Autónoma de Barcelona). During the master I participated in a project assessing how the urbanization of natural areas influences epidemiology of pathogens and parasites in wildlife and I was trained in different laboratories. In 2015, I moved to Chile to start my PhD in the Universidad Andrés Bello (UNAB). During my PhD, my research topics mainly focused on wildlife diseases, vector-borne pathogens, and interspecific transmission of pathogens between wildlife and domestic animals drives by landscape anthropization. I participated in different projects as researcher, co-investigator and principal investigator. Among the findings of these projects, it is important to highlight the contribution we made to Chile by expanding the knowledge about pathogens and parasites in domestic and wild animals. We described the presence of agents never reported before in Chile (e.g., Babesia vogeli) and disentangle the inter- and intraspecies transmission of several parasites and pathogens. To carry out all this works, I participated in the creation of a research group led by Javier Millán and in the optimization of detection protocols and molecular characterization of pathogens and parasites. During my period in Chile, I trained and mentored several students in laboratory and data analysis, and I led fieldwork teams. I also worked at the same university as assistant professor mainly in "Epidemiology and Public Health". I completed two stays in foreign institutions: Environmental Epidemiology Group at CISA-INIA (Spain) and Laboratory of Parasitology in the University of Bari (Italy).

At the end of 2020, I joined the Department of Animal Health of NEIKER with a Juan de la Cierva-Formación- postdoctoral contract. I am especially involved in projects within the line of Vectors, vector-borne diseases and global change , led by Ana L. García-Pérez. Within these projects I am, for example, participating in the design of new sampling strategies for the surveillance of invasive mosquitoes in the Basque Country, together with the Department of Public Health of the Government of the Basque Country. These projects will also allow to describe the spatial and temporal dynamics of vector population and epidemiological cycles of vector-borne pathogens in an urban-rural-natural gradient. In 2021, I was a lecturer for the Introduction to Environmental Biosafety course of the official Joint Erasmus Mundus Master Environmental Contamination and Toxicology-ECT+ in the Basque Country University. I am currently co-directing a PhD thesis. Regarding editorial activities, I served as reviewer for several journals for articles related to wildlife disease, parasitology, and vector-borne diseases. Moreover, I am currently Associate Editor of MUNIBE-Natural Science and Journal of Wildlife Disease . I have published 31 indexed scientific articles and participate in 25 contributions in national and international conferences.

Resumen del Currículum Vitae:

My main research line is related to the effect of landscape anthropization and global change in vector-borne pathogens, arthropod vectors, and zoonotic diseases, with a One Health approach.

I obtained the degree in Veterinary Science in 2012 (Universidad de Zaragoza) and the master s degree in Terrestrial Ecology and Biodiversity Management in 2014 (Universidad Autónoma de Barcelona). During the master I participated in a project which aimed to study the factors affecting the prevalence of relevant zoonotic agents in wildlife in periurban environments. I was trained in different laboratories and research group, such as the Department of Parasitology of the Faculty of Pharmacy of the University of Barcelona, the molecular diagnostic laboratory VetGenomics, the Wildlife Ecopathology Service (SEFaS) of the Universitat Autònoma de Barcelona and the Center for Rickettsiosis and Arthropod-Borne Diseases at CIBIR-La Rioja.

In 2015, I moved to Chile to start my PhD in the Universidad Andrés Bello (UNAB). In 2019 I obtained my PhD degree with Summa Cum Laude qualification, and I was awarded by the prize Best doctoral student of the 2019 generation of the Universidad Andrés Bello. During my PhD, my research topics mainly focused on wildlife diseases, vector-borne pathogens, and interspecific transmission of pathogens between wildlife and domestic animals drives by landscape anthropization. I participated in five different projects as researcher (3), co-investigator (1) or principal investigator (1). To carry out all this works, I participated in the creation of a research group led by Javier Millán and in the optimization of detection protocols and molecular characterization of pathogens and parasites. During my period in Chile, I trained and mentored several students in laboratory and data analysis, and I led fieldwork teams. I also worked at the same university as assistant professor mainly in "Epidemiology and Public Health". I completed two stays in foreign institutions: Environmental Epidemiology Group at CISA-INIA (Spain) and Laboratory of Parasitology in the University of Bari (Italy).

At the end of 2020, I joined the Department of Animal Health of NEIKER with a Juan de la Cierva-Formación- postdoctoral contract. I am especially involved in projects within the line of Vectors, vector-borne diseases and global change , led by Ana L. García-Pérez. I am working as researcher in six different national and international projects. In 2021, I was a lecturer for the Introduction to Environmental Biosafety course of the official Joint Erasmus Mundus Master Environmental Contamination and Toxicology-ECT+ in the Basque Country University. I am currently co-directing a PhD thesis. Regarding editorial activities, I served as reviewer for several journals for articles related to wildlife disease, parasitology, and vector-borne diseases. Moreover, I am currently Associate Editor of MUNIBE-Natural Science and Journal of Wildlife Disease . I have published 31 indexed scientific articles and I participated in 12 research national and international projects as a researcher (10), co-investigator (1) or principal investigator (1).

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Área Temática: **Ciencias agrarias y agroalimentarias**
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Título: La gripe aviar: patobiología y control

Resumen de la Memoria:

I graduated in Veterinary Medicine and obtained my PhD from the Universitat Autònoma de Barcelona. My research focuses on viral diseases of birds, especially avian influenza (AI). I have worked on avian influenza transmission at the animal-human interface, vaccines, and pathobiology at internationally renowned research centers such as the OIE Reference Laboratory for Avian Influenza and Newcastle Disease (Padova, Italy), the Southeast Poultry Research Laboratory USDA (Athens, Georgia, USA) and the National Veterinary School of Toulouse (France). I have published over 35 papers and have presented my work at numerous international symposia. I have demonstrated extraordinary commitment to the advancement of infectious diseases of poultry. My goal is to continue my research on viral infectious diseases of poultry, especially AI, a disease with great economic impact and zoonotic potential, as manifest by the recurrent AI epizootics in Europe and Spain in wild birds and poultry, and after the recent detection of AI in a turkey farm just north of Madrid. Understanding how to prevent, early detect, and control the disease is paramount for the Spanish poultry sector. Thanks to the Ramón y Cajal grant, my addition to the Avian Virus group of IRTA-CReSA as an independent researcher will strengthen the group s research and advancement of infectious diseases of poultry.

Resumen del Currículum Vitae:

My research focuses on viral infectious diseases of poultry, with emphasis on zoonotic avian influenza (AI). I obtained a competitive FPU pre-doctoral grant (Spanish Ministry of Education, success rate 11%) for my MSc and PhD at Centre de Recerca en Sanitat Animal (CReSA), where I studied AI dynamics in avian species at the wild-domestic interface to understand their epidemiological relevance and optimize surveillance. During my PhD, I did internships in the reference laboratory of the World Organization for Animal Health (OIE) for AI and Newcastle disease (Padova, Italy) and in Southeast Poultry Research Laboratory (SEPRL), USDA (Athens, GA, USA). Upon completion of my PhD, I was recruited by SEPRL (later known as U.S. National Poultry Research Center) for a 5-year postdoctoral research position, where I worked on applied research, such as aerosol-transmission studies at the animal-human interface and vaccine studies; and basic research, such as pathogen host interaction studies. In 2018, I received a PRESTIGE/Marie Curie Fellow grant (European Commission and Government of France) to work at the National Veterinary School of Toulouse (ENVT, Toulouse, France) and study the persistence and infection dynamics of AI viruses in duck farms. In 2019, I obtained a Beatriu de Pinós grant (Generalitat de Catalunya, success rate 18.7%) to investigate organ explants as a model for AI virus infection at IRTA-CReSA while continuing to study other viral infectious diseases of poultry. My research productivity includes 36 papers (H-index 17, 694 citations, 75% as first or second author, 4 as corresponding author), one book chapter, and one book. I have presented my work in international conferences (15 oral presentations, 6 posters) and have been an invited speaker to 15 sponsored symposia. My teaching experience stems from participating in workshops and Master programs, both at the national and international levels. Some examples are the Infectious Diseases and One Health International Master (UAB), the Máster en Producción y Sanidad Animal (Universidad Complutense de Madrid), and the Workshop on Duck Health and Security by the European College of Poultry Veterinary Science (ENVT, Toulouse, France). I mentored one Master Thesis and I am co-supervising one PhD Thesis. I am the Principal Investigator of a VetBioNet competitive project (in collaboration with ENVT) to compare the infection dynamics of epizootic AIVs in experimentally infected mule ducks, and the Infrastructure TNA Principal Investigator of a TRANSVAC2 competitive project to evaluate broadly protective influenza vaccines in ferrets. I have secured funding and led two privately-funded contracts, in addition to participating to different degrees of responsibility in numerous other contracts. My outreach activities include Monitoring Committee Member of a PhD Thesis, Secretary of a PhD Thesis defense, activities to foster children s exposure to science, reviewer for international peer-reviewed journals, Guest Editor for a journal s Special Issue, reviewer for international grant and project proposals, and current membership of four professional affiliations. I funded my undergraduate, graduate, and post-graduate education through competitive grants, and secured funding to attend courses and symposia.

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Área Temática: **Ciencias agrarias y agroalimentarias**
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Título: Swine diseases / PRRS epidemiology

Resumen de la Memoria:

My research trajectory has always been focused on the study of the epidemiology of swine diseases and pathogens, with an emphasis on the Porcine Reproductive and Respiratory Syndrome (PRRS).
Before my PhD, I worked as a swine clinician for different relevant swine producing companies in Spain. Some of the tasks performed in those companies involved diagnosing, controlling, and eliminating diseases, being PRRS the most insidious. I frequently oversaw clinical studies comparing treatments (vaccines or antimicrobials) and their effect on production parameters. My PhD assessed the efficacy and prevention of antimicrobial resistances of three marbofloxacin posology regimes against two of the most important swine respiratory pathogens (Actinobacillus pleuropneumoniae and Glaesserella parasuis). Due to my knowledge of the swine industry and the epidemiology of swine diseases I was offered a post-doc position in the University of Minnesota to work in the Swine Health Monitoring Project (SHMP). Briefly, the SHMP is an industry driven program led by the UMN where endemic swine diseases and potential emerging swine pathogens are monitored for the 50% of the US swine industry. In the program, I led the PRRS epidemiology piece from a scientific and applied perspective. Most of my time I was curating and analyzing the data from different datasets (e.g., breeding herd health status, animal movement, production data and sequences). I had to be acquinted with different statistical techniques to analyze the different types of data, such as linear and logistic regressions, survival data, phylogenetic analysis and network analysis among others. During my postdoc, I also had the opportunity to develop my own research in the areas of diagnostic techniques. This led to the development of new herd diagnostic techniques. To develop those I had to be in close contact with field swine veterinarians but also bring science into the studies. Furthermore, I collaborated with other researchers to do studies of Mycoplasma hyopneumoniae, Senecavirus A, swine Influenza and the porcine epidemic diarrea virus. From 2020 to 2022, I have worked in my own consultancy firm helping the swine industry with my knowledge where I was able to raise more than 20 contracts during the last year. I have worked with all the major pharmaceutical, genetic and production companies. I foresee continuing the work that I started in Minnesota, putting together different databases in order to create early warnings and protect the swine industry against emerging pathogens or reportable diseases.

I have published 29 papers in my research career, 12 as first or last author. I have been PI of five grants (>190,000 $) funded through competitive calls in the USA. Through my international activity I have built a strong network of colleagues in different fields with whom I maintains active collaborations. The IRTA-CReSA has shown interest in my profile. The RyC scholarship represents an opportunity to consolidate my research career in swine disease epidemiology in an ideal niche (IRTA-CReSA).

Resumen del Currículum Vitae:

My trajectory has always been focused on the understanding of swine health and management, and their impact on swine production. After I got the DVM degree, I worked in the field as a swine veterinarian for different companies. Some of the tasks I performed as a field veterinarian were related to control and elimination of swine pathogens in different herds, being the porcine respiratory and reproductive (PRRS) virus (PRRSV) of special relevance. During that stage, I acquired a great knowledge of the swine production and understanding of the epidemiology of swine diseases (diagnosis, control, treatment, and prevention). Some major accomplishments during this stage were the improvement of productivity parameters and the reduction of antimicrobial usage by controlling PRRSV recirculation in farms under my supervision. I also oversaw the the epidemiological studies to test vaccines and drugs to-be-acquired in those companyies. This led to the start of my PhD.

In 2014, I received the PhD, where I combined field studies, laboratory tasks and basic in silico models. I combined short stays in the IRTA-CReSA, Universitat de Lleida and my work as a slaughterhouse official veterinarian. The PhD focused on the efficacy of three antimicrobial regimes against two important swine respiratory pathogens, Actinobacillus pleuropneumoniae and Glaesserella parasuis. I also assessed the likelihood of the three posology regimes to avoid the selection of resistant strains. All the PhD work was published in relevant scientific journals.

In 2016, I moved to the University of Minnesota (UMN) to join the Swine Health Monitoring Project (SHMP) as post-doc associate. Briefly, the SHMP is an industry driven program led by the UMN where endemic swine diseases and potential emerging swine pathogens are monitored for the 50% of the US swine industry. During my time with the SHMP, I led the PRRS epidemiology and data visualization efforts. During the four years I was in Minnesota, I maintained regular contact with SHMP participants and key stakeholders from the US swine industry and academia to gather industry needs that could be translated into research studies and future collaborations. This bridge between academia and industry led to the development and improvement of new cost-effective PRRSV diagnostic and monitoring techniques, such as processing fluids. My research activity during the period was translated into 25 published papers in peer reviewed literature, of which 8 I was the first or last author. I have been PI of five grants (>110,000 $) funded through competitive calls within and outside the UMN although funding resources were limited for post-docs. I have also been a collaborator in other nine grants from the UMN and other universities. I participated as a grant reviewer in internal calls and tutored undergraduate and visiting students. I have been very active in presenting and disseminating the research work I was doing.

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Área Temática: **Ciencias agrarias y agroalimentarias**
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Título: Deciphering the cell and molecular cues underlying plant-biotic interactions to reprogram the root system

Resumen de la Memoria:

During my research career, I followed a training timeline plan to gain knowledge in the biological system that astonished me since my Biochemistry s degree (2007;USAL): plant-microorganism interactions, and how they modify plant cells and the root system in their own benefit.
After my Tesina in plant biology (2008-USAL), I obtained a FPI-fellowship for the Plant Biotechnology MSc (2009-UAM) and to course my PhD at Dr. Escobar s group (2016-UCLM-Best Science Thesis). I studied cellular/molecular cues regulating plant-nematode interactions and nematode feeding site postembryonic organogenesis, doing 3 stays abroad and collaborating in projects with scientists worldwide. I developed new analysis techniques on this field broadly used nowadays by researchers and companies and obtained funding for a project on how biochar modifies plant-nematode interactions, leading it as PI. The data generated allowed the group to obtain a research project and PhD-grant.
I increased my knowledge on root development/cell plasticity in Dr. Moreno-Risueño¿s group (2018-2020;UPM-CBGP), where I participated in high-impact projects on postembryonic organogenesis, with a Juan de la Cierva-Formación -grant.
My incorporation to Dr. Pozo s group (2021-INIA-CBGP) with a Juan de la Cierva-Incorporación -grant was an opportunity to further integrate my background. I started a new research line investigating how endophytic fungi interact with roots at the cellular/molecular level to enhance the root system. We already started the patentability of 2 different fungi-isolates which increase the root system and plant growth and initiated the agreements with two companies, reinforcing my continuous collaboration with industry.
My work in all groups, stays and collaborations yielded 2 book chapters and 31 articles (H-Index: 15; 810 citations): 23 in 1stdecile (28 in 1stquartile) in Plant Sciences , 16 as 1stauthor, 2 as corresponding-author and 26 in Open Access.
I organised and participated in national/international congresses with 46 communications, 16 as oral-communications, 9 presented by myself. I was invited to seminars at 3 research centres and 1 company. I have undergone training in transferrable skills, published dissemination articles and, as PI or member of competitive projects, have experience in project management raising funds, resource and budget planning, etc. For the abovementioned work, I was distinguished with the Sabater-Award 2021 (SEBP/SEFV) to young scientists.
I enjoyed teaching/mentoring (15 MSc/BSc projects, 237 teaching-hours), with the milestones of having codirected 1 Thesis and obtaining the Contratado-Doctor -Accreditation.

Resumen del Currículum Vitae:

In the last year of my Biochemistry Degree (2007; USAL), I started working on my 'Tesina' (2007-2008; USAL) on cell walls. In 2008, I obtained a FPI grant for the Plant Biotechnology MSc (2009; UAM) and the PhD at Dr. Escobar s group at UCLM (2016; Best Science Thesis Award & International Mention). In my PhD and 1st postdoc I studied the cellular and molecular cues regulating the biotic interaction of nematodes with roots in tomato and Arabidopsis. I participated in 9 projects which allowed me to study this biological system from a multidisciplinary point of view, using multitude of techniques. We published 26 articles and 40 communications. I gave talks in 8 congresses and 3 seminars in research centres, was abroad for 3 stays, taught 213 hours and obtained a Contratado Doctor accreditation. I proved initiative and capacity to solve technical difficulties creating databases and technologies that are being used at other laboratories and companies. Drought, biotic interactions and nutrient deficiencies are major challenges for agricultural research due to climate change and the ban of many pesticides. In line with this, I obtained a project as Principal Investigator (PI) to investigate the use of biochar for nematode control. After that, I obtained a Juan de la Cierva-Formación grant to study, in Dr. Moreno-Risueño¿s group at UPM-CBGP the molecular cues regulating root/lateral root development. I amplified my knowledge on how roots are developed, participating in 2 projects resulting in 3 articles, 4 communications and 24 teaching hours. I wanted to transfer to crops the knowledge that I had acquired, to contribute to improve production yield, bringing together my main research fields: plant-biotic interactions and root development. I achieved it at Dr. Pozo s group at INIA-CBGP with a Juan de la Cierva-Incorporación grant. I started a research line investigating how endophytic fungi interact with roots at the cellular level to know how they enhance the root system. This is fully aligned to some of the most relevant Spanish Government s Retos and to the ODSs (Agenda 2030). We have started the patentability of 2 fungi-isolates which increase the root system. There are two agriculture companies interested in making field trials with them (an example of my collaboration with industry, of technology transfer and public-private collaboration, as that of a contract of technological support services with Semillas Fitó). My research in Dr. Pozo s group yielded so far 1 article, the supervision of 1 MSc project and 2 patents on course. The SEBP honoured me with the Sabater award to young researchers. This creation of techniques, databases, transfer to companies, impact in other groups and 26 articles in Open Access align with DORA guide. My internationalization can be inferred from the articles from my stays in international research centres, my international collaborators and talks at international meetings. I produced results in all groups I have worked in and shown capacity of leadership as PI of a project and my ability to open new research lines. I am grateful to my mentors, who allowed me to become more independent, and I am keen on mentoring my students in allowing them to apply with freedom their ideas, whilst supervising them, to help them build a Plan for their career development. I have directed 15 BSc and MSc projects and 1 thesis.

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Área Temática: **Ciencias agrarias y agroalimentarias**
Nombre: CARRASCO CARRASCO, JAIME
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Título: Gorundbreaking fundamental and applied research on muhsroom science

Resumen de la Memoria:

I am a researcher with deep expertise in the science of cultivated mushrooms. I have significant interest in understanding the cues driving the interactions between mushroom crops and the microbiota inhabiting the substrates and mushroom tissues. Following this approach, I am working in two different lines: a) Understanding pathogenic interactions in order to design an integrated management of mushroom diseases; b) Understanding beneficial interactions to develop biocontrol agents and biostimulants for enhancing crop performance.
In close relationship with different stakeholders, I have done fundamental and applied research, and received training in the two most productive regions of Spain, Castilla-La Mancha (55% of national production) and La Rioja (45%), which facilitates understanding the reality and the necessities of the industry. Besides, my international background was built working for the mushroom industry (Ireland) and academia (UK), and conducting several secondments in well-known international institutions (The Netherlands, Ireland and Spain).
My career started in an international ERA-Chemistry project collaborating with the Eötvos Lorand university in Hungary. Then, I was awarded with a competitive FPI-INIA, that ended with the defense of my PhD: Study of mushroom cobweb caused by Cladobotryum mycophilum in Spanish crops (Sobresaliente Cum Laude , Mención Internacional). I was awarded with a prestigious Marie-Sklodowska-Curie Individual Fellowship in the 2nd best university around the world (QS World University Rankings 2022), the University of Oxford, where I am currently postdoctoral researcher at Gail Preston¿s lab (Department of Plant Sciences). During this postdoctoral stage I successfully managed financially and scientifically my own H2020 project with minor supervision (including deliverables, milestones and D&C actions) and collaborated in the training of undergraduate and graduate students. Recently, I managed to raise the consortium, contributed in the design of WPs and tasks, and wrote the proposal that has been awarded with the European project BIOSCHAMP (www.bioschamp.eu). Associated to this project, I am currently acting as overall innovation manager for the project (12 stakeholders located in 6 European countries), while being principal investigator in ASOCHAMP-CTICH (managing a team of 2 people) and visitor/postdoctoral researcher in Preston¿s lab (managing 1 person) in the UK.

Resumen del Currículum Vitae:

1. H-index: 12; Index i10: 12 (Google Scholar: Jaime Carrasco); Citations: 412. Total number in peer review: 20 (14 as first author or corresponding author). Total publications in first quartile (Q1): 11; Total publications in second and third quartile (Q2 and Q3): 9. 1 patent published (2021). Articles non SCI: 8. International proceedings: 6. Invited chapters in books: 4.
I have developed a well-stablished career working in the two mushroom-research centers of Spain, CIES in Castilla-La Mancha (former FIP-INIA fellow) and ASOCHAMP-CTICH in La Rioja. As a scientific writer I have so far contributed to 20 articles published in peer-review journals and several book chapters, proceedings and conference communications. With a good international network while working for both industry and academia. I am interested in mushroom science, crop-microbe interactions, including mycoparasites, biostimulants and biocontrol agents, bioactive compounds, endophytic bacteria and microbiomes. I conduct fundamental and applied science to tackle the challenges of the European mushroom producers and the European consumers claiming for sustainable, low-meat alternatives.
As Marie-Curie Fellow (GA: 742966) in the University of Oxford, UOX (the 2nd most prestigious university in the world according to QS World University Rankings 2022), I have proved my value as leading researcher for the design, writing, management and execution of my own H2020 project with minor supervision (Prof. Gail Preston). Later on, while covering a maternity leave at ASOCHAMP-CTICH, for the continuation of my postdoctoral project, I was leading the creation of the consortium, the design and writing that resulted in the H2020 BIOSCHAMP project (www.bioschamp.eu) which started last year. Now I am acting as PI in ASOCHAMP-CTICH, Spain, and overall innovation manager for this project (coordinating a team of 5 R&D institutions, 3 large companies and 4 SMEs located in 6 European countries), besides I am now postdoctoral researcher at UOX associated to this project.
2. I have been responsible for different outreach publications in topic journals. My research has been disseminated in radio (Ser; Cope) and press (Voces de Cuenca, Infoagro) for the general audience. I have developed a significant network of international researchers while having conducted international secondments in prestigious institutions (University of Utrecht, Teagasc Dublin, University of Almeria, CIBIR La Rioja) and working for academia as Marie-Curie Fellow (UOX, UK) and for the mushroom industry (Monaghan Mushrooms Ltd., Ireland). I have participated so far in 12 research projects funded by competitive calls at regional (ADER La Rioja), national (INIA) and International level (ERA-Net actions, H2020, Marie-Curie actions and FAPESP-Brazil). In addition, I acted as Innovation Consultant developing skills for design and writing of projects for European calls (H2020).
3. I have been a member in Gail Preston¿s group in UOX since 2017. During this time, I have been guiding, training and teaching undergraduate and graduate students from different programs such as the Oxford Interdisciplinary Bioscience DTP (from which Gail¿s is the current director). I have also coordinated 2 FHS undergraduate projects. At ASOCHAMP-CTICH, I have collaborated and advice the current PhD students (Maria Luisa Tello and Rebeca Lavega).

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Área Temática: **Ciencias agrarias y agroalimentarias**
Nombre: ALVAREZ MARTIN, SARA
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Título: Optimization of the water use in agriculture

Resumen de la Memoria:

My research line deals with the optimization of the water use in agriculture and an efficient management of irrigation. Throughout my career, I have been member of different research groups in Spain, Brazil and Italy. I am currently a researcher (DOC INIA) in the Technological Agriculture Institute of Castilla y León, (ITACyL, Valladolid). I have previously had several contracts within research Projects at the Irrigation Department of the Centro de Edafología y Biología Aplicada del Segura (CEBAS-CSIC, Murcia) for 11 years (2005-2015), and in the Soil and Water Department of the Experimental Station of Aula Dei (EEAD-CSIC, Zaragoza) for 15 months (2016-2017).

I developed my first works on water relations and application of precision deficit irrigation to improve the water use efficiency in several species, including fruit and lemon trees. I defended my PhD thesis in 2011, revealing the response, effects and tolerance mechanisms to water deficit of three ornamental species. I also approached the study of the management of irrigation with low quality waters, in order to know the osmotic and saline effects in both plants and soil, and facilitate the development of irrigation methods to maintain plant quality and protect soils and aquifers. Also, the effect of water deficit, salinity and both applied simultaneously was studied, as they often occur together. Moreover, I have participated in research projects to identify the tolerance level to salinity and throw light on the physiological and biochemical mechanisms of several species irrigated with saline and reclaimed water. The knowledge of the degree of salinity tolerance is an important aspect for irrigation management, contributing to a sustainable use of water and an adequate water planning. I was trained in international research institutions with short stays (Brazil and Italy) that were the foundations of future successful collaborations.

In 2017, I was appointed to a competitive research position (Doc-INIA) at ITACyL. I belong to the Unit of woody and horticultural crops, where I am carrying out my own research lines and I am building and consolidating national and international collaborations. In this stage, I am working in the study of the adaptation and development of new species and varieties of nuts: pistachio, almond, walnut and hazelnut in Castilla y León. I am the principal investigator of a research project and three contracts of special relevance with companies, with special challenges related the design and optimization of irrigation management in pistachio and almond orchards. I have actively participated in the dissemination tasks, especially in activities related to transfer to the agri-food sector.

Resumen del Currículum Vitae:

My CV can be summarized in the following categories:

1. SCIENTIFIC PRODUCTION QUALITY

Number of publications indexed in Web of Science= 37 (Scopus;35)
h index WOS =21 (Scopus;22)
Citations according to the Web of Science = 1034 (Scopus; 1143 cites)
N publications SCI as first or last author = 14
Thesis supervised = 1 (ongoing)
A book chapter
51 communications in international congresses and 11 in national congresses
Author of 16 documents for the dissemination of scientific results to the general public and numerous outreach talks (18)

2. MOBILITY AND INTERNATIONAL ACTIVITY

Postdoctoral stays in R&D centres abroad Spain: fellow from FAPESP in São Paulo State University, Brazil (2 months), fellow Jose Castillejo in Universita degli studi di Bari, Italy (4 months), and fellow FULBRIGHT in UC Davis, USA (4 months- under evaluation, resolution march 2022)

In Spain, 3 National recognized research institutions, pioneers in their fields: CEBAS-CSIC (11 years, 2005-2015), Aula Dei-CSIC (15 months, 2016-2017) and ITACyl (4 years, 2017-present)

Network and international cooperation: Brazil, Italy, Venezuela, Cuba, Mexico, Netherlands and Denmark. I co-authored 6 SCI papers with foreign colleagues, 5 in the last 4 years.

Participation in 5 international research projects
1 Invited Speaker +1 keynote lecture at International Congresses

3. LEADERSHIP

Independence and scientific freedom, referee for several journals (85 reviews)
Ability to attract funds and create/manage innovative projects, PI in a regional project and 3 contracts with companies
Guest Editor in 3 Special Issues: Water , Horticulturae and Agronomy journals
Supervisor of one MSc thesis and one final degree project.
Member of a doctoral thesis committee at UPCT.
62 contributions in international and national congresses (51 in international congresses), including 22 oral communications and 3 keynote lectures.
Conferences given upon invitation: 3 (2 International).
A competitive postdoctoral position (DOC-INIA)
Actively involved in the transference of knowledge on water management and nut crops.
Author of 16 documents for the dissemination of scientific results to the general public (Vida Rural, Fruticultura)

speaker in 18 outreach talks, numerous appearances in mass media: TV programs (Surcos, Yo soy de campo) and press (El mundo de CyL) related to the transfer to the agricultural sector.

R&D projects evaluation: AEI-Agri, MAPAMA, 2018, 2019 and 2020 calls, (14 projects)

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Área Temática: **Ciencias agrarias y agroalimentarias**
Nombre: COLLADO GONZALEZ, JACINTA
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Título: Development of new strategies in the valuation of products and horticultural by-products under a climate crisis scenario

Resumen de la Memoria:

She won the competitive FPI predoctoral fellowship from the MICINN that she started to enjoy in 2012 at the for Edaphology and Biology applied to Segura (CEBAS-CSIC). Her thesis entitled Effect of regulated deficit irrigation and Spanish-style processing on the generation of phytoprostanes in extra virgin olive oil and green table olives was focused on the identification and quantification in different matrices of plant material of novel compounds called phytoprostanes (PhytoPs). She developed and validate a new analytical method that allows identify and quantify them by using UHPLC/MS MS. The applicant also found that PhytoPs are more affected by the duration of water stress applied than by the level of stress achieved. Besides, she proposed 9-F1t-PhytoP, 9-epi-9-F1t-PhytoP and the 16-B1-PhytoP as early biomarkers of water stress in olive tree. During her predoctoral period, the applicant had a short stay in the Faculty of Pharmacy in the University of Porto (Portugal) after being awarded a competitive Doctoral Stay Grant from MICINN. In that stay, the applicant achieved to show the in vitro anticholinesterase and antidiabetic activities in Spanish EVOOs. The applicant obtained her PhD degree with Cum Laude and International Doctor mentions and she was given the Extraordinary Doctorate Award.
The applicant was awarded a competitive postdoctoral fellowship Juan de la Cierva formación from MICINN. and joined the Food Quality and Safety research group of Department of Agrifood Technology at the University Miguel Hernández in Elche (UMH). The major milestone achieved as a consequence of her studies during her first postdoctoral stage is the participation in the patent of the hidroSOS brand. The hydroSOS index allow to certificate as hydroSOS products to those products that meet the requirements established in three quality areas. Additionally, she began research on the revaluation of by-products. During this stage, she was also awarded two competitive postdoctoral stay fellowship for staying two months in Wrocław University of Environmental and Life Sciences Wroclaw (Poland) and two months in University of Agriculture in Nitra (Slovakia) from the UMH.
In 2019, after obtaining a new postdoctoral research contract, in the framework of a strategic project financed by the European Commission (FEDER 1420-30), the applicant joined the horticulture group at the Murcia Institute of Agri-Food Research and Development. In this stage, the applicant has found and proposed a new strategy that should be considered as a useful strategy for enhancing the valuable plant compounds in our diet and it contribute to minimizing the nitrate contamination. Likewise, during this stage the applicant is planning and performing studies in order to revalue the different by-products of different crops in order to give them a second life.
She has also given 130 lecture hours at UMH, co-directed 1 Bachelor student at UPCT and supervised extracurricular practices of 5 UM students and was a member of the doctoral thesis tribunal at the UPCT. The applicant is the author of 47 publications in peer-reviewed journals (38 of them in the first quartile) and 2 book chapters. She has contributed to 36 congresses. The applicant has obtained the title of "Professor contracted Doctor" by ANECA. She is reviewer in many high impact journals (Food Chemistry, Foods, etc).

Resumen del Currículum Vitae:

Jacinta got a degree in Chemistry (2009) from the University of Murcia. She then was awarded with a Leonardo Da Vinci fellowship from the Spanish Ministry of Education, Culture and Sports (MECD) that she developed at the Vienna University of Technology. In 2011, the applicant obtained a Master in Environmental Engineering, Chemical and Biotechnological Processes at the Polytechnic University of Cartagena and was also awarded with a FPI predoctoral competitive fellowship from the Spanish Research Agency of the Ministry of Science and Innovation (MICINN) that she enjoyed the for Edaphology and Biology applied to Segura (CEBAS-CSIC). During her predoctoral period the candidate also had a short stay in the Faculty of Pharmacy at the University of Porto (Portugal) after being awarded a competitive fellowship for doctoral Stay from MICINN. The applicant was awarded the prize for the best doctoral thesis by the University Miguel Hernández in Elche (UMH). Moreover, she was also awarded the postdoctoral fellowship Juan de la Cierva Formation by MICINN. The applicant joined in 2017 the Agrifood Technology department at UMH. During this postdoctoral stage, the applicant was awarded two fellowships for carrying out short stays at Wrocław University of Environmental and Life Sciences and at University of Agriculture in Nitra. In 2019, the applicant joined the department of plant production and agrotechnology at Murcia Institute of Agri-Food Research and Development (IMIDA) after obtaining a competitive postdoctoral research contract.
During the predoctoral stage, the candidate focused on the study of how regulated deficit irrigation (RDI) could influence the content of bioactive compounds both in foods and in foodstuffs, mainly olives and olive oil, from plants under RDI stress. She focused on the study of Phytoprostanes (PhytoPs). The applicant developed and validated a new methodology for quantify them by using UHPLC-MS/MS. Her investigation during her first postdoctoral stage was very key in the creation of an index of hydro-sustainability (hydroSOS) that was patented.
In her second postdoctoral stage, the candidate is also studying the effect of heat stress and level of CO2 on the content of bioactive compounds in plants. Her work is also contributing to minimizing the nitrate contamination. So far, the candidate has proposed new strategies that can be considered key for obtaining more sustainable and healthier vegetables and provide an approach that allows taking advantage of heat waves.
She has also co-directed 1 Bachelor student at UPCT, supervised extracurricular practices of 5 UM students, was a member of the doctoral thesis tribunal at the UPCT and delivered 130 h of lectures at UMH. She has obtained the doctor contracted professor accreditation by ANECA. The applicant has also participated in many divulgation activities, such as talks dissemination by on line - Webinar's and two outreach courses at the UMH.
Articles in JCR: 47; Total number of citations: 843; Average number of citations during the postdoctoral period (2016-2021): 746; Publications in the first quartile (Q1): 38 (14 as first author, 5 as corresponding author); Publications in the first decile (D1): 11 (4 as first author, 1 as corresponding author); Book chapters: 2; H index: 18 (from the Scopus). She has contributed to 36 works presented in scientific congresses.

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Área Temática: **Ciencias agrarias y agroalimentarias**
Nombre: PEREZ MENDEZ, NESTOR
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Título: Ecological intensification of crop production for enhancing biodiversity and ecosystem services

Resumen de la Memoria:

I have a BSc degree in biology (2008, University of La Laguna, Spain), a MSc in biodiversity conservation (2010, University of Barcelona) and a PhD in environmental sciences (2016, EBD-CSIC, Pablo Olavide University, Spain). My research seeks to understand the effects of global change drivers such as defaunation, eutrophication, introduction of invasive species, and habitat loss on biological communities (i.e., plants, frugivores, pollinators and herbivores) and key ecosystem functions (animal pollination, animal seed dispersal and herbivory). During my postdoc period, the focus of my research has progressively shifted from understanding the ecological processes operating in natural systems (ecology) to processes operating in agricultural systems (agroecology). In this sense, I am particularly interested on evaluating the outcomes of different ecological intensification practices to identify the best strategies that enables to optimize the conservation of farm-associated biodiversity and the multidimensional range of ecosystem services it provides to crop producers (environmental and socioeconomic). I use an integrative approach by combining experimental and observational studies, molecular tools, spatial analysis (GIS), big data analysis, and quantitative statistical modelling to address all these questions. I have used a broad range of organisms (plants, vertebrates, and arthropods) and crops (apple and rice) as study systems and have worked at multiple spatial scales (from local to global scales). I am a young researcher (< 6 years as postdoc) with a large network of national and international collaborators that have prioritized quality over quantity, as highlighted for instance by the individual impact of my articles (mean ± SD: 10.0 ± 2.4 cites per year and paper), most of them being published in the most prestigious journals of the field (e.g. TREE, PNAS, JEcol, JAppEcol, etc). The impact of my research is not limited to the academia, but it has also relevance for policy making, sustainable farming management and raising the public awareness of the importance of preserving biodiversity and ecosystem services.

Resumen del Currículum Vitae:

I am an ecologist broadly interested in i) assessing the impact of global change drivers on the functioning of natural and agricultural systems and ii) identifying and evaluating potential ecological intensification strategies that help at increasing sustainability of crop production. I have developed my career in national and international prestigious research institutions. I have a wide international experience, which is shown not only by my international predoctoral and postdoctoral stays but also by my large international collaboration network. My career as researcher has been almost 100% funded by highly competitive fellows such as the predoctoral FPI, the postdoc CONICET and the JdC-Incorporación fellowships (plus a Junta de Andalucía postdoc fellow and a permanent position as independent researcher in CONICET that I did not accept). This gave me the opportunity to progressively acquire independency and leadership for developing my own research, including a completely new line of research on sustainable rice farming in my current host institution (IRTA-Amposta).

I am a young researcher (< 6 years as postdoc) that have prioritized quality rather than quantity, focusing on works of high conceptual novelty and/or generalization over specialized results. I have authored 22 SCI articles, 2 book chapters, 5 popular science articles and numerous technical reports in collaboration with > 60 researchers hosted in 24 different countries and 4 continents. I am relevant author in 16 of those SCI-articles (73 %), which have been published in the most prestigious journals in the Ecology/Agriculture field such as TREE, PNAS, JEcol, JAppEcol, Ecology, AgricEcosEnvironm or STOTEN amongst others. In addition, the annual number of cites per year of my articles (mean ± SD: 10.0 ± 2.4) is consistently much higher than the IF of the journals where they are published, highlighting the important impact of my research. Despite all my publications are recent (< 7 years), they have already accumulated >500 citations (G-Scholar, 6 February 2022) and the number of annual citations is growing exponentially. I am first author in five out of my eight most cited papers. I have contributed to get almost 3 million through my participation in multiple national and international projects and contracts with the agri-food industry (864k being IP, co-IP or WP leader).

I have participated in the last global assessment of the IPBES as contributing author and I am expert member of the IUCN since 2021. The outcomes of my studies are also aligned to the interests of the agri-food sector as shown by the funding acquisition from private entities. Outreach activities to disseminate my research among the general public also includes TV reports, radio interviews, marketing campaigns and popular science publications in blog posts, magazines and regular press releases.

I have supervised 2 MSc and 1 Bachelor s student, and mentored 2 PhD students (not formal supervision) and numerous visiting students. I have attended many national and international conferences and workshops. I have served as reviewer for > 15 different journals. I have been committee member in 2 PhD theses and international evaluator in another one. I have been invited to review for Agencia Española de Investigación and the National Science Foundation-NSF (USA) funding agencies. I have co-organized a national course on "Spatial Ecology". I am associate editor of the Ecologia Austral SCI-journal.