



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: SANCHEZ VALLET, ANDREA
Referencia: RYC2018-025530-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: andreasanchezvallet@gmail.com

Título:

Moleclular plant microbe interactions. Pathogens of crops

Resumen de la Memoria:

Since my studies I have been fascinated with the molecular dialog between plants and pathogens. In my PhD in the University Politécnica (Madrid), I investigated the molecular components behind nonhost resistance against fungi and bacteria and I identified several plant antimicrobials (Sánchez-Vallet et al. 2010, 2012). I additionally gained experience on working with secondary metabolites in my stage in the Max Planck Society (Bednarek et al. 2009). Having acquired experience on plant resistance, I got interested in investigating pathogen virulence. To develop this research, I obtained a Marie Curie COFUND grant to continue my career in Wageningen University (The Netherlands) to start my postdoctoral studies. In my postdoc I deepened into the understanding on the molecular components involved in pathogenicity (Sánchez-Vallet et al. 2013, 2015). After this period, I decided to go a step further in my career and established an independent research team in the ETH Zurich (Switzerland). As a group leader I started a novel research line which aimed to investigate the interaction between wheat and the main fungal pathogen in Europe *Zymoseptoria tritici* (Meile et al, 2018; Krishnan et al., 2018; Sánchez-Vallet et al., 2018). My team is formed by two PhD students, one technician and five MSc students. An additional PhD student successfully finished her PhD this year. I was awarded with two grants to develop my independent research lines (ETH Zürich Research Grant and ETH Zurich Career Seed Grant). My achievements as a researcher are illustrated by my obtained patent, the 26 published manuscripts (25 in Q1, 2 as senior author and 10 as first author; H-index of 17; 1645 citations), my, the and by my success in being awarded with different research grants.

My future research interest is to gain fundamental knowledge of plant pathosystems in crops with two aims: investigating mixed infections and characterizing virulence factors. The research lines I have been carrying in the ETH have established the ground of my future research projects.

With this in my mind, my research vision is to gain knowledge on the key processes underlying pathogenesis. In my PhD in the University Politécnica de Madrid, I investigated the molecular components behind nonhost resistance and I contributed to the identification of broadly active antimicrobials known as tryptophan-derived glucosinolates. In my postdoc in Wageningen University (The Netherlands), I deepened into the understanding on the molecular components involved in pathogenicity and functionally characterized the function of two broadly distributed effectors, known as LysM effectors. After this period, I moved to the ETH Zurich (Switzerland) as a group leader and established a novel research line which aims to investigate the molecular components behind pathogenicity of the main fungal pathogen of wheat in Europe, *Z. tritici*. My research has contributed to: (1) identifying genes involved in resistance in wheat, (2) identifying virulence factors; (3) characterizing the role of transposable elements on pathogen adaptation to stress and pathogenicity; (4) determining the molecular components behind pathogen interaction. My achievements as an independent researcher are illustrated by the published manuscripts and by my success in being awarded with different research grants during my career as a postdoc (Marie Cur

Resumen del Currículum Vitae:

1. Aportaciones científicas:

- 26 artículos SCI (1er autor: 10, Senior autor: 2, Autor corresp.: 2)
- 1er cuartil: 25 artículos
- Índice H: 17 (Scopus); 19 (Google Scholar)

2. Estancias en el extranjero

- Estancias predoctorales: 3 meses en Max Planck Society (Cologne, Germany).
- Estancias postdoctorales: Beca Marie Curie COFUND en Wageningen University (Países Bajos, 3 años), Lübeck University (Germany, 3 meses) y Exeter University (UK, 15 days).
- Jefe de grupo: ETH, Zurich (4 años).

3. Proyectos de investigación

- IP Proyecto ETH Seed (2016-2018). Cantidad: 43144
- Co-IP Proyecto ETH (2016-2019). Cantidad: 210000
- Co-IP Proyecto FSOV (2019-2022). Cantidad: 434707,57

4. Docencia y supervisión



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

- Actividades de divulgación: Semana de la Ciencia (2008)
- Best day (ETH, Zurich. Switzerland, 2018)
- Docencia: UPM, Wageningen University, ETH Zurich.
- 1 estudiante de doctorado finalizado en marzo 2018
- Actualmente supervisora de dos estudiantes de doctorado, cinco estudiantes de máster y un técnico.
- Supervisora de 4 tesis de máster y 4 tesinas.
- Supervisora de dos proyectos fin de carrera.
- Revisor y tribunal de 2 Tesis Doctorales programadas para 21 Febrero 2019 (Wageningen University) y 6 Marzo 2019 (University College Dublin).
- FPU (doctorado)
- Marie Curie COFUND para realizar el postdoc en Wageningen University

5. Otros méritos:

- Review Editor de Frontiers in Plant Science - Section Plant-Biotic Interaction
- Premio mejor poster Fungal Genetics Meeting 2016 (US)
- Revisora de revistas: PNAS, Plos Pathogens, Fungal Genetics and Biology, Molecular Plant Pathology, Frontiers in Plant Science, Plos ONE, Molecular Plant-Microbe Interactions.
- Invitado para dar charlas en conferencias: 3



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: HEREDIA GUERRERO, JOSE ALEJANDRO
Referencia: RYC2018-025079-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: jaherediag@gmail.com

Título:

Plant cuticle characterization and its use in the production of multifunctional food packaging materials

Resumen de la Memoria:

I am a chemist specialized in the production of multifunctional polymeric materials from plant wastes and in the characterization of plant cuticles. My research focuses on the fabrication of sustainable composites for food packaging materials. The goal has been to minimize the use of non-renewable natural resources by production of antioxidant, antibacterial, robust, and sustainable food packaging materials from plant by-products in a "circular economy" approach. I have actively pursued the application of chemical procedures for the transformation of vegetable biomasses, and other primary organic wastes of the food industry, directly into biodegradable polymers employing environmentally friendly processing methods. In addition, I have investigated the plant cuticle as an indicator of freshly fruit quality, in particular how biophysical (i.e., thermal, mechanic, and hydric) properties affect some important quality traits for consumers and prevents fruit cracking. My main model has been the cuticle of tomato fruits.

I received my PhD degree in Chemistry from the Universidad de Málaga under the supervision of Prof. Antonio Heredia and Dr. José J. Benítez. My PhD thesis was entitled *Autoensamblaje molecular y síntesis de materiales biomiméticos a partir de hidroxiacidos derivados de cutinas vegetales*. During this time, I studied the self-assembly of plant lipids both in air-solid interphase and aqueous environment and the polymerization of cutin monomers from tomato fruits to fabricate sustainable and biodegradable bioplastics. Moreover, I studied how the biophysical properties of plant cuticles influence the fruit cracking. Notably, this work received the *Premio Extraordinario de Doctorado*. The technological and industrial relevance of the results was also demonstrated with a patent application and later grant of said patent.

After applying for a competitive Postdoctoral position funded by a private company, in September 2012 I joined the *Istituto Italiano di Tecnologia (IIT)*. My research was focused on the substitution of petroleum-based materials by sustainable and biodegradable polymers. Later, in April 2014, I was awarded a *FP7-PEOPLE-2013-IEF-Marie-Curie Action (187.414,8 €)* with a project entitled *Bioplastic production from tomato peel residues*. During this period, I developed my own research line and grew as a scientist, managing the project budget and supervising some PhD and undergraduate students.

In April 2016, I was promoted to Researcher/Team Leader at the IIT. In this period, I was Co-PI of a private project (100000 €) funded by IIT and the *Università Cattolica del Sacro Cuore* entitled *Waste-derived new materials for agriculture and food systems*. Currently, I am a team leader within the group of Smart Materials. This position has allowed me the independence to pursue to develop my own research interests and to manage my own budget. My contributions to the field of sustainable materials from plant biomass and the characterization of plant cuticles have been recognized with several publications as corresponding author, the edition of one book, the participation as a guest editor in three special issues, four patents, 2 keynote speeches, and several contributions in international and national conferences as well as in different outreach activities.

Resumen del Currículum Vitae:

Google Scholar (21/01/2018):
Total citations: 1302, h-index: 22

Researcher ID (13/06/2018), <http://www.researcherid.com/rid/H-8822-2012>
Total citations: 947, h-index: 19

Awarded *FP7-PEOPLE-2013-IEF - Marie-Curie Action, 2014-2016, 187415 €*. Co-PI of a private project ("*Istituto Italiano di Tecnologia*"-"*Università Cattolica del Sacro Cuore*"), 2017-2018, 100000 €. I have participated in 6 public and 3 private projects.

Author of 47 papers in First Quartile journals, over 73 papers in total, 1 book chapter, and 2 books (including the PhD thesis). Inventor of 4 patents.

Keynote speeches at 2 conferences in Italy. Participation in 29 conferences. I have also participated in many outreach activities.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

In 2012 I was awarded the "Premio Extraordinario de Doctorado" by the "Facultad de Ciencias" of the "Universidad de Málaga" for the results of my PhD thesis.

Referee/reviewer for:

- Grant Bodies: ERA-NET on Coordinating Action in Plant Sciences and ACS Petroleum Research Fund. I belong to the database of collaborators experts called BECA (former ANEP database) in the area "CAA/Agricultural sciences and agro-alimentary", subarea "ALI/Food science and technology".

- PhD evaluation committees: Universidad Politécnica de Madrid, Universidad de Valladolid, Università degli Studi di Genova, and Universidad de Málaga.

- Journals: Nature Communications, Innovative Food Science and Emerging Technologies, Analytical Chemistry, Frontiers in Plant Science, Scientific Reports, Cellulose, Carbohydrate Polymers, Bioresources, PLOS one, GENE, Planta, Journal of Applied Polymer Science, International Journal of Nanomedicine, Bulletin of Geosciences, International Journal of Biological Macromolecules, Chemical Engineering Journal, Journal of Advanced Research, Journal of Physical Chemistry B, Letters in Drug Design and Discovery, AIChE Journal, International Journal of Coal Geology, Soil Biology and Biochemistry, Materials Chemistry and Physics, Materials and Design, Molecules, and Sensors.

Guest Editor of Frontiers in Chemistry, Frontiers in Materials, Journal of Experimental Botany, and Materials.

Co-supervisor of 2 PhD theses, 1 master's thesis, and 3 granted fellows. Currently, main supervisor of 2 PhD students and co-supervisor of 3 PhD students.

Some metrics of interest calculated from Web of Science citation report, 21/01/2018:

Total publications: 71; Corresponding author: 16.

h-index: 19.

Average citation per item: 13.49.

Sum of times cited: 958; Without self-citations: 776.

Citing articles: 654; Without self-citations: 600.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: RIBAS CABEZAS, LAIA
Referencia: RYC2018-024017-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: lribas@icm.csic.es

Título:

Estudio de las interacciones entre los sistemas inmunológico y reproductivo mediante aproximaciones -ómicas para la mejora de la producción acuícola

Resumen de la Memoria:

La trayectoria científica de la Dr. Laia Ribas se puede dividir en cuatro etapas: la etapa predoctoral, la etapa postdoctoral en el extranjero, la etapa postdoctoral en España y la etapa como investigadora principal. La etapa predoctoral empezó con una beca de grado de Erasmus en la Universidad de Wageningen (Holanda) con el Dr. Hans Komen, donde se inició en el campo de la acuicultura. A continuación, hizo su tesis doctoral en la Universidad Autónoma de Barcelona, dirigida por el Dr. Simon MacKenzie y Dr. Lluís Tort y financiada por una beca de Formación de Personal Investigador (FPI). Su tesis doctoral se basó en el estudio del estrés y la respuesta inmunológica de los peces con el fin de buscar marcadores para la mejora de la producción acuícola. Gracias a esta experiencia, aprendió y utilizó herramientas genómicas, siendo pionera en su utilización en el campo de la acuicultura y le permitió obtener un trabajo postdoctoral en el Imperial College of London, con el Dr. Mathew Fisher, donde estudió la respuesta inmunológica de los anfibios frente a infecciones fúngicas describiendo marcadores moleculares de diagnóstico. En su regreso, su etapa postdoctoral en España, empezó con un periodo de seis meses como investigadora en la UAB y después empezó a trabajar en el campo de la reproducción en peces en el Instituto de Ciencias del Mar (ICM-CSIC) de Barcelona, con el Dr. Francesc Piferrer. En este grupo se especializó en el estudio de los efectos medioambientales sobre el desarrollo gonadal de los peces, describiendo mecanismos epigenéticos y transcriptómicos. También, instaló, y es responsable, de la única cámara experimental de pez cebra (*Danio rerio*) en el ICM, permitiendo hacer estudios también con esta especie. Actualmente, la Dra. Laia Ribas lidera proyectos para estudiar la interacción del sistema inmunológico-reproductivo en peces, mediante estrategias -ómicas, un campo de investigación poco explorado en peces. Es investigadora principal (IP) de dos proyectos de investigación: un proyecto nacional (Joven Investigador, JIN: AGL2015-73864, 205.579) y uno internacional (Natural Sciences Council of Canada: NSECC, 40.000) y está pendiente de resolución de cinco más. También lidera la colaboración con dos investigadores nacionales (Dr. Ibon Cancio, UPV, y Dra. Nerea Roher, UAB) y cuatro internacionales (Dr. Julien Bobe, Francia; Dr. Hamid Habibi, Canadá; Dr. Kurt Garmperl, Canadá; Dr. Peter Alëstrom, Dra. Yara Müller (Brasil)). Laia Ribas quiere estudiar cómo los factores ambientales, en concreto la estimulación del sistema inmunitario, durante las primeras etapas del desarrollo, son capaces de modular el fenotipo final. Quiere comprender cómo los efectos de las interacciones animales-ambiente pueden modificar el fenotipo sexual a través de mecanismos moleculares (epigenética, transcripción y síntesis de metabolitos). En particular, le interesa comprender las interacciones entre el sistema inmunológico y el sistema de reproducción, un campo de investigación apenas explorado en peces y por lo tanto muy novedoso. El objetivo final de su investigación es identificar marcadores, tales como microRNAs y metabolitos, que puedan mejorar los programas acuícolas (por ejemplo, la selección de poblaciones de peces más resistentes o reproductores de alta calidad) para aumentar la producción animal. Posee el certificado I3 (Ministerio) y Lector y A

Resumen del Currículum Vitae:

Laia Ribas se doctoró por la Universidad Autónoma de Barcelona (UAB, 2006) gracias a la financiación de una beca predoctoral de Formación de Personal Investigador (FI) y a continuación, hizo un postdoc en el Imperial College de Londres. Ha trabajado de postdoc en el grupo del Dr. Francesc Piferrer durante casi 8 años en el Instituto de Ciencias Marinas (ICM, CSIC) de Barcelona.

Laia Ribas lidera su investigación para estudiar la interacción entre el sistema inmunológico y reproductivo, utilizando estrategias "-ómicas", un campo de investigación apenas explorado. Su línea de investigación ha sido financiada por el gobierno español (AGL2015-73864-JIN) y por el de Canadá (First Excellence Research Fund, MJ23-17). Esto le permitió iniciar nuevas colaboraciones con otros grupos de investigación a nivel nacional (Dr. Ibon Cancio, UPV, y Dra. Nerea Roher, UAB) e internacional (Dr. Julien Bobe, Francia; Dr. Hamid Habibi, Canadá; Dr. Kurt Garmperl, Canadá; Dr. Peter Alëstrom, Noruega, Dr. Yara Müller (Brasil)). Ha participado en un total de 22 proyectos (+ 3 internacionales pendientes de resolución).

Su calidad científica se resume en 43 publicaciones: 32 (26 artículos completos) incluidas en el Science Citation Index (SCI), 6 publicaciones fuera del SCI, 3 capítulos de libro, 1 libro y 2 artículos de divulgación científica. De los artículos completos dentro del SCI, tiene un total de 8, 15 y 3 publicaciones con unos índices de impacto comprendidos entre 0-3, 3-5 y 5-10 (PNAS y Epigenetics & Chromatin, como primer autor, y PLoS Genetics), respectivamente. Un total de 21 están dentro del Q1 y cinco de ellos en el D1. Es primera y segunda autora en un total de sus 46% y 35% de sus publicaciones, respectivamente, así como también autor de correspondencia en 3 de ellas.

Ha presentado 75 trabajos en congresos, siendo 54 de ellos internacionales. Gracias a su experiencia investigadora y su reconocimiento científico, ha sido invitada en ocho de ellos y ha organizado una sesión dentro de la European Aquaculture Society (Grecia, 2011).



MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Actualmente dirige dos tesis doctorales (en progreso), y ha supervisado a 34 estudiantes (6 masters), seis de ellos internacionales. Ha impartido unas 700 horas de clases lectivas en la universidad y posee las acreditaciones de Lector y Agregado. Periódicamente actúa como revisor de proyectos nacionales (ANEP) e internacionales (Argentina, Países Bajos, Israel) así como de revistas científicas y es editora de la revista *Frontiers in Genetics*.

Ha sido invitada como miembro de tribunal de seis tesis doctorales (1 internacional). Es responsable de la única cámara de pez cebrá en el ICM así como también es miembro del Comité de Ética de Experimentación Animal del ICM. Es miembro del equipo que recibió el XII Premio JACUMAR de Investigación en Acuicultura. Su interés por la divulgación científica se refleja en la publicación de dos artículos, ha aplicado un proyecto de divulgación (4.000) y periódicamente participa en eventos sociales.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: VALLI , ADRIAN ALEJANDRO
Referencia: RYC2018-025523-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: avalli@cnb.csic.es

Título:

Factors shaping virus RNA genome sequence as key players in novel plant antiviral biotools

Resumen de la Memoria:

During my PhD I studied the role of RNA silencing as a defence against viruses in plants, with specific focus on the counteracting effect of viral-encoded proteins. To examine how these pathogens can escape from the RNA silencing machinery and generate disease, I studied diverse factors expressed by two members of the family Potyviridae (the most important group of plant viruses with RNA genome), which infect economically relevant crops, such as cucumber plants and Prunus trees. My PhD was conducted at CNB-CSIC and gave rise to four publications for which I am the first author.

In parallel with my PhD, I worked in collaboration with other team to discover target mimicry, a mechanism that controls gene expression. The relevance of this work is illustrated by the fact that it has been cited in more than 850 publications. Moreover, target mimicry has become a bio-tool used worldwide to provide plants with novel features, including resistance to biotic and abiotic stresses.

Following my PhD, I stayed at CNB-CSIC as a postdoc. During this time I designed and supervised a whole project based on the construction of chimerical viruses carrying heterologous RNA silencing suppressors. These studies produced two articles for which I am the corresponding author. Along with other publications, I am the corresponding author on six different papers giving an idea about the high degree of independence and scientific maturity that I have already reach in my career.

After my first postdoc I joined the University of Cambridge as a Research Associate. In Cambridge I was awarded a project from the Marie S. Curie Actions to broad my knowledge about the complexity and evolution of RNA silencing pathways. Indeed, it has been a challenging project due to the novelty of using algae as model system to study RNA silencing. I set up a robust forward genetic screen that identified multitude of mutants affected at several stages of the RNA silencing cascade. The profound characterization of these mutant lines gave rise to a good publication, whereas a second article is currently under evaluation.

In parallel to my project in algae, in Cambridge I was also involved in diverse collaborations, in which we studied epigenetics, as well as virology, in higher plants. In one of them we discovered that small RNAs move long distances to control endogenous retroviruses and prevent genome instability, which gave rise to one publication. In another collaboration we found for the first time that plant viruses, similarly to what was observed in Ebolaviruses, take advantage of viral RNA polymerase slippage (RPS) to produce out-of-frame viral factors. This exciting discovery produced two publications. It worth mentioning that a grant proposal aiming to understand and use as tool RPS was selected in 2016 for funding by the Spanish MINECO.

I am currently conducting the above-mentioned studies at CNB-CSIC. I addition, I aim to identify factors shaping the genome sequence of plant RNA viruses. Indeed, our recent discovery of one of these factors (dinucleotide frequency) helped us to generate attenuate viruses with important biotechnological applications (e.g. cross-protection, cross-silencing of host genes).

Apart from experimentation I enjoy the supervision of students, pair-evaluation of papers for SCI journals (e.g. JVI, MPMI, MPP, TPJ, Plos Path), and outreach activities.

Resumen del Currículum Vitae:

PERSONAL INFORMATION

Name: Valli, Adrian Alejandro
Date of birth: 21/10/1977
Nationality: Argentina
Researcher ID: H-6738-2012
Orcid code: 0000-0002-3266-7200

EDUCATION

2010 PhD in Biological Sciences
Faculty of Sciences/ Department of Molecular Biology, Autonomous University of Madrid/ Spain
PhD Supervisor: Prof. Juan Antonio García

2002 BSc in Biotechnology
Faculty of Biochemistry and Biological Sciences/ National University of Littoral/ Argentina



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

CURRENT POSITION

2016 Junior Principal Investigator (JIN Program)
Department of Plant Molecular Genetics/ Spanish National Centre of Biotechnology (CNB-CSIC)/ The Spanish Research Council/
Spain

PREVIOUS POSITIONS

2011 2016 Research Associate
Department of Plant Sciences, University of Cambridge/ UK

2010 2011 Postdoctoral Fellow
Department of Plant Molecular Genetics/ Spanish National Centre of Biotechnology (CNB-CSIC)/ The Spanish Research Council/
Spain

2004 2010 PhD Student
Department of Plant Molecular Genetics/ Spanish National Centre of Biotechnology (CNB-CSIC)/ The Spanish Research Council/
Spain

SCIENTIFIC INDICATORS (24/01/2019)

H index: 14 (Scopus); 17 (Google Scholar)
Total number of articles in SCI journals: 21
Total number of citations: 1470 (Scopus); 2036 (Google Scholar)
First Quartile: 19 (90%)
Second Quartile: 2 (10%)
First or last (corresponding) author: 12 (55%)
First or last (corresponding) author in Q1: 12 (55%)
Corresponding Author: 6
Book Chapters: 5
Presentation in National/International Congresses: 32
Theses officially supervised: 4 completed (1 PhD, 2 Master, 1 Degree)
3 ongoing (1 PhD, 2 Masters)

GRANTED PROJECTS

2011 2013 Marie-Curie Action; 200.500

2017 2019 JIN Program (Spanish MINECO); 153.100

FELLOWSHIPS

2004 2008 I3P-European Social Funding, Department of Plant Molecular Genetics/ Spanish National Centre of Biotechnology (CNB-CSIC)/ The Spanish Research Council/ Spain

REVIEWER

2010 Reviewer of International Peer-Reviewed Journals/ Archives of Virology/ Plant and Cell Reports/ Current Opinion in Virology/ Frontiers (part of the Editorial Board)/ GENES/ PLOS Pathogens/ Molecular Plant Pathology/ Journal of Virology/ Molecular Plant-Microbe Interaction/ Viruses/ Biotechniques/ Plant Journal/ New Phytologist/ Annals of Applied Biology/ Plant Cell Reports/ Current Opinion in Virology



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: GONZALEZ DUGO, MARIA VICTORIA

Referencia: RYC2018-024994-I

Área Temática: Ciencias agrarias y agroalimentarias

Correo Electrónico: victoria.gonzalez@ias.csic.es

Título:

Efficient use of water and nutrient resources

Resumen de la Memoria:

My research experience is focused on the optimization of water and nitrogen use under water-limited conditions. It includes the application of the physiological basis for developing water saving strategies and remote sensing derived indicators to optimize water and nitrogen productivity. Irrigated agriculture is the primary user of fresh water; therefore, the optimization of irrigation is essential for the future of sustainable agriculture. Along with water, nitrogen is the most limiting production factor for agricultural yields, and its misuse is recognized as an important source of pollution. Detailed knowledge of crop physiology and yield responses is required to optimize the resource use efficiency in water-limited situations and to develop accurate tools for supporting decision making. My Ph.D. thesis, conducted at the INRA station in Lusignan (France), studied the effect of water stress on nitrogen dynamic in forage crops. This work had a multidisciplinary approach, from the agronomical aspects of the interaction between water and nitrogen at the field level to physiological studies on the effect of water status on root nitrogen uptake. The knowledge acquired about the physiology of crops under water stress conditions during my pre- and post-doctoral periods has brought my research to the development of deficit irrigation strategies in orchard trees, which constitutes the second axis of my research. Deficit irrigation (DI) strategies consist of the application of water below crop water requirements during phenological periods of lower sensitivity to water stress. For applying such a strategy, it is essential to have a thorough knowledge of stress physiology, and the sensitivity of crops to water stress during the contrasted phenological periods. The adoption of DI at larger scales requires the monitoring of water status at the field level, including the evaluation of field heterogeneity. The assessment of water status at this level with classical indicators is expensive and time-consuming. Remote sensing imagery acquired with aircraft or satellite-based sensors overcomes this problem. High-resolution airborne imagery enables the monitoring of large areas with the required accuracy for discontinuous canopies, as pure vegetation pixels can be targeted and separated from the background soil. The development of new water status indicators that encompass all these requirements constitutes the third axis of my research. In this sense, I started a new research line at the IAS-CSIC based on an integrative approach of crop physiology and remote sensing for the monitoring and diagnosis of plant responses to environmental stresses for management, and also for plant protection and crop breeding. This research aims at developing methods and indicators derived from thermal and hyperspectral imagery that can support decision making in agriculture. The assessment of the nutritional status by remote sensing methods connects this research area with my previous work on the optimization of nitrogen use. Regarding the technology transfer, I am the author of one patent held by the CSIC and I have been involved in several projects funded by national programs focused on the technology transfer to public and private companies, as well as contracts with the private sector.

Resumen del Currículum Vitae:

Scientific production

- Author of 37 articles in indexed journals; 25 papers (68%) published in Q1-journals.
- I was cited 1346 times (225 citations/year during the last 5-years).
- H-index=20 (Scopus).
- One of my articles is a highly cited paper according to the Essential Science Indicators. One paper published in Nature Plants during 2018.
- Author of three book chapters and 50 works presented at national and international conferences

Technology transfer

- Author of one patent (ES2385756) held by CSIC.
- Author of 10 technical reports for private companies in the context of competitive projects and contracts.
- Participation in the development of TIRadvisory, a web tool for commercial advisory service
- Co-PI for three contracts with private companies for consulting services and technology transfer. Total budget 348.000

International experience

- Forty months at INRA (France) with a contract funded by the French Government. Ph.D. obtained at the University of Poitiers (France).
- Evaluator for the H2020 and for the EUFAR. External evaluator of the FRS-FNRS
- Invitations as keynote speaker: INOVAGRI meeting in Brazil (2014), International Summit Forum on Development Strategy of Science and Technology in Agricultural Aviation in Beijing (2017), I Hall of Innovation and Technology of Water (Seville, 2018), and XIX Brazilian Symposium of Remote Sensing (Brazil, 2019)



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

National collaborations

- Participation in 10 national projects funded in competitive tender.
- Coordinator of the group of Cordoba involved in RIDECO project (CONSOLIDER-INGENIO 2010).
- Member of the Excellence Networks SIRENA and RIDECO RED

International collaborations

- Participation in five international projects; I act as co-PI for a WP in an EU project.
- Member of the steering committee of BEETPHEN project (Belgian Science Policy Office).
- Participation as consultant in the project IRRIGAOLIVO (ICARDA), funded by the CFC.

Teaching and supervising experience

- Regular participation in two master courses at the University of Cordoba since 2006. Participation in five training courses
- Supervisor of two MSc theses. One Ph.D. under supervision. Supervisor of two international alumni during their stage in CSIC

Dissemination activities

- Author of one article in the scientific outreach journal Hidden Nature, and one article in the scientific blog La cuadratura del círculo (CSIC Andalucía).
- Collaborating researcher in the initiative SciencesIES 2018 .
- Coordinator of the workshop "Methods derived from remote sensing for crop nitrogen management" (Cordoba, November 2017)

R&D management

- Supervisor of the radioactive facility held by IAS- CSIC.
- Member of the committee of Risk Prevention in IAS CSIC. Implementation of protocols and procedures at the laboratories of IAS

Editorial activities

- Member of the Scientific Committee of the symposium Model-It 2019.
- Editor for the journal Current Research in Hydrology and Water Resources (since 2017).
- Serving as Guest Editor for the Special Issue Agriculture Water Management and Water Saving Strategies (Journal Water)

Awards and accreditations

- Author of the paper selected as "Paper of the Year 2016" by the Australian Society of Viticulture and Oenology.
- Positive assessments as "Profesor Ayudante Doctor" and "Profesor Contratado Doctor" by ANECA



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: GULLON ESTEVEZ, BEATRIZ
Referencia: RYC2018-026177-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: bgullon@uvigo.es

Título:

Extraction of bioactive compounds from agroindustrial by-products: applications as functional food ingredients

Resumen de la Memoria:

Obtaining high added-value compounds from agro-industrial by-products is a complex task, key for the development of biorefineries in a circular economy framework. My research career has been devoted to the use of multidisciplinary tools, always centered on Food Science and Technology, to characterize, extract, enhance by enzymatic transformation and assess the most viable substrates and valorization processes.

During my PhD at the University of Vigo, I focused on the development of an environmentally friendly process for achieving an integral utilization of apple pomace, based on its chemical fractionation and further conversion of the resulting fractions into products suitable for food industry, such as lactic acid and pectooligosaccharides.

After my PhD, during the 3-year postdoctoral research stay in the Centro de Biotecnología e Química Fina (CBQF, Portugal) funded by a competitive international program of the Fundação para a Ciência e Tecnologia", I studied different extraction methods to obtain bioactive compounds (phenolic compounds, oligosaccharides, dietary fibre, etc) and to determine the compounds of interest in several agro-industrial by-products to formulate new functional foods. In this period, I led the following research lines:

- i) Manufacture, structural characterization, and evaluation of the prebiotic activity of oligosaccharides obtained from several biomass sources.
- ii) Assessment of nutritional and technological aspects related to the development of functional foods.
- iii) Assessment of antioxidant and antimicrobial properties in natural matrices, including food and food by-products.
- iv) In vitro bioaccessibility studies of antioxidants compounds present in dietary fiber-rich extracts.

I am currently a Juan de la Cierva-Incorporación fellow (ranked 1st) developing my research activity at the BioGroup (USC) and leading the following research lines:

- i) Environmental assessment of selected biorefining technologies applicable to agro-industrial byproducts to obtain high-value compounds.
- ii) Development of a feasible technology for the enzymatic production of multifunctional oligomers from natural flavonoids, from the extraction stage to the purification, characterization and finally evaluation of biological properties of the active compounds.

This research line lies in one of the key areas supported under Horizon 2020, the contribution to a Safe & Healthy Diet, and responds to a deep and widely spread society concern.

I am currently a recognized researcher in the field of economic valorization of by-products from agro-food industries with a solid scientific production: 66 articles JCR, 985 citations, h-index: 20), with demonstrated capacity of technology transfer (3 patents). Moreover, I have carried out stays in several internationally acknowledged reputation research groups, as is evidenced in the co-authorship of my publications, and this fact provided me an important multidisciplinary network for future collaborations in national and international research projects.

Finally, I have reached a position of professional maturity thanks to supervising 2 PhD, 8 MSc Theses and 14 BSc theses; participating in several proposals for competitive research projects (from H2020, including Portuguese and Spanish national projects) being principal investigator and WP leader in various of them leading my own line of research

Resumen del Currículum Vitae:

UNIVERSITY

Degree in Technical Agricultural Engineering, UVigo, 2003

Bachelor in Food Science and Technology, UVigo, 2006

PhD degree in the doctorate programme of Chemical Engineering, UVigo, 2011

AWARDS

Extraordinary Prize of Doctoral Thesis (UVigo)

Extraordinary Award by the Xunta de Galicia in Degree in Food Science and Technology

Extraordinary Award by the UVigo, Extraordinary Award by the Xunta de Galicia and 1st Extraordinary Award by the Spanish

Ministry of Education and Science in Degree in Technical Agricultural Engineering.

FELLOWSHIPS

I have been awarded with prestigious grants, this reflects my capacity to obtain my own funding and therefore, to develop my research career: a) FPU predoctoral fellowship (MEC), b) Postdoctoral fellowship from the Fundação para a Ciência e Tecnologia (Portugal), c) Postdoctoral fellowship (MICINN, 2013) (score 99/100) d) Juan de la Cierva-Incorporación contract (1st position 2015, MICINN).



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

RESEARCH STAYS

PREDOCTORAL STAYS

Institute of Agrochemistry and Food Technology (IATA-CSIC) (3 months).

PROSTDOCTORAL STAYS

Centre for Biological and Environmental Biology (University of Minho, Portugal, 2011, 3 months)

Centre of Biotechnology and Fine Chemistry (CBQF) of Catholic University of Portugal for 3 years (2012-2015).

Center for Biodiversity Research and Biotechnology (Federal University of Piauí, Brazil) (2 months).

PUBLICATIONS IN JCR JOURNALS

Publications: 66 (59 in the Q1, 32 of them in the first decile; 75% as first or second author and 5 as last author and corresponding author).

Citations: 985

h-index: 20

Co-author of 7 book chapters, 6 proceedings

Co-inventor of 3 patents

96 communications in scientific congress (89 international and 7 national), 2 as an invited speaker

INTERNATIONALIZATION

It is worth noting my capacity to networking, with 137 researchers from Spain, Brasil, France, Portugal, Germany, Cuba, The Netherlands, Ireland, India, Croatia and Benin among my co-authors in peer-review articles.

LEADERSHIP

My leadership is reflected in my participation in 30 competitive research projects, namely 6 European projects (workpackage leader in 1 of them), 6 National projects (1 as PI), 4 from the Portuguese Government (1 as PI) and 11 Regional projects. I have participated in 1 research contract with a private company and 1 non-competitive project (as PI). Overall, I have gained competitive fellowships/contracts equivalent to 242,000 euros. I have been first reserve in the Ramón y Cajal 2017 call.

My leadership has also been internationally recognized:

- I was selected as associate lecturer of the Degree of Agro-industrial Sciences of the Autonomous University of San Luis Potosí (Mexico).
- Amyris Bio Products Portugal created a position for me as a researcher.
- I participated as a member of the Scientific Advisory Board for the 4th Iberoamerican Congress on Biorefineries (Jaén, 2018)
- Evaluator of scientific projects from Croatian Science Foundation.

TEACHING AND STUDENT SUPERVISION

I have co-directed 5 MSc, 10 BSc Theses, and 5 internship students. I also supervised 1 MSc, 3 PhD students and 4 post-doctoral researchers in their short stays at CBQF and USC. At present, I am co-supervising 2 PhD theses and 4 BSc Theses.

My teaching experience, awarded by the USC, includes about 240 h of BsC teaching.

I obtained the positive evaluation of the ANECA as Profesor Contratado doctor .



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: PIAZZON DE HARO, MARIA CARLA
Referencia: RYC2018-024049-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: carlapiazzon@yahoo.es

Título:

Inmunología de peces

Resumen de la Memoria:

I am a Biologist specialized in Molecular Biology and Biotechnology with more than 10 years of research experience in Fish Immunology and Parasitology. Since the beginning, I have focused on fish immunology and participated in several projects dealing with the improvement of fish health in aquaculture, development of vaccines and eradication of pathogens (mainly parasitic). I have worked with different marine and freshwater fish species and pathogens, not only parasitic but also viral and bacterial. Currently, I have a special focus on mucosal health, including the study of mucosal microbiota and its impact on immune status and disease. My scientific profile navigates between applied and fundamental research with the goal of gaining knowledge to set a solid foundation to base future applications towards improving animal welfare in aquaculture. Thus, my research line fits within the Societal Challenges (SC-2) and Excellence (ERC) programs of the H2020 framework of the EU and the National calls.

My research career started as an undergraduate financed by a personal collaboration grant at the department of Cell Biology of the University of Santiago de Compostela, where I performed my bachelor thesis, a DEA in Marine Biology and Aquaculture, and my doctoral thesis. My early studies were in immunostimulants for fish and the development and improvement of vaccines against important fish parasites. Due to the relevance for the aquaculture industry, my PhD project was funded by a personal grant from the local government, including a 3-month stay at Wageningen University (WUR). I also acquired technical and financial support from private aquaculture companies and participated in several competitive projects. My (European) PhD thesis was qualified cum laude with special doctorate award, it was published as a book and led to 6 peer-reviewed publications.

After my PhD, I was awarded an individual Marie Curie Intra-European Fellowship (MSCA-IEF) to continue my research at WUR, the Netherlands, where I spent more than 2 years studying anti-inflammatory cytokines in carp and a carp virus. My stay led to 5 publications in high impact journals and improved my professional network due to the participation in international conferences, collaborations with international research groups and the yearly celebration of an international workshop where I was, and still am, involved in the organizing and teaching. I was also teaching Human and Veterinary Immunology (master level) and supervised one bachelor thesis and one master thesis.

Four years ago, I started working at the Instituto de Acuicultura Torre de la Sal (IATS) with a Spanish grant (Juan de la Cierva), and currently I work in a research project of the Fish Pathology Group. I study the immunity of sea bream against parasites and under different dietary conditions with the goal of improving the health of farmed fish. I am involved in several national and international (H2020) projects with public and private entities and I teach Fish Immunology in the Aquaculture Master at the University of Valencia. During these years I published 7 articles in high impact journals, participated in several national and international conferences and EU project meetings, helped to organize and was a speaker in an international training course in Fish Nutrition and supervised an Aquaexcel2020 TNA project.

Resumen del Currículum Vitae:

EDUCATION/THESES

2010 European PhD in Biology. USC, Spain. Published (ISBN). Cum laude. Extraordinary award.
2006 DEA: Marine Biology and Aquaculture. USC, Spain.
2004 Degree in Biology: Molecular Biology and Biotechnology. USC, Spain.

COURSES/TRAINING

28 specialized courses on the latest technologies, not available during my university and PhD training.

PROFESSIONAL RECORD

2017 19 Postdoctoral researcher (appointed on project) IATS-CSIC, Spain.
2015 17 Postdoctoral researcher (Juan de la Cierva) IATS-CSIC, Spain.
2012 14 Postdoctoral researcher (MSCA-IEF) Cell Biology and Immunology group, Wageningen University (CBI, WUR), Netherlands.
2011 12 Postdoctoral researcher (appointed on project) IIAA, USC, Spain.
2008 10 PhD student (Maria Barbeito fellowship), Cell Biology, USC, Spain.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

2006 07 Laboratory technician, CETGA, Spain.
2003 06 Research assistant (unfinanced), Cell Biology, USC, Spain.

STAYS IN R&D CENTERS OTHER THAN PhD CENTER

2015 IATS-CSIC, Spain: 2 years, Juan de la Cierva postdoctoral researcher.
2012 CBI, WUR, Netherlands: 2 years 7 months, Marie Curie postdoctoral researcher as PI of a personal project.
2009 CBI, WUR, Netherlands: 3 months, predoctoral stay.
2001 Academia Nacional de Medicina, Buenos Aires, Argentina: 2 months collaboration internship.

PARTICIPATION IN R&D PROJECTS

-Competitive: 16 (PI:3)
-Non-competitive: 3

FELLOWSHIPS/GRANTS

2015 17 Ayudas para contratos para la Formación Posdoctoral 2013 (MIMECO).
2012 14 MSCA-IEF (FP7-PEOPLE-2011-IEF-302444, FISHIL10).
2008 Becas para estancias de investigación fuera de Galicia (Xunta de Galicia).
2008 10 Maria Barbeito predoctoral fellowship (Xunta de Galicia).
2003 04 Collaboration grant for undergraduates (Ministerio de Educación, Cultura y Deporte).

SCIENTIFIC PRODUCTION

-Publications in JCR journals: 28 (20 Q1)
-First/last authorship: 16 (14 Q1)
-h index: 11
-Subject areas: Immunology, Aquatic science, Parasitology, Molecular biology, Microbiology.

CONFERENCES

Works presented in conferences: 22 (all accepted upon review, 13 international, 12 oral presentations)

TEACHING ACTIVITIES

2017 International training course on Fish Nutrition, Benicassim, Spain. Organizing and teaching.
2016 18 Patología e Inmunología, Universidad de Valencia. Aquaculture Master s course.
2013 18 Fish Immunology workshop (international), WUR, Netherlands. Practicals organizing and teaching and invited lecturer.
2012 14 Human and Veterinary Immunology, WUR, Netherlands. University course (Master). Practicals organizing and teaching.

ADVISING EXPERIENCE, SUPERVISION OF STUDENTS

2017 Supervision of transnational access (TNA, Aquaexcel2020).
2016 Short stay of 2 Students from CBI, WUR, at the IATS-CSIC to be instructed in bioinformatics analyses and experimental procedures.
2014 A. Wentzel. Master thesis. Overall winner UFW-KLV thesis prize.
2014 A. Wentzel. Capita selecta.
2013 D. Hof. Minor Thesis.
2008 17 Advising Bachelor, Master and PhD students: USC, CBI and IATS.

COLLABORATION NETWORK

More than 60 co-authors from different European institutions including Netherlands, Belgium, Ireland, Spain, Croatia and France. Not only academic, but also from the private aquaculture industry. In addition, the attendance to international conferences and my involvement in the annual international Fish Immunology Workshop keeps me in contact with experts in (fish) immunology at a worldwide level.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: APONTE PERALES, CRISTINA
Referencia: RYC2018-024614-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: cristinaaponte@gmail.com

Título:

Forest management (T B C)

Resumen de la Memoria:

#RESEARCH CAREER

My career started at the Mediterranean Agronomic institute of Chania (Greece) during my two-year MSc. In 2006 I was granted an FPI (PhD) Fellowship at the Institute of Natural Resources and Agrobiology of Seville (Spain). My PhD focused on plant-soil interactions in mixed-species Mediterranean forests. My dissertation was awarded the Extraordinary Doctorate Award in Science 2010 (University of Seville), received the maximum academic distinction (cum laude) and the European PhD mention.

As a postdoctoral fellow I held contracts at the Faculty of Agriculture and Environment (University of Sydney) and the School of Ecosystem and Forest Sciences (University of Melbourne), where I expanded my knowledge on temperate forest dynamics under a changing environment and acquired strong modelling skills. At the University of Melbourne, where I currently hold a continuing research position, I have successfully established myself as an independent researcher. I have developed a multidisciplinary research program on the impacts of global change on forest dynamics that is innovative and highly relevant for land managers, as it aims to provide evidence underpinning operational forest management decision making. I have also consolidated my international profile by building collaborations with researchers from Greece, France, Switzerland, Germany, Romania, USA, Canada, and New Zealand.

I have an outstanding track record despite career interruptions totaling two years due to three maternity leaves and one international relocation. Having worked 6 years since finishing my PhD I have produced 58 scientific documents, including 31 SCI articles in top journals such as Forest Ecol. Manag. (5), Ecol. Appl. (2), Int. J. Wildland Fire (3), Plant Soil (2) or Remote Sens. Environ. (3). My leadership capacity is demonstrated by my roles at the University, where I teach (BSc and MSc subjects) and supervise one postdoc, one research assistant and five international PhD students. I have a successful funding record, with 24 awarded projects for a total amount of > 4.8 M . I have received five research fellowships and a dozen small grants towards student projects.

#RESEARCH LINE

My research program articulates around two axes: Understanding the effects of agents of global change on forest structure, composition and productivity and Forecasting the future of our forests under a range of global change scenarios with the aim of providing robust evidence to underpin forest management decision making.

In this context I have investigated the effects of natural and anthropogenic drivers of change such as wildfire and prescribed burns, climate, windthrows and pests, soil symbionts and pathogens, and silviculture and social environment on forest systems through descriptive and experimental field and glasshouse studies at local to landscape scales. I have worked with advance remote sensing technologies to develop methods for assessing the temporal and spatial patterns of forest disturbances and monitoring forest recovery. The knowledge gathered through this enhanced understanding of forests dynamics under global change feeds into a forecasting modelling framework that uses forest simulation models and Bayesian networks to identify the main risks to our forest under future scenarios and infer the efficiency of management practices to mitigate those risks.

Resumen del Currículum Vitae:

Scientific production

- 31 SCI articles in the 6 years worked since PhD (discounting career interruptions)
- Lead author of 51% of the 31 SCI articles: 9 as first author, 7 as last/senior author
- 74% of the 31 SCI articles are co-authored by international researchers
- SCI articles in top journals: 15 papers (48%) in journals ranked within the first decile, 25 papers (81%) in journals ranked in the first quartile
- 480 citations & h-index of 13 (Scopus, January 2019)
- 670 citations & h-index of 14 (Google Scholar, January 2019)
- 10 peer-reviewed articles in non-indexed journals



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

- 17 technical reports submitted to industry partners
- 49 conference submissions: 29 oral communications, 20 poster ; 22 International conferences; one keynote speaker

#Grants

- Participant in 24 research projects funded through competitive grants (#17, 1.2 M.) and non-competitive industry research contracts (#7, 3.6 M)
- Of the 24 projects, 10 were funded by Spanish organisms, and 14 were funded by international (13) and supra-national (1) organisms
- PI in 3 competitive grants and Co-PI in 6 research projects funded by competitive grants (2) and non-competitive contracts (4).
- Currently Work Package leader of an international research project (total value of 0.8 M).
- Recipient of national and international fellowships and awards including: CIHEAM Master scholarship, Spanish PhD Scholarship - FPI, Spanish Postdoctoral Mobility Grant, Australian Postdoctoral Endeavour Award, University of Melbourne Early Career Research Grant (totaling 0.2 M)
- Recipient of small grants for student projects: Holsworth Wildlife Research Endowment Grant, Bill Borthwick Student Scholarships, Applied Forest Ecology Scholarship, Madeleine Selwyn Smith Memorial Scholarship, SF Pond travelling scholarship, Dr Betty Elliot Horticulture Scholarship.

#Supervision

- Currently I supervise: 5 international PhD students (Australia, New Zealand, Vietnam, Sri Lanka, Nepal), 1 Postdoc (Spanish), 1 MSc student (Romania), 1 Research Assistant (Australian)
- Previously at The University I have supervised to completion 2 international MSc students (Colombia, Mexico) a Research assistant, a Lecture Assistant and a Demonstrator for teaching support.

Leadership in R+D activities

- Convener of 4 sessions at International conferences
- Guest editor of 2 Special Issues (resulted from sessions I convened)
- Organizer of a weekly Seminar Series, a writing club, and the Forest Ecological Research Network (research group) at the University of Melbourne
- Convener of participative workshops for stakeholder engagement
- Member of 3 Evaluation Panels for reviewing international project proposals
- Reviewer of 1 international PhD thesis and 5 Master projects.

Teaching, Mentoring and Outreach activities

- I have coordinated subjects for the Associate Degree of Urban Horticulture, the Bachelor of Science (specialization in Forest Ecosystems) and the Master of Forest Ecosystem Science at the University of Melbourne.
- I am member of the Staff Equity & Equal Opportunity Committee at the School of Ecosystem and Forest Sciences that acts upon issues related to aboriginal staff, LGBTI, staff with a disability, and staff with parent and career responsibilities
- I am ambassador for the NGO ChooseMaths that promote STEM careers among young girls.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: PEREZ CRUZADO, CESAR
Referencia: RYC2018-024939-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: cepecruzado@gmail.com

Título:

Forest degradation processes and carbon dynamics

Resumen de la Memoria:

My research focuses on monitoring carbon emissions in forest ecosystems due to degradation processes as a basis for further application in large-scale carbon emission monitoring in forested areas. In the previous phase, I evaluated carbon stocks and fluxes in different forested transition systems worldwide with the final goal of developing methods of monitoring forest degradation for carbon accounting. This process has been completed after several years of research, and in the next phase I aim to carry out detailed studies of different degradation processes and their effect on the carbon stocks and carbon sequestration, as well as large-scale carbon emissions estimates associated with forest degradation.

I began my research on carbon sequestration of forest ecosystems during my MSc and PhD theses at the EPSE-USC where I evaluated the effects of afforestation of pastureland with fast growing tree species on carbon accumulation in different compartments. For my PhD research, I was granted an FPU fellowship to conduct research at the EPSE-USC. I focused my research on modelling some parameters that may be influenced by management, with special focus on living biomass, mineral soil, litter, forest products and bioenergy.

In my first postdoctoral experience at the USC and at the CIFOR-INIA (Madrid), I focused on the study of energy crops and the effects on carbon balance, both by direct carbon sequestration and by the substitutive effect caused by the bioenergy potential of biomass and the reduction in use of fossil fuels. We used geostatistical tools to estimate, for the first time, the energetic production potential and reductions in GHG emissions in Spain associated with the use of energy crops, and we developed tools for estimating growth, yield and carbon sequestration in poplar energy crops. Our studies also helped to study the biometry of coppice stands managed in multiple rotations, and demonstrated for the first time that biomass allometry is not influenced by taxonomy.

My second postdoctoral experience was at the Forestry Faculty of the Georg-August-Universität Göttingen (GAUG, Germany), where I joined the Department of Forest Inventory and Remote Sensing as a research associate. The research topics during my stay in Göttingen were large-scale monitoring of carbon stocks in different types of forest and uncertainty analysis. This gave me my first opportunity to act as PI and to develop my own ideas on forest inventory and remote sensing in an international context, conducting research activities in Central and South America, Africa, Asia, Oceania and Europe. The research involved studying trade-offs between environmental services (including carbon sequestration) and economic benefits and social aspects in transition systems in the tropics. During this stage, I also received advanced training in forest inventory and statistical inference.

My current position in Spain (USC, Jan. 2016-present, 3rd and 4th post-doc experience, Juan de la Cierva-Incorporation and Marie-Curie) is focused on the study of biometric relationships in unperturbed forests, with the aim of using these relationships to monitor carbon emissions due to forest degradation at very large scales. I am developing these ideas within the framework of a Research Project for Young Researchers (RETOS) of which I am the PI.

Resumen del Currículum Vitae:

I obtained a BSc (2005) and MSc (2007) in Forestry Engineering at the EPSE-USC, and MSc in Applied Statistics (2012) at UNED. I got my PhD with European Ment. in 2011 (USC), for which I received the Extraordinary Doctorate Award from the EPSE, the Doctorate Award from the Spanish Society of Forest Sciences (2012) and the Outstanding Doctoral Research Award from the International Union of Forest Research Organizations (2014, USA). My PhD was funded by a FPU fellow, and by two grants for short-term European mobility (The Netherlands and Finland), which resulted in two scientific publications in collaboration with the hosts.

I have 87.5 months of postdoctoral experience (37.6 abroad), beginning with a short period at the USC and at CIFOR-INIA. In 2012 I got a Res. Assoc. position at the Forestry Faculty of GAUG (Germany), where I combined my research with lecturing activities. In 2016 I moved to the Agriculture and Forestry Engineering Department of the USC, first with a JdC-I fellowship and since Sept. 2017 with a Marie-Curie (ongoing). Currently I am PI of a research project funded by the Spanish National Plan (RETOS) in the modality for young researchers.

Most of my research career has been self-funded with competitive fellowships (equivalent amount of 0.331M gained), and projects and contracts (0.329M gained as PI). I have participated in 13 research projects (9 int.), being PI of 4 of them (3 int.). I participated in 7 in research contracts (2 int.), being PI in 3 (1 int.). My research has led to significant practical applications, including an innovative industrial project involving improvement of a forest mensuration device (Haglöf, Sweden), the adaptation of the methodologies I developed by the Task Force on National Greenhouse Gas Inventories of IPCC and an international patent. As outreach, I have participated in scientific dissemination and transfer activities with the public in general, undergraduate students and professionals.

My scientific production consists of 31 papers in JCR journals (H-index: 10; 292 citations; 27 Q1; 14 1st / PI author, 14 independent from PhD supervisor), 4 submitted for its possible publication in JCR journals and one in preparation, as well as 7 papers in non-JCR journals. These papers are the result of a very intensive international collaboration with authors working at institutions from 13 different countries. I



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

have written 2 book (1 as PI) and two book chapters. I have made 56 contributions at scientific congresses and conferences, of which 42 are at intern. level (6 as invited speaker), and have participated in the organization of two intern. conferences. I am regular reviewer for 24 JCR journals, and Guest Editor of the Special Issue entitled Monitoring Forest Degradation for Carbon Accounting of the JCR journal Forests. I have led research campaigns in South Africa, Indonesia and Namibia.

I have undertaken lecturing duties since 2010 at three different universities. I acted as Visiting Professor in 2014 at the invitation of the UNJA (Indonesia), and in the same year I was appointed permanent Senior Lecturer (P. Contratado Doctor) at the Forestry Faculty of the University of Stellenbosch, but rejected the offer for family reasons. In 2015 I was deemed qualified by ANECA as Associate Professor (P. Titular Universidad). I have experience in mentoring BSc (9) and MSc (10) student thesis, and I am currently co-supervising two PhD students, one holding a FPU fellowship where I am the co-supervis



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: RUBERT BASSEDAS, JOSEP VICENT
Referencia: RYC2018-024850-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: josep.rubert@uv.es

Título:

Applicability of mass spectrometry and foodomics studies from farm to fork, the fork to biological fluids and new 3D cell line models

Resumen de la Memoria:

In the context of my PhD thesis, I investigated the applicability of advanced analytical tools for mycotoxin analysis in cereal, cereal-based products and biological fluids. In this period, within the context of the Risk assessment of emergent Fusarium toxins project, I was the first in the group of Prof Mañes to evaluate phase I and II metabolites (mycotoxins) in biological fluids, such as urine and human breast milk. I played a central role in this novel project, which initially originated in my thesis, and even today, considerable effort is focused on UV in this research field. Indeed, they are well recognized and cited works. Subsequently, having finished my doctoral thesis, I was contracted as an Assistant Professor at UCT, Prague, Department of Food Analysis and Nutrition. During my postdoctoral stay at UCT, I successfully initiated a research line, food metabolomics, and led projects in Hajslova's group that are now making it possible to provide new solutions to old problems. My contribution was crucial for the success of the overall projects, and resulted in more than eight publications, many of them as a corresponding author. During this period, I began to lead my own project during summer 2014, a contract funded by Generalitat Valenciana. I then worked at the Department of Food Quality and Nutrition, Edmund Mach Foundation, as a Research Scientist. I was actively involved in three JPI-funded projects, Food Biomarkers Alliance (FoodBALL), which aimed to develop clear strategies for food intake and biomarker discovery, HEALTHMARK, which investigated the complex associations between the gut microbiota, tryptophan availability, diet and metabolic health, and ENPADASI. I gained a holistic view of how diet and gut microbiota can prevent disease risks, and at the same time of how metabolomics data can decipher the mechanisms behind homeostasis and disease risks. This has enabled me to make significant contributions and have an important track record, with more than 40 peer-reviewed publications, four book chapters, including 25 first-author contributions. After completion of my current MSCA-IF project, TRIANGLE GA ID 794417, I envision developing a Lab where the integration of organoids, microbial metabolites and gut microbiota will lead to an expansion of knowledge about nutrition and cancer and the prevention of disease by personalized nutrition/medicine.

Resumen del Currículum Vitae:

Dr. Rubert completed his international PhD at the University of Valencia (Spain) in 2012. He has had the privilege of being awarded Outstanding Doctoral Research at University of Valencia (2014) 1st prize of Faculty of Pharmacy. His Doctoral Thesis was successfully defended with twelve international peer-reviewed publications and twenty congress participation. Subsequently, Dr. Rubert started to work at Department of Food Analysis and Nutrition, UCT, from 2012 to 2016. He was involved in research and teaching activities under Prof. Hajslova supervision. Dr. Rubert held the rank of Assistant Professor for 4 years at the University of Chemistry and Technology, Prague. During his Postdoctoral stay at UCT, he successfully initiated a research line, food metabolomics, and led projects in Hajslova's group that now enable to authenticate food. His contribution was crucial for the success of the whole projects. His efforts resulted in ten publications, many of them as a corresponding author, in high profile scientific journals. As an example, a paper in the forefront (Metabolic fingerprinting based on high-resolution tandem mass spectrometry: a reliable tool for wine authentication? Analytical and Bioanalytical Chemistry 27 (2014) 6791-6803). During this period, Dr. Rubert began to lead his own project during summer 2014, a postdoctoral project, contract funded by Generalitat Valenciana (Conselleria d'Educació, Cultura i Esport) VALi+d postdoctoral Young researchers 2014 (grant number APOSTD/2014/120), publishing several papers, among them a collaborative research between UV, IATA-CSIC and UCT (JCA 1514 (2017) 80-87). During one year and a half, Dr. Rubert worked as a Research Scientist at Department of Food Quality and Nutrition, Research and Innovation Centre, Fondazione Edmund Mach (FEM), in the group headed by Prof. Fulvio Mattivi (Metabolomics) and Dr Kieran Tuohy (Nutrigenomics). This period confirmed my holistic view and expertise in nutritional metabolomics approaches, analyzing short-chain fatty acids (ABC 409 (2018) 5555-5567) and publishing a consortia review (MNFR 63(1),1800384). Currently, Dr. Rubert works as an Experienced Researcher Marie Skłodowska Curie Fellow at the Armenise-Harvard Laboratory of Cancer Biology and Genetics - University of Trento - Department CIBIO. MSCA fellowships are among Europe's most competitive and prestigious awards, aimed at supporting the best and most promising scientists. Dr. Rubert is International Editorial Board of Food Additives & Contaminants: Part A, and guest editorial member of Frontiers in Nutrition editing a special issue dedicated to "Nutrition and Metabolomics". This has enabled Dr. Rubert to make significant contributions and have an important track record, with more than 40 peer-reviewed publications, four book chapters, including 25 first-author contributions. He has first-authored 25 peer-reviewed abstracts all of which were presented at national and international meetings. As an example, Dr. Rubert was speaker on the occasion of RAFA 2013 (opening session), RAFA 2015 (food metabolomics session) and invited speaker on WMF2018. He has also written 4 book chapters in major books in Food Chemistry.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: QUEREDA TORRES, JUAN JOSE
Referencia: RYC2018-024985-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: jjquereda@gmail.com

Título:

Animal intracellular pathogens host cell interactions

Resumen de la Memoria:

My research career as veterinarian demonstrates a high level of achievement shown in high impact papers published in D1 international top journals (e.g. PNAS, PLoS Genetics, Cell, MBio, eLIFE). My research interests are animal and public health, infectious diseases, and host-pathogen interactions. Since I was awarded a competitive Ph.D. Fellowship from the Spanish Ministry of Education and Science within the Programme for University Lecturer Formation (FPU), I have been working into veterinary sciences studying the molecular and cellular basis of intracellular infection (3 international stays in the Ph.D.). For my postdoc, I joined the National Centre for Biotechnology (CNB-CSIC) (Madrid) where I worked for 33 months in the Laboratory of Intracellular Bacterial Pathogens. Afterward, I moved to the prestigious Institute Pasteur (Paris) as Expert Research Manager in the Bacteria-Cell Unit, where I worked for 39 months. In 2017 I obtained a Research Professor position at the University Cardenal Herrera-CEU (UCH-CEU) (Valencia) where currently, I am developing an independent research line and establishing an international network of Listeriosis together with the Institute Pasteur and the University of Costa Rica. During my scientific career, I have published 47 scientific articles. The main research line that I developed focuses on the molecular and cellular basis of intracellular infection. The results of this research line have been published in 29 papers: 17 first or last-author high impact factor papers (8D1: PNAS IF: 9.6, Annu Rev Microbiol IF: 9.8, PLoS Genetics IF: 7.5, MBio IF: 6.7, Clin Microbiol Infect IF:5.4; 8Q1), 3 second-author Q1 scientific papers (e.g. Cell IF:28.7 D1) and one patent. During these studies, I discovered the molecular mechanisms used by epidemic *L. monocytogenes* strains to cause outbreaks. I invented novel image-based microscopy assays to study *Listeria* infection. I also identified a new non-coding RNA involved in virulence, as well as new RNA-mediated regulations. I was invited to present these results at the 4th World Congress on Targeting Microbiota (Paris) and the Young Microbiologists Symposium at the John Innes Centre (Norwich). Since 2017, I lead a new research line in the UCH-CEU that did not exist before which focuses on listeriosis. In 2018 I was funded as PI by a competitive 2 year-grant for emergent research groups. I was also invited to participate in 2018 in an international network project, in collaboration with the Technological Institute of Costa Rica and the Institute Pasteur.

In parallel, I worked on various projects on xenograft immunopathogenesis publishing 18 scientific papers. Overall, as candidate I do have a high potential to reach a leading position in science, as demonstrated by a solid international scientific career (47 peer-review scientific publications), 97 communications (Best talk award), 17 competitive projects (8 international, 8 national, 1 regional), 2 European Doctoral theses supervision, 8 corresponding-author papers, 7 R&D contracts with public and private entities, experience in prestigious research centers and multidisciplinary research projects. My current research line is 1) to uncover the cellular nodes that allow *L. monocytogenes* entry and vacuolar rupture and that could be drug suppressed; and 2) to innovate in models of prevention of animal diseases and zoonoses.

Resumen del Currículum Vitae:

Degree in Veterinary Medicine in 2005 at the University of Murcia (UMU), awarded with the National Award for Excellence in Academic Performance. From 2005 to 2009 I was awarded with a competitive Ph.D. Fellowship from the Spanish Ministry of Education and Science (FPU). To perform experimental studies of my Ph.D. I did 3 stays: a 4-month stay at the University of Illinois (Illinois) (2007); a 3-month stay at the Immunology Laboratory of Merial (Lyon) and a 3-week stay at the Agri-Food and Biosciences Institute (Belfast) (2008). I defended my End-of-Degree Project (EDP) in 2008 and my Ph.D. Thesis in porcine intracellular pathogens in 2010 (European mention) which led to 3 first-author scientific articles (1D1, 2Q1). I was Postdoc researcher at the University of Murcia from 2010 to 2011.

From 2011-2014 (33 months) I was Postdoc researcher at the National Centre for Biotechnology (CSIC, Madrid) working with the intracellular pathogen *Listeria monocytogenes*. My research led to 4 first-author publications (1D1, 3Q1) (e.g. PLoS Genetics IF:7.5; Environ Microbiol Rep IF:3.5) and 2 second-author Q1 publications (Front Cell Infect Microbiol IF:3.7; Int J Med Microbiol IF:3.6).

From 2014-2017 (39 months) I worked as Expert Research Manager at the Institut Pasteur (Paris). My research focused on *L. monocytogenes* pathogenesis and led to 7 first-author papers (3 D1, 2 Q1: PNAS IF:9.6, Annu Rev Microbiol IF:9.4, MBio IF:6.9, Appl Environ Microbiol IF:3.8), 1 second-author D1 paper (Cell IF:28.7) and coauthor in other papers in high impact journals (e.g. eLIFE IF: 8.3, D1). In 2016 I attended specialization courses at the Institute Pasteur of Korea.

In 2017 I obtained a Research Professor position at the University Cardenal Herrera-CEU (Valencia) where I am developing as PI an independent research line on epidemic *L. monocytogenes* strains and establishing an international network of Listeriosis together with the Institute Pasteur and the University of Costa Rica. My research group is formed by 4 researchers and is funded by a competitive 2 year-grant. This research line led to the publication of 2 first-author corresponding D1 scientific articles (Clin Microbiol Infect IF:5.4; Vet Res IF:2.9) and 1 D1 paper as corresponding author that is currently under review.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

I have participated in 8 competitive international projects (e.g. Funded by European Research Area NETWORKS, the International Network of the Institut Pasteur, L'Agence National de la Recherche), 8 competitive national research projects and in one competitive research project for emergent groups as PI. I also participated in 7 R&D contracts with public and private entities. 47 scientific publications and 2 chapters of international books. First or second in 21/47 peer-review papers, corresponding author in 8/47 and 33/47 with co-authors from foreign institutions. 25 articles of general interest and 2 chapters of national books. Co-author of 97 communications (76 international). Invited speaker at 3 international symposiums. Supervisor of 2 International Ph.D. Theses. Supervisor of 3 Master Theses and 8 EDP. Scientific Reviewer for several peer-review journals. Invited lecturer in Masters of the Autonomous University of Madrid and the UCM. Teaching activity in the Veterinary Medicine Degree. Accredited with Class C for Laboratory Animal Housing Facilities and by ANECA as Ph.D. Lecturer.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: LARRAINZAR RODRIGUEZ, ESTIBALIZ
Referencia: RYC2018-023867-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: estibaliz.larrainzar@unavarra.es

Título:

Legume-rhizobium symbiosis: drought stress and ethylene

Resumen de la Memoria:

My research focuses on the symbiosis established between legume plants and rhizobium bacteria. Understanding how this symbiosis works and how it is affected by environmental constraints is a first key towards a more sustainable agriculture worldwide.

I have studied this symbiotic relationship from different perspectives:

i) during my PhD, I analyzed the response of legumes to drought stress, mostly *Medicago truncatula*, a model legume closely related to the crop alfalfa. I combined plant physiology, proteomics and metabolomics for the identification of plant and rhizobium nodule components involved in drought responses, carrying out stages in the Max Planck Institute in Potsdam and the University of Angers.

ii) as a postdoc, I worked at the University of California Davis analyzing the early stages of the symbiotic interaction from a more molecular perspective. The main outcome of this stage was the generation of a database of the transcriptional changes occurring in roots hours after the inoculation with rhizobium, which represents the most comprehensive transcriptional study of early symbiosis research to date. We applied RNA-seq techniques and sequenced 144 Illumina libraries, identifying > 10,000 genes, a significant fraction of which are novel symbiosis-related genes. The beauty of the work resides not only on the fact that it highlighted numerous candidates for further characterization, but on the availability of a website to query the set of genes of interest of researchers so that it serves as a tool for the symbiosis community.

Back in Spain, I have continued with this dual focus on drought stress as well as working on the novel candidates identified in the RNA-seq work, some of which we found related to ethylene responses. This finding is particularly relevant since, although ethylene is a well-known inhibitor of nodulation, our work was the first to show that there is actually a burst of ethylene production upon inoculation. This apparent contradiction opens up new venues to explain how an inhibitor of nodulation can be synthesized at this crucial stage of the interaction. For this ethylene-oriented line I have obtained funding as principal investigator (PI), supervised Master students and I am currently drafting manuscripts to publish some of the results obtained. I am also collaborating in the characterization of several candidates with groups in Spain, USA, France and Australia. Regarding the drought stress line, among other topics, I have analyzed the effects of antioxidants such as ascorbic acid in mitigating the effects of water deficit in legumes. Within this line, I have co-supervised one PhD student and part of the results of her dissertation have been published having me as a senior and co-corresponding author.

Resumen del Currículum Vitae:

As an Agricultural Engineer (Extraordinary award, 2003), I entered the research career during an MSc Biotechnology at the University of Wageningen (graduated with distinction). After research stages at the University College Cork and the Polytechnic University of Madrid, I started my PhD at the Public University of Navarra (UPNA) in 2005 funded by a FPU fellowship. I did several predoctoral stays at the Max Planck Institute in Potsdam and the University of Angers. I defended my PhD thesis in 2009 (European Mention, Extraordinary PhD award).

I obtained a Fulbright/MEC postdoctoral fellowship to work at the University of California, Davis and, subsequently, a Marie Curie OIF to continue my research at this institution (33 months). In 2014 I started a Juan de la Cierva fellowship at the UPNA where I have initiated my independent research line as a principal investigator (PI) with a dual focus on drought responses and the effect of ethylene in the legume-rhizobium symbiosis.

I have participated in 5 international projects: 3 European projects (including the Marie Curie IOF as a PI, 245.000 €), one National Science Foundation grant (500,000 USD) and one USA-Korea grant (450,000 USD); 5 national research projects (Spanish Ministry) and 5 regional projects (3 as a PI). Due to contract length restrictions, I could not apply to JIN calls. I have been the first candidate in the reserve list of RYC in the last 2 years.

In terms of scientific production I have always given priority to quality vs. quantity. I have contributed to 23 JCR articles: 20 (87%) in the Q1 of Agronomy, Plant Science or Microbiology, 14 of them (60%) in the D1. I am first and/or corresponding author in 11. I have published 8 book chapters (3 in Springer, last and corresponding author in one). According to WoS, my contributions have received 620 citations (excluding self-citations) in 514 papers (h-index 13). One of the works has been considered a highly cited paper (Essential Science Indicators), one has been highlighted by F1000 and 2 have been selected as cover issues. I have contributed to 2 patents. I have been



MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

invited for a keynote in an International congress and participated in international (11 oral, 22 posters) and national conferences (10 oral, 6 posters).

I received the accreditation as Assistant, Associate and Private University Professor from ANECA. I teach in several degrees at the School of Agronomy since 2014, receiving positive student evaluations. I received the recognition for researchers from the Agricultural Engineering Association. I have co-supervised one PhD student (International Mention), plus 2 more PhD theses currently ongoing, as well as the work of 2 postdocs, 4 MSc students (2 as single director) and 4 research assistants hired under my own funding. I participate in scientific divulgation activities at the school and graduate levels and have appeared in several public dissemination articles.

I serve as an evaluator for H2020 RIA calls and I am included in the list of ANEP experts. I have participated in 5 PhD, 3 MSc and 3 Graduate evaluation committees. I have evaluated proposals for the Governments of Argentina, Uruguay and Latvia. I am Reviewer Editor for Frontiers in Plant Science (Plant Proteomics) and regularly review for 16 SCI journals, e.g. New Phytologist, Plant Physiology, Plant Cell Environ and JXB.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: EGEA SANCHEZ, ISABEL
Referencia: RYC2018-023956-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: iegea@cebas.csic.es

Título:

Agronomic importance of the balance of abiotic stress response, production and fruit quality in tomato

Resumen de la Memoria:

I fulfilled my predoctoral period (2001-2006) between the University of Murcia and CEBAS-CSIC, in the research line Influence of preharvest and postharvest factors on fruit ripening and quality . During this period, I was awarded with two competitive national grants (FPU and I3P postgraduate), obtaining my PhD degree in 2006 with the highest qualification. Thanks to the acquired expertise in this research line, I was hired in 2007 by Fertiberia S.A. through a competitive national "Torres Quevedo" programme to lead the research project Designing new fertirrigation products that improve organoleptic and nutritional properties of horticultural species of interest .

In 2008, I obtained a competitive fellowship (Seneca Foundation) for a postdoctoral position at the GBF laboratory (INRA/INPENSAT, France), where I decisively contributed to the first Proteomic study of the transition chloroplast-chromoplast during tomato ripening elucidating the key role of chromoplast differentiation in fruit ripening and quality, an issue not well understood until that moment. Results were published in 4 high-impact journals within the Plant Science category.

In 2010 I obtained a contract from the Saavedra Fajardo programme (Seneca Foundation) to join Abiotic Stress, Production and Quality group of CEBAS-CSIC, and later in 2011 a competitive JAE-DOC contract (CSIC). Within this group I started a research line focused on the Identification of genes and key mechanisms involved in abiotic stress tolerance in tomato , participating in a KBBE international project and obtaining funding, as PI, from the programme Young Leaders in Research (Seneca Foundation). For the development of this research line I have collaborated with the University of Almeria and IBMCP. Up to date I have identified some key genes and response mechanisms crucial for the plant development under salt and drought stress conditions. My findings are very important to agriculture as these stresses are responsible for important yield losses in crops, among them tomato. Currently, I have extended the aim of my research towards the Interaction between abiotic stress and fruit quality , integrating the knowledge and experience achieved through my research career and setting up collaborations with University of Murcia and University of São Paulo.

In sum, I have got 34 articles SCI-indexed (26 Q1), 8 articles non SCI-indexed, 15 conference proceedings, 5 book chapters, 1 book and 58 communications to international and national conferences. My publications have been cited in total 975 times (h-index of 16). My scientific production, and the fact to have been PI of a project and the supervisor of 2 PhD thesis, 2 MSc thesis and 3 BSc thesis, supports my ability to successfully lead a research line.

Finally, I would like to highlight the increase of the scientific quality of my publications in the last period of my career (2016-2018), having published since 2016 seven papers with relevant authorship in prestigious journals within Q1 of Plant Science, such Plant Biotechnol J (IF: 7.443), Plant Physiol (IF: 6.456), Plant J (5.775) and Env Exp Bot J (IF: 4.639) among others, being the average IF of my publications in this last period 5.35. I do really hope that these merits makes me worthy of a RyC contract since this is the last call to which I can apply due to the date I obtained my PhD degree

Resumen del Currículum Vitae:

Academic achievements:

- 1) BSc degree in Food Sciences and Technology (1994-2000). Premio Extraordinario de Licenciatura and 2º Premio Nacional Fin de Carrera de Educación Universitaria.
- 2) MSc degree in Food Sciences and Technology (Feb 2002). Honour mention.
- 3) PhD degree in Food Science and Technology (Jun 2006). Cum Laude.

Professional experience:

- 1) Collaboration Grant (Spanish MECD) working at the University of Murcia (1999-2000).
- 2) FPU Grant (Spanish MECD) working at University of Murcia and CEBAS-CSIC (2001-2004).
- 3) I3P Post-graduate Grant (CSIC) working at CEBAS-CSIC (2005-2006).
- 4) Postdoctoral Torres Quevedo contract (Spanish MECD) working at R&D department of the company Fertiberia S.A. (2007-2008).
- 5) Postdoctoral fellowship (Seneca Foundation) working at INRA/INP-ENSAT Research Unit (UMR990) Toulouse, France (2008-2011).
- 6) Postdoctoral Saavedra Fajardo contract (Seneca Foundation) working at Abiotic stress, Production and Quality research group (CEBAS) (2011-2012).



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

- 7) Postdoctoral JAE-DOC contract (CSIC) working at Abiotic stress, Production and Quality research group (CEBAS) (2012-2014).
- 8) Postdoctoral contract supported with National R&D project (Spanish MICINN) working at Abiotic stress, Production and Quality research group (CEBAS) (2014-2018).
- 9) Postdoctoral contract supported with R&D project from the Regional Program of Rural Development (CAAGP-FEADER) working at Abiotic stress, Production and Quality research group (CEBAS) (2018-2019).

Scientific Activity:

- 1) Participation in Research Projects: 1 Profit project, 7 National R&D Plan projects, 2 Regional projects, 1 Plant KBBE, 1 project from the research programme Research Groups of Scientific Excellence.
- 2) Principal investigator: 1 project from the research programme Young Leaders in Research (Seneca Foundation).
- 3) Participation in 3 R&D contract: Rohm and Haas (Italy), Fertiberia S.A and CEBAS-CSIC

Scientific Production:

34 articles SCI-indexed (26 Q1), 8 articles non SCI-indexed, 15 conference proceedings, 5 book chapters, 1 book and 58 communications to international and national conferences. My publications have been cited in total 975 times (h-index of 16). I would like to highlight the high quality scientific production in the last period of my scientific career, having published since 2016 7 papers with relevant authorship in high-impact journals within Q1 of Plant Science, with an average IF higher than 5.35.

Capacity to lead an independent research: PI of a research project from the programme Young Leaders in Research, and Supervisor of 3 BSc Thesis, 2 MSc Thesis and 2 PhD Thesis.

Teaching Task: Teacher of 3 subject of BSc degree in Food Sciences and Technology UM (2002-2004), 1 subject in MSc degree in Biotechnology and Biology of Plant Stress at UM (2015-2017) and 1 seminar in MSc degree in Research and Agrobiotechnology at UJI, Castellón (2015). 153 hours in total.

Transfer technology activity with the companies Rohm and Haas, Fertiberia, J. Garcia Carrion; D.O.C. Ribera del Duero and Fresón de Palos Agriculture Cooperative.

Other merits: Reviewer of SCI journals, member of the of the organizing committee in the XIIIth Symposium on apricot breeding and culture , member of editor board of Journal of Agroecology (ISSN:1887-1941) and member of the court of the PhD thesis of Marta Renato (2015).



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: TRUCHADO GAMBAO, PILAR
Referencia: RYC2018-025510-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: ptruchado@cebas.csic.es

Título:

Quality and Microbial Safety of Fresh Produce

Resumen de la Memoria:

Dr Pilar Truchado was awarded a bachelor and a PhD in Food Technology at the University of Murcia. During pre-doctoral period, she has been involved in the study of phenolic phytochemicals on food quality and bioactivity of vegetable foods including the search of plant extracts with antimicrobial and anti-Quorum Sensing activities. She completed her research skills in the use of high-throughput identification and quantification techniques (UPLC-ESI-QTOF-MS and UPLC-MS QQQ) at the VTT T in Finland. She also obtained a postdoctoral fellowship from the Spanish Government and spent 25 months at the LABMET at Ghent University in Belgium where she was introduced in field of metagenomics and microbiota. In 2014, she got a STCM-COST Action FA1202 for a stay at AIT (Wien) where she got the opportunity of improving her skills in bioinformatics. In total, she has completed 34-months of postdoctoral experience in top-class international institutions. Since her reincorporation at CEBAS, her research trajectory is development in the area of Quality and Microbial Safety of Fresh Produce from a multidisciplinary approach, which includes microbial risk assessment, microbial metagenomics and metabolomics. Her main interests relate to the evaluation of the impact of pre and postharvest practices on fresh produce safety and particularly the impact of these practices on the epiphytic microbiota and its potential consequences in the contamination of fresh produce with human pathogens. Particularly, she will evaluate the role that the change in the dynamic microbial community of fruits and vegetables plays in the contamination, colonization and survival of foodborne pathogens. This research line gives her the opportunity of leading innovate research in the diversity of microbiome of fruits and vegetables and also, on the relationship between different pre and post-harvest factors in the physiological state of enteric human pathogens and how the physiological state of the bacteria determines their capacity for colonization and survival in water, soil and plant. Additionally, she is searching for alternative biomarkers that could be correlated with the potential presence of fecal contamination in different matrix including soil, water and plants.

Her research topics, including:

- 1) Relationship between the plant microbiome and enteric human pathogens on fresh produce. To determine the role played by the plant microbiota in the colonization and survival of enteric pathogenic bacteria in fresh produce.
- 2) Significance of the bacteria physiological state on the inactivation/survival of foodborne pathogens subjected to different antimicrobial treatments. To elucidate the effect of disinfection technologies to improve the microbial quality of water that get in contact with the edible part of the fruits and vegetables, have in the induction of VBNC state of foodborne pathogens and their survival and resuscitation in fresh produce.
- 3) The search of microbial indicators (bacteria, bacteriophages and viruses) of fecal contamination. To search new biomarkers that could be correlated with the potential presence of enteric human pathogens.
- 4) Antimicrobial and anti-Quorum Sensing compounds obtained from plants extracts: To search for novel antimicrobial and anti-quorum sensing compounds obtained from plants

Resumen del Currículum Vitae:

She got her PhD in Food Science and Technology from the University of Murcia in 2010, obtaining the highest score (Sobresaliente Cum laude for unanimity). Her postdoctoral stage started with a research contract at VTT in Helsinki and continued with a competitive postdoctoral fellowship funded by the Spanish Government in the LABMET at the Ghent University. She completed her postdoctoral stage with a STSM from COST FA1202 at the AIT (Wien). She accumulated more than 34 months of postdoctoral experiences in top high international research institutions which enable the acquisition of new and highly relevant knowledge on metagenomics that together with her multidisciplinary background in microbiology and metagenomics represented the pillars for the development of her new research line at the CEBAS. She re-joined the CEBAS with a postdoctoral contract in 2014. Few months later, she achieved a Juan de la Cierva-Incorporación contract. Currently, she has a FC3 postdoctoral research contract. In total, she has completed 34-months of postdoctoral. Her research activities have resulted in 47 peer-reviewed papers, among which, 37 research papers published in SCI-indexed scientific journals, 1 research papers submitted to SCI-indexed scientific journals, 2 Acta Horticulturae and 8 book chapters in renowned international publishers (2 Elsevier, SEM, Springer, RDC Press, World Scientific, Nova Science Publishers and Burleigh Dodds Science Publishing Limited). A high ratio of SCI articles, 88%, have been published in top-ranked journals from the first quartile and 53 % in the first decile of the scientific areas of Food Science, Analytical Chemistry, Microbiology, and Water Source, with a privileged position of authorship in 77% of the publications (first or second author) and as corresponding author in several of them (17%). Her H-index is 17, accounting for over 895 citations. She has 26 contributions in international and national conferences and meetings, including 4 as invited speaker and noting that 25 of them were in international congresses. She has participated as part of the research team in a total of 14



MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

competitive projects from different funds: 4 international, 2 European, 5 national and 2 regional. Currently, she is CO-PI of 1 international competitive project. Additionally she has actively participated in activities of knowledge transfer with private contract which lead to 17 research contracts. It is important to highlight that she is the PI in one of these research contracts and co-PI of two of them. These projects provide her the opportunity to acquire outstanding scientific background as well as to improve her expertise in project management, independent thinking and leadership skills as main researcher. During the last 5 years, she has built international collaborations and she is currently a member of two COST (FA1403 and CA16110). She has participated as part of the organizing committee of international congress and workshops and in different dissemination activities in the CEBAS (6). Her teaching experience included about 1350 h training students from Murcia University and as teacher in the Master's Degree of Nutrition and Food Security from UCAM. She has supervised one final master project and one final degree project, and currently she is supervising one master student, one bachelor's degree student and one innovate teaching project. She is contributing with numerous high impact JCR journals as reviewer



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: ALVAREZ PEREZ, SERGIO
Referencia: RYC2018-023847-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: sergio.alvarezperez@kuleuven.be

Título:

Animal-pathogenic fungi: diversity, molecular epidemiology and antifungal resistance

Resumen de la Memoria:

My main research line deals with the study of animal pathogenic fungi, with a particular focus on the detection and characterization of antifungal-resistant strains of filamentous fungi (mostly from the genus *Aspergillus*) and yeasts (e.g. *Malassezia pachydermatis* and *Candida* spp.) Additionally, I also have ample experience in the study of other host-associated microbes, applied phylogenetics and fungal and bacterial taxonomy. The other microbial systems that I have studied so far include: i) *Clostridioides difficile* (formerly *Clostridium difficile*) and *Clostridium perfringens*, as examples of emerging anaerobes involved in animal pathology and frequently displaying multidrug resistance; ii) the yeasts and bacteria that inhabit the floral nectar of angiosperms (i.e. flowering plants) and can interfere with the interactions established between plants and their animal pollinators; and iii) some species and genotypes of *Agrobacterium* which cause 'hairy root' disease in diverse crop plants. My contribution to the study of these microbial systems has involved a huge variety of methods, ranging from traditional microbiological procedures for culturing and phenotypic profiling of isolates to modern, high-throughput techniques for genomic and phenomic analysis. Beyond my prolific research activity, I have acquired valuable teaching and mentoring experience through collaboration in the organization of different lab courses, supervision of undergraduate and graduate students and participation in pedagogical training programs and some educational innovation projects. Finally, I have a track record of publications in professional journals, participation in workshops aimed to the general public, and other forms of science outreach. My final goal as scientist and educator is to promote understanding of microbiology in a comprehensive and interdisciplinary way.

Resumen del Currículum Vitae:

EDUCATION: BSc in Biology (2005, University of Alcalá, Outstanding Graduate Award); BSc in Environmental Sciences (2009, UNED, Outstanding Graduate Award). PhD, Complutense University of Madrid (UCM, 2010, Summa cum laude).

APPOINTMENTS: Predoctoral fellow at UCM (2006-2010); Postdoctoral fellow at Doñana Biological Station-CSIC (2010-2012), Gregorio Marañón Health Research Institute (2012-2013), UCM (2014-2017) and KU Leuven (KUL, Belgium, 2017-present).

SHORT RESEARCH STAYS: Health Canada (Canada, 3 months, 2007), KU Leuven (Belgium, 3 months, 2015), Stanford University (USA, 1.5 months, 2018)

FELLOWSHIPS AND GRANTS:

2017: Marie Skłodowska-Curie Individual Fellowship
2015: Science Teaching Fellowship, American Society for Microbiology
2015: FEMS-ESCMID joint research fellowship
2014: Juan de la Cierva postdoctoral fellowship
2013: Sara Borrell postdoctoral fellowship
2012: Juan de la Cierva post-doctoral fellowship (declined)
2007: Travel grant, FPU program
2006: FPU predoctoral fellowship
2003: SICUE/Séneca fellowship, University of Málaga

R&D&I PROJECTS: Principal Investigator of a Marie Skłodowska-Curie Action. Participation in 7 projects (6 national, 1 international) funded by public agencies and 2 projects funded by companies.

PUBLICATIONS: 44 papers in peer-reviewed journals; first or co-first author: 77.3%; 1st quartile: 50%; 1st decile: 29.5%; with international collaborators: 34.1%. No. citations = 529/590/797 (WoS/Scopus/Google Scholar), h-index = 13/14/15.

CONFERENCES: Member of the organizing committee of 1 national conference. Participation in international meetings: 1 invited talk and 30 communications (6 oral, 24 posters). National meetings: 1 invited talk, 20 communications (12 oral and 8 posters) and 1 round table.

TEACHING AND MENTORING:

- ANECA accreditations: Assistant Lecturer (2010), Lecturer and Private University Lecturer (2013)



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

- Teaching of undergraduate courses (at UCM): Microbiology (2008-2010), Microbiology and Immunology (2013-2016), Vaccines in Animal Medicine (2007-2010 and 2012-2013)
- Teaching in master programs (at KUL): Environmental quality and legislation (2018-2019)
- Supervision of 1 Bachelor and 3 Master Theses
- Supervision of 7 undergraduate projects presented at scientific meetings for students
- Contribution to 2 educational innovation projects

SERVICE: eLife Early-Career Ambassador (2018). Associate Editor of BMC Microbiology. Member of the Editorial Board of Fungal Biology and Biotechnology. Reviewer of grant proposals for FONCyT (Argentina). Reviewer of manuscripts for 20 peer-reviewed journals and abstracts for international conferences (ASM Microbe).

OUTREACH: Third prize winner in the 7th Complutense University's Contest of Science Outreach (opinion article category). 12 outreach publications in professional journals (11 in Spain, 1 in Portugal). Contribution to 3 workshops for the general public.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: MARTI RUIZ, M^o CARMEN
Referencia: RYC2018-025788-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: mamen.marti@gmail.com

Título:

The relationship between circadian rhythms and signalling molecules involved in stress signalling

Resumen de la Memoria:

I obtained my degree in Chemical Science in 2001 (Murcia University). After my degree, I obtained an I3P contract and I was in charge of the X-Ray diffraction service at ICTP-CSIC (Madrid, 2001-2003). I did my PhD as part of the Prof. F. Sevilla's group at CEBAS-CSIC (Murcia, 2004-2010). As a PhD student, I got involved in different areas of research, mainly focused on fruit ripening and the identification and characterization of new plants antioxidant systems and their response under abiotic stress. As the main outcome of my PhD, I reported the presence of a Trx isoform (PsTrxo1) in pea (*Pisum sativum*) mitochondria and nuclei that belongs to the Trx o group (Martí et al., 2009, Plant Physiology). Additionally, I showed that it was able to activate alternative oxidase and interact with a number of mitochondrial proteins, including peroxiredoxin and enzymes mainly involved in the photorespiratory process. I also identified a role for PsTrxo1 as a component of the defence system induced by NaCl in pea mitochondria, providing the cell with a mechanism by which it can respond to changing environment, protecting mitochondria from oxidative stress (Martí et al., 2011, J. Exp. Bot).

I had my first postdoc position at the Circadian Signal Transduction Group (Prof. Webb, Plant Sciences Department, Cambridge University, UK, 2011-2015). During this time, I hold a Marie Curie Intra-European Fellowship (2 years) and I was awarded a research grant funded by the Brooks Fund and the Newton Trust (University of Cambridge, UK) (1 year). In May 2015, I was awarded my own research grant (Broodbank Fellowship, University of Cambridge, 3 years) and I was associated to the Plant Sciences Department (University of Cambridge) as an independent researcher. During this period, my research was focused on the interface between calcium and circadian signalling networks. As part of my postdoctoral research lines, one of the achievements that I would like to highlight is the contribution that I have made to the field of calcium signaling in response to stress. I made considerable advance in deconvoluting the nature of stimulus-specific Ca²⁺ signals and provided cell-type level analysis (Martí et al., 2013, Plant Physiology). In that sense, I identified both stimulus- and cell-type specific Ca²⁺ signals in leaf cells of Arabidopsis with distinct dynamics and properties. Additionally, I have also made an important breakthrough. I have demonstrated that circadian oscillations of cytosolic free Ca²⁺ ([Ca²⁺]_{cyt}) form part of the timing mechanism to regulate circadian period in Arabidopsis and I have also provided a pathway to close the loop by identifying targets in the circadian oscillator that are regulated by [Ca²⁺]_{cyt} (Martí et al., 2018, Nature Plants). This work provides a paradigm shift in circadian biology and adds a new dimension to the theory of how organisms measure time.

Since June 2018, I hold a Saavedra Fajardo research fellowship (Fundación Séneca, Murcia) to carry out my own research project within the group of Prof. F. Sevilla (CEBAS-CSIC, Murcia) and in collaboration with Prof. Webb (Cambridge University). This project studies the relationship between circadian rhythms and signalling molecules involved in stress signalling, an emerging research area which I would like to continue under the Ramón y Cajal program.

Resumen del Currículum Vitae:

I obtained my degree in Chemical Science in 2001 (Murcia University), including a collaboration period at the Analytical Chemistry department (3 years). After my degree, I obtained an I3P contract and I was in charge of the X-Ray diffraction service at ICTP-CSIC (Madrid, 2001-2003). I did my PhD as part of the Prof. F. Sevilla's group at CEBAS-CSIC (Murcia, 2004-2010). During my predoctoral period I worked as a Titulado Medio de Investigación y Laboratorio (16 months), I was awarded a research fellowship (3 years, Fund. Séneca, Agencia de Ciencia y Tecnología, Región de Murcia) and finally from 2008 (28 months) I was hired as a Titulado Superior (Financial Aid to Groups and Units of Scientific Excellence, Region of Murcia, Fund. Séneca). As a predoctoral student I got involved in different areas of research mainly focused on fruit ripening and the identification and characterization of new plants antioxidant systems and their response under abiotic stress.

I had my first postdoc position at the Circadian Signal Transduction Group (Prof. Webb, Plant Sciences Department, Cambridge University, UK, 2011-2015). During this time, I hold a Marie Curie Intra-European Fellowship (2 years) and I was awarded a research grant funded by the Brooks Fund and the Newton Trust (University of Cambridge, UK) (1 year). During this period, I had the opportunity to complement my existing training in stress biology with the tools and techniques of the Webb laboratory. My research line was focus on the interface between calcium and circadian signalling networks.

In May 2015 I was awarded my own research grant (Broodbank Fellowship, Cambridge University, 3 years) and I was associated to the Plant Sciences Department (Cambridge University) as an independent researcher. This position allowed me to reach professional maturity



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

as an independent group leader and to consolidate the research lines carried out during my postdoctoral period.

Since June 2018 I hold a Saavedra Fajardo research fellowship (Fund. Séneca, Murcia) to carry out my own research project within the group of Prof. F. Sevilla (CEBAS-CSIC, Murcia) and in collaboration with Prof. Webb (Cambridge University). This project and the ones carried out during my stay in Cambridge have allowed me to move forward in the study of the relationship between circadian rhythms and signalling molecules involved in stress signalling and also to implement this emerging research area within my current group.

I have published 21 papers in peer reviewed journals such as Nature Plants, Plant Physiol., J. Exp. Bot. and J. Hazard. Mat. (9 first author and 7 second author) and I have also co-authored 2 book chapters. 11 and 18 out of these 21 papers are in journals ranked within the first decile and the first quartile, respectively of its area. My current h-index is 13. I am a regular referee in peer-reviewed journals such as New Phytol., Plant Physiol., BMC Plant Biol. and Front. Plant Sci. My work has been selected for talks in up to 4 international and national conferences. I have also presented multiple posters in more than 21 conferences. I have presented my work to the public within the program Science of Sundays at the Cambridge University Botanic Garden. I have been actively involved in teaching by formally supervising students and demonstrating several academics years at the Cambridge University.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: PLAZA BONILLA, DANIEL
Referencia: RYC2018-024536-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: daniel.plaza@pvcf.udl.cat

Título:

Design and assessment of climate-smart cropping systems based on sustainable intensification

Resumen de la Memoria:

My research activities focus on the improvement of temperate cropping systems for a sustainable use of natural resources. I am particularly interested in the design and assessment of innovative climate-smart cropping system alternatives based on lower environmental impact, and adequate productivity.

I started my scientific career studying soil organic C (SOC) sequestration mechanisms during my Agricultural Engineering dissertation thesis (one SCI publication). I further developed the topic during my PhD thesis (2009-2013, FPU fellowship, Extraordinary Award) (UdL, Spain) by identifying the most sustainable tillage and N fertilization practices to mitigate the emission of soil greenhouse gases and enhance SOC sequestration in rainfed Mediterranean areas. I was involved early in international research with undergraduate (2008) and predoctoral (2013) stages of 2.5 and 4-months in the Colorado State University, USA, under the supervision of Dr. Neil C. Hansen and Keith H. Paustian. The supervision of three end of degree thesis provided me skills on coaching, analysis and new ideas and perspectives. The results of my undergraduate and thesis periods were reflected on 9 SCI publications as first author, provide feasible tillage and N fertilization strategies to (i) reduce the amount of GHG emitted per unit of product, and (ii) maximize soil C protection within aggregates in rainfed Mediterranean agroecosystems.

I devoted my postdoctoral research in INRA (Toulouse, France) advised by Dr. Éric Justes to the design and assessment of innovative low-input cropping systems in temperate areas, which enlarged significantly my methodological skills, knowledge on agronomy and made me become experienced on the application of soil-crop models. During my research in France I demonstrated that cropping systems need to be completely re-designed to be sustainable without losing productivity. My work in France resulted on several SCI publications, 4 of them as first author without the participation of my PhD advisors, and the supervision of an MSc thesis. Thanks to the early impact of my research career I was awarded two competitive Juan de la Cierva grants (Formación and Incorporación modalities). In the framework of the first I joined the EEAD-CSIC (Zaragoza, Spain) (2016 - 2018) where I broadened my agronomic focus to irrigated cropping systems. During that period I developed the soil-crop modelling skills acquired in INRA to Mediterranean conditions. Afterwards, I joined the UdL (April 2018 - to date) in the framework of the 2nd Juan de la Cierva grant received where I am advising a PhD student (expected date of defense: spring 2019) and different end of degree thesis, participating in two research projects and contracts with enterprises.

Currently, I am actively enlarging my scientific activities by participating as Spanish partner PI in EU proposals. One of these proposals, in the framework of the ERA-NET Cofund on Sustainable Crop Production was recently recommended for funding, and will provide 150k to the partner I lead, comprising a PhD student. The project aims at increasing productivity and sustainability of European plant protein production by closing the grain legume yield gap. Activities will begin in April 2019.

Resumen del Currículum Vitae:

Daniel Plaza-Bonilla is Juan de la Cierva-Incorporación fellow (April 2018-to date) in the University of Lleida (1st out of 74 candidates). Has published 27 scientific JCR-indexed papers (22 of them classified as Q1), being first author in 17 of them. Categories of Agronomy, Soil Sciences and Environmental Sciences. Has an H-index of 15. Has participated in 5 international and 6 national research projects as well as contracts with private enterprises and EU Tenders. He will be PI of the Spanish partner (UdL) in the EU project Legume-GAP (funded by the ERA-NET SUSCROP call) which has been evaluated positively for being funded (150 K , Spanish partner).

Numerous works presented in national and international scientific congresses, six of which as oral communications. Has advised several students (Master of thesis and end of degree thesis) in Spain (6) and France (1). Is co-advisor of a PhD student that will defend her thesis during the first semester of 2019 (Evangeline Pareja-Sánchez, UdL). Has published 2 scientific book chapters and different dissemination articles addressed to agricultural producers, advisors and policymakers. Has participated in multiple technology transfer and dissemination activities at the regional and national level.

His previous national and international postdoctoral research experience comprises a Juan de la Cierva-Formación fellowship (3rd out of 71 candidates) developed in the Aula Dei Experimental Station (EEAD-CSIC) during 2 years (2016 to 2018) supervised by Dr. Jorge Álvaro-Fuentes and a postdoctoral position in INRA (Toulouse, France) during 2 years (2014-2016) under the supervision of Dr. Éric Justes, funded by the LEGITIMES and Leg-N-GES international projects.

He is member of the Editorial Committee of Geoderma (Q1 Soil Science) and Associated Editor of Journal of Environmental Quality (Q2



MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Environmental Sciences). He is active Evaluator for different International (Biodiversa, European Union, ERA-NET; FONCyT, Argentinian national research plan) and National calls (Plan Nacional, Agencia Estatal de Investigación). He is a highly active reviewer for several scientific JCR-indexed journals (Publons profile: publons.com/a/1252153/) (more than 100 reviews in the last 5 years). He has recently been recognized as Lecturer by AQU (Catalan Agency for the University System Quality).

Agricultural Engineer by the Universitat de Lleida (UdL), he obtained a PhD in Agronomy (Excelente cum Laude, UdL, 2013) being highlighted with an Extraordinary Award. During the predoctoral period he was funded by the MEC with a FPU grant. He carried out degree and predoctoral stages in the Soil and Crop Sciences Department and the Natural Resources Ecology Laboratory, respectively, of the Colorado State University (USA) (7 months in total). He worked as a collaborator professor during 5 years in an Agricultural School (Escuela de Capacitación Agraria, Les Borges Blanques, Lleida).



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: MEDINA PRADAS, EDUARDO
Referencia: RYC2018-024752-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: emedina@ig.csic.es

Título:

Biochemistry and microbiology of fermented vegetables and olive products

Resumen de la Memoria:

Eduardo Medina has developed his research career primarily in the Department of Food Biotechnology at Instituto de la Grasa (IG-CSIC) since 2004, when he got a FPI fellowship to carry out his PhD studies as a member of the Natural Antimicrobials research team under the supervision of Dr. Manuel Brenes and Dr. Antonio de Castro. The study of phenolic compounds in olives products, their antimicrobial activity against foodborne pathogenic bacteria and their role in the olive fermentation have been the principal aims of his research in the field of Food Science and Technology with a great impact in the agro-food sector. He has also stayed for 8 months at IFAPA Las Torres-Tomejil (Sevilla) in the area of plant protection expanding his knowledge on phytopathogenic bacteria and fungi.

In 2012, the candidate began his postdoctoral period in the Food, Bioprocessing and Nutrition Sciences Department at NCSU, an international centre with a high prestige in the group of Dr. Fred Breidt, thanks to a postdoctoral grant by MEC. He continued his research in the field of fermented vegetable, especially in cucumbers, kimchi and yacon under a molecular approach. It was the first time that high-throughput sequencing techniques for metagenomic studies was performed in these products to understand both the fermentation and the spoilage by microorganisms. In 2014, Dr. Medina came back to IG-CSIC with a competitive contract as a member of Lactic Acid Bacteria-Yeast Interactions in Foods research team, and continued his research focused in molecular biology and its application in the study of microbial ecology focused in the safety of different olives products. Currently, Dr. Medina is developing his research about the characterization of bioactive compounds and their biological properties in derived olive product as a member of the Chemistry and Technology of table olives research group.

In summary, the main topics of his research line has mainly been performed on the biochemistry and microbiology of fermented vegetables and olive products, and it can be split into different sub-lines: i) Identification of antimicrobial compounds, ii) Natural antimicrobial compounds and their uses in food, agriculture and health, iii) Microbial ecology of vegetable fermentations, iv) Food safety, v) Characterization of bioactive compound and endogenous enzymes in olive products.

His scientific training has led to a wide knowledge and experience in the biochemistry and microbiology of fermented vegetables and olive products. He has dealt with numerous and different food matrices. The candidate has demonstrated his proficiency to acquire new knowledge and skills throughout along his career. He has acquired expertise in microbiology skills (molecular, metagenomic, proteomic, challenge tests, susceptibility to antimicrobials, foodborne pathogens, etc.), mycology (bio-pesticide and fertilizer assays), and biochemistry (GC-MS, HPLC, RMN and others laboratory techniques). This inter-disciplinary background provides him outstanding versatility that will be essential to success in attracting funds from competitive calls and to create his own research group in a near future.

Resumen del Currículum Vitae:

Eduardo Medina completed his BSc in Biochemistry in 2003 at US. He started his research career at IG-CSIC in 2004. He obtained the MSc in 2007 and PhD in 2008 at US (funded by FPI grant). In 2009, the candidate conducted a stay at IFAPA Las Torres-Tomejil (8 months). In 2012, he got a postdoctoral fellowship (MEC) at NCSU for 2 years. The candidate returned to IG-CSIC with a competitive contract (2 years) and currently continues his research career at this centre.

The research activities have resulted in 75 scientific documents distributed as follows: 44 published articles (4 more under review), 9 book chapters, 2 dissemination article, 1 editorial article and 19 scientific documents related to technology transfer. The candidate has an h-index of 15 with 778 total cites according to Scopus database. A high ratio of 68 % (30) of SCI articles was published in the Q1 of Food Science and Technology Area, 30 % (13) in Q2 and 2 % (1) in the Q4. The candidate has a privileged position of authorship in 81% of all the publications: first author (26), corresponding author (8) and second author (12). He has participated in 33 communications in congresses, (29 international, 4 national) with 7 oral communications (3 invited speaker).

The candidate has participated in 20 research projects: 11 projects funded by competitive calls: 2 European (1 as PI), 7 national and 2 regional; and 9 projects funded by private entities, 3 international (2 as PI) and 6 national (2 as PI). The candidate has obtained a total funding of 462.979 as PI. The candidate is co-inventor of 3 patents: 1 registered and 2 licensed (1 exploited); and 1 licensed industrial trade secret exploited by TAFIQs in FOODs a spin-off of CSIC and UCO in which the candidate is a founding member.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Eduardo Medina has directed 2 Doctoral Thesis and is currently co-directing an international Doctoral Thesis with University Mouloud. He has tutored 3 short stays of PhD students in the international mobility program. He has mentored 5 university students, 2 from Erasmus program and 4 students under the Internship Program at US and UPO.

The candidate has wide teaching experience in the Master degrees at UCO and UPO. He has collaborated in various editions of courses organized by CSIC, being co-director in 3 of them. The candidate has directed 2 international courses and collaborated as a member of the organizing and scientific committee of 3 international and 1 national congresses. He has collaborated in the organization of different dissemination activities, as well as radio interviews and articles in newspapers and food magazines.

Eduardo Medina has been a reviewer for several journals in Food Science and Technology and Microbiology areas, and is part of the editorial member of 4 journals. The candidate has participated in 4 evaluation committee of final master projects at UPO. Member at BECA agency database as an expert in the competitive evaluation processes of AEI calls. Also, he got the accreditation of Profesor Ayudante Doctor by ANECA in 2013.

The candidate has been awarded the prizes: 1) UCOEMPRENDE 2017. Ayudas a la creación de empresas y fomento del espíritu emprendedor 2) First price of the X edición del Concurso de Ideas de Negocio 3) Manuel Losada Villasante award (2018) to excellence in research in the agri-food sector 4) Best poster at OliveBioteq'18 international congress.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: FORTES DA SILVA, RODRIGO
Referencia: RYC2018-023963-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: fortesrs@yahoo.com.br

Título:

Cronobiología y nutrición de peces

Resumen de la Memoria:

The main line of research of the applicant is focused on the study of biological rhythms in fish and animal science. He has developed his research on rhythms of locomotor and feeding behavior as well as rhythms of a number of physiological parameters such as hormones (cortisol, growth hormone, sex steroids,), metabolites (glucose, lactate) and processes such as stress response, growth and reproduction. Besides the basic interests, an important part of his research has been applied to the improvement of culture of several fish species such as the European sea bass, tilapia, arapaimas and tambaqui.

The applicant began his research career as an undergraduate student, collaborating during five years in the research of the Department of Animal Science at the Federal University of Viçosa (UFV)/Brazil. After obtaining his Bachelor's and Master's degree in Animal Science in the same University, he worked for his PhD during three years in the research of the Department of Animal Physiology at the University of Murcia.

After the PhD in Spain, he also worked as an assistant lecturer at the University of UNIFENAS/Brazil, teaching Aquaculture, Fish Nutrition and Applied Biochemistry. In 2012, after public examination, the applicant started his job as assistant professor at University of Bahia/Brazil, teaching the same classes.

The researcher worked as a postdoc in two institutions, in the Department of Animal Science at University of Lavras in Brazil (2 years) and afterwards in the Department of Ecology at University of Cologne in Germany (18 months). The aim of the collaborations was to characterize the feeding behavior related with its physiology of some fish species in both countries.

As professor, the researcher approved some projects and started his own international project With University of Murcia/Spain as main researcher (IP). This was mainly focused on the role of food in the synchronization of biological rhythms in fish. One of the strong points of the project was to provide students and researchers mobility between Brazil and Spain during 4 years. Over time, the researcher learned and trained several techniques, acquiring high skills in some of them such as fish digestibility method, HPLC, fatty acids analysis, amino acids analysis, bromatology, blood measurements, enzymes measurements and chronobiological analyzes. In addition, the applicant started in Texas A&M University and Iowa State University his collaboration with researchers working with tilapia nutrition and nano encapsulation of nutrients in Food Engineering area, which continues to date.

In addition, he also started to develop independent research lines through the regional project in which he is the IP and one international project with the University of Algarve (Portugal).

During this period, the applicant continuously participated in international congresses (America, Asia and Europe) and was invited to teach a course of Aquaculture at the African University of Zambezi (Mozambique).

Recently, I was invited for 6 month as invited professor to participating in research projects through a mobility agreement between UFRB and University of Murcia Convenio marco de colaboración universitaria internacional .

Due to family reasons he aims to consolidate its research career at the University of Murcia and therefore submits its application in this call.

Resumen del Currículum Vitae:

The applicant has published 26 papers in journals indexed in JCR-ISI. Among these publications, the applicant is the first and last author in 25 of them (⁓96%). 11 papers from the total (⁓42%) are published in journals from the first quartile of their respective areas, according to JCR.

The applicant has participated as principal researcher in 12 research projects: 8 national projects, 3 regional projects, 1 integrated actions with United States of America (USA), 1 international project Brazil-Portugal and 1 international project Brazil-Spain.



MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

The researcher performed stays in research centers and Universities from Spain, Germany and Brasil. He performed his main postdoctoral activity in Brasil, at the University of Lavras (2 year). As a postdoc, he also performed a stay of 18 months at the University of Cologne, in Gemany. After his PhD in Spain, he worked during one year and a half as Associate Professor at the Department of Animal Science of the University of Alfenas (UNIFENAS)/Brazil. In the last years, he has been working as associate professor at the Center of Agrarian, Environmental and Biological Science of the University of Recôncavo of Bahia (UFRB)/Brazil and gives classes on fish nutrition and advises doctoral students in Postgraduate Program of Animal Science in the University of Bahia (UFBA)/Brasil.

With regards to teaching, the researcher has directed and co-directed 16 Master, 10 Doctoral Theses and was supervisor of tree postdoctors. He has also invited to give a class of Aquaculture in University of Zambezi (Mozambique) and Máster Universitario en Gestión de Recursos Pesqueros y Acuicultura of University of Murcia (Spain). So far, the applicant has taught a total of 1800 h, mainly in the subjects taught by the Center of Agrarian, Environmental and Biological Science in the Post graduate program and also Degree of Fishing Engineers, Animal Science and Veterinary of the UNIFENAS, UFRB and UFBA.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

Nombre: TORRA FARRE, JOEL
Referencia: RYC2018-023866-I
Área Temática: Ciencias agrarias y agroalimentarias
Correo Electrónico: joel@hbj.udl.cat

Título:

Molecular basis of metabolic herbicide resistance in weeds for quick diagnosis and sustainable food production

Resumen de la Memoria:

Agricultural techniques use pesticides as an essential tool to sustain food quality and quantity demanded by society. Current environmental and economic concerns have led to the creation of European Regulation for the Sustainable Use of Pesticides. Integrated Pest Management is its cornerstone to ensure less reliance on pesticides for crop protection. An overreliance on herbicides for weed control has led to the widespread evolution of herbicide-resistant (HR) weeds. Spain is not an exception, ranking as the second European and seventh worldwide country with more HR-cases. Of particular concern are weeds that exhibit multiple HR to different chemical families.

In this context, after years of post-doc experience in different aspects of weeds, I am developing my own new research-line based on unravelling the HR-mechanisms that weeds can evolve under high herbicide selection pressures. This knowledge is crucial to optimize the chemical inputs in crops and design improved integrated weed management (IWM) strategies for sustainable food production. I am also involved in improving IWM practices to manage HR-weeds. My main advances have been in determining the HR-mechanisms in *Papaver rhoeas* to acetolactate synthase inhibitors (ALS) and synthetic auxin herbicides (SAH). The novelty of my investigation is that I found direct evidences of enhanced metabolism in *P. rhoeas* for the first time as HR-mechanism to ALS and SAH. These achievements were possible with new methodologies using non radio-labelled herbicides for the first time. Moreover, I have also studied HR-mechanisms to glyphosate in *Amaranthus palmeri*, or to bipyrilidyl herbicides in other weed species. All these achievements are possible thanks to collaborations with national and international (Australia, Brazil, France, Mexico, Tunisia, or UK) researchers from public institutions and private bodies.

To undertake my research-line, I am the Principal Investigator (PI) of a Spanish Project, by the Plan Nacional I+D+i for Research Aimed at the Challenges of Society (2017-2020) with 102.850 €. I was also the PI of 4 research projects with companies (152.500 €), and I am currently the PI of 2 other research projects with companies (116.000 €). I am studying the evolution of multiple HR-mechanisms in several important weed species (*P. rhoeas*, *Lolium rigidum*, *Echinochloa* sp., or *Amaranthus palmeri*). I will research how degrading herbicides routes involving cytochrome P450 or glutathione-S-transferase enzyme families can confer resistance to different herbicides. Moreover, field studies are underway to design better IWM programs based on all this knowledge to implement in decision support tools. Furthermore, research is under progress with the aim of developing a kit for quick detection of metabolic resistance for the main Spanish HR weeds based on ELISA methods (thanks to an international collaboration, UK). These tools will become mandatory for timely assessment of farmers to manage HR weed populations, since enhanced metabolism can confer resistance to herbicides from different groups and chemistries, to those never applied so far, and even to those not marketed yet. Finally, I will organize the international congress 3rd Global Herbicide Resistance Challenge, held in Barcelona in 2022.

Resumen del Currículum Vitae:

I am developing my own new research-line to understand the physiological and molecular basis of herbicide resistance in weeds to improve their integrated management. With this aim, I am the Principal Investigator (PI) of a 3-year National Research Project (RP), plus I was the PI of 4 RP with Private Bodies of two countries (152.500 €), and I am leading as PI 2 more RP (116.000 €). My advances were published in several high-impact Q-1 journals. I participated in 2 European RP (ERA-NET BiodivERsA from H2020 and Integrated Action), 4 National RP and 2 Catalan RP. I supervised 10 graduate and master students and two Doctoral Theses, presented in 2013 and 2016, plus a third one in progress (2018). I did two international stays in my PhD in Australia (11 months) and Canada (2 months). Afterwards I highlight the post-doctoral stay in Argentina (>1 month). I was invited as keynote speaker in two international conferences: one in Prague (2016) as opening session, and another one in Denver (2017). My research has led to 50 articles, 40 in SCI journals (plus 3 under review), 25 in Q1 journals (i.e. *Agron Sustain Dev* (2), *Front Plant Sci* (2), *J Agr Food Chem*, *Pest Manag Sci* (2), *Pestic Biochem Phys* (2), *Ind Crop Prod* (3), *Plos One* (2), etc.), 2 book chapters in preparation and 73 contributions to national/international congresses. I am professor on Weed Science at the Master of Integrated Crop Protection (UdL) since 2009.

Papers contribution

-40 SCI articles. 1st author: 11, last: 9, corresponding: 11
-as 1st/Last/Corresponding author: 21 (53%)
-Q1: 35 (87%); Q2: 4 (10%); Q3: 1 (3%); D1: 14 (35%). Scopus
-2 Book chapters in preparation for Springer Ed (1 as 1st author)
-Total Cites: 270, Scopus; 391, Google Scholar
-h-index: 12, Google Scholar; 10, Scopus
-i10-index: 17, Google Scholar; 11, Scopus



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2018

Turno de acceso general

-Co-authors in SCI articles: 49, international 25
National & international RP
-PI in the National RP AGL2017-83325-C4-2-R by the Plan I+D+i for 2017-2020 (102.850)
-Researcher in National RP: 4 (Competitive)
-Researcher in 2 European RP (ERA-NET BiodivERsA from H2020 and Integrated Action)
-Researcher in autonomic RP: 2 (Competitive)
-PI in International RP with companies: 6 (Non-competitive) for 268.500
-Researcher in RP with companies: 6 (Non-competitive)
-International collaborations (with or without joint projects): 15 (leader in 5)
Research Stays, Dissemination, Organization & Evaluation
-Pre-doctoral stays: 14 months; 11 in University of Western Australia, Perth, Australia; 2 in Agri-Food Canada, Saint Jean sur Richelieu, Canada; 1 in Instituto de Agricultura Sostenible, Córdoba, Spain
-Post-doctoral stays: >1 month in Universidad Nacional del Sur, Bahía Blanca, Argentina
-73 communications in national/international congresses, 25 international
-Invited speaker in 2 international conferences (1 as opening session)
-Tribunal member of 5 Doctoral Thesis
-Supervisor of 3 Doctoral Theses and 11 TFG/TFM
-RP Reviewer for MINECO
-Organizer of the international congress 3rd GHRC 2022
-Reviewer in 55 papers
-Member of the Scientific Committee of SEMh (Spanish Weed Science Society)
-Member of the European and International Weed Science Societies
Other
-PhD fellowships (competitive): 3 (1 own)
-Post-doc contracts (competitive): 2
-SEMh Award as Best Doctoral Thesis in Weed Science (2007)
-UdL Award as Best Doctoral Thesis in Agronomy in 2015/16
-Scientific advisor of the HRAC
-Professor in 20 Courses and Technical Days