

Curriculum Vitae

*Insert a photograph here (optional)*

**Personal information**

First name / Family name	<b>Gloria/Torres Cortés</b>		
Address(es)			
Telephone			
Mobile			
E-mail	Gloria.Torres-Cortes@angers.inra.fr		
Nationality	Spanish		
Date of birth			
Gender	Female		

**Personal statement and statement of intent**

My scientific career began in 2006, when I started as a PhD student in the lab of Francisco Martínez-Abarca (Estación Experimental del Zaidín-Granada). My thesis was entitled “**Metagenomic analysis of the rizhosphere of xerophite plants from the Central Altiplane of Mexico**”. During my PhD, I developed experimental skills and gained knowledge about next-generation sequencing and computational analysis of metagenomic data. I also gathered experience in the development of environmental libraries in phages and in the screening of antibiotic resistance genes and lipolytic enzymes. Three publications and different communications in congresses resulted from my PhD work.

After successfully obtaining my PhD, I moved to Munich to work as a postdoctoral researcher in Dr. Arthur Schüssler’s group, at the Genetics section of the Biology I Department of the University of Munich. During my first year, I was involved in the European project VALORAM. The aim of this project was to promote the sustainable development of potato-based agricultural systems in the Andean region by using native microbes. Specifically, I worked on the molecular characterization of arbuscular mycorrhizal fungi (AMF) from environmental communities in potato plants from the Andes. One publication in the journal “Mycorrhiza” and several communications in international congresses resulted from this research line.

During my second year as a postdoctoral researcher, I was involved in the development of the externally-funded collaborative proposal (writing the proposal itself and producing preliminary data) “**Genome-sequencing of the obligate symbiotic, Mycoplasma-related endobacteria of arbuscular mycorrhizal fungi to uncover their function and coevolution**”. Since July 2012 I have been working on this project, which has allowed me to gain more experience in next-generation sequencing methods and in the bioinformatic and computational analysis of next-generation data. As a result of this project, we have participated in several international conferences and I am the first and corresponding author of a manuscript published in the journal “Proceedings of the National Academy of Sciences” (PNAS). In addition to my main research activity, I also had the opportunity to perform some teaching activities during my postdoctoral stay, being involved in a bioinformatics Master’s course at the Ludwig-Maximilians University of Munich, and in the co-supervision of students. My position in this

	<p>international environment allowed me to achieve an idea of first-line research activities in the field and to get acquainted with a broad number of techniques that could be useful for future projects.</p> <p>My work in Angers will represent a key contribution to the analysis of the bacteria and fungi communities associated with seeds through some of the methods I learnt during my previous research activities, and it will also allow me to establish new international research relationships. The opportunity to work in the excellent environment of “The Research Institute of Horticulture and Seeds” in Angers will consolidate my scientific abilities, allowing me to become an independent researcher in the field of bacteria-fungal interactions. Finally, if I am awarded the AgreenSkills programme, I will have the opportunity to reinforce and complement my scientific skills with the different AgreenSkills’ trainings, apart from expanding my contact network by meeting the other AgreenSkills’ scientists from similar areas.</p>
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**Education and training** *Please provide information here regarding your PhD and MSc*

Location and dates	Évry-France/ Start-End date: 07/04/2014 – 09/04/2014
Title of qualification awarded	Training in Bacteria annotation II
Principal subjects/occupational skills covered	Bacterial metabolic networks prediction, comparison and annotation
Name of Institute	MicroScope platform-LaBGeM

Location and dates	Évry-France/ Start-End date: 01/04/2014 – 04/04/2014
Title of qualification awarded	Training in Bacteria annotation
Principal subjects/occupational skills covered	Annotation and analysis of prokaryotic genomes using the MicroScope platform
Name of Institute	MicroScope platform-LaBGeM

Location and dates	Louvain-la-Neuve-Belgium/ Start-End date: 01/05/2011 - 06/05/2011
Title of qualification awarded	Training in arbuscular mycorrhiza fungi in vitro manipulation
Principal subjects/occupational skills covered	International training on in vitro culture of Arbuscular Mycorrhizal Fungi
Name of Institute	Laboratory of Mycology of the Earth and Life Institute

Location and dates	Granada-Spain/ Start-End date: 01/01/2006 - 01/07/2006
Title of qualification awarded	Training in edaphology and plants biology
Principal subjects/occupational skills covered	International course of edaphology and biology of plants
Name of Institute	Estación Experimental del Zaidín

Location and dates	Granada-Spain/ <b>Date of qualification: 15/07/2010</b>
Title of qualification awarded	<b>Doctor in Biology</b>
Principal subjects/occupational skills covered	Bacteria diversity and metagenomics
Name of Institute	University of Granada

Location and dates	Granada-Spain/ Date of qualification: 01/07/2007
Title of qualification awarded	Diploma de Estudios Avanzados (DEA; (Master of Advanced Studies))
Principal subjects/occupational skills covered	Soil metagenomics and lipolytic proteins characterization
Name of Institute	University of Granada

Location and dates	Granada-Spain/ Date of qualification: 01/09/2005
Title of qualification awarded	University degree in Biology (5 years)
Principal subjects/occupational skills covered	Microbiology and molecular biology
Name of Institute	University of Granada

## Work experience

Location and dates	IRHS (Institut de Recherche en Horticulture et Semences) UMR 1345 (Angers; France) /Start-End date: 01/03/2016- present
Occupation or position held	Postdoctoral research associate
Main activities and responsibilities	Research
Name of employer	Matthieu Barret

Location and dates	Ludwig-Maximilians-University of Munich (Germany)/ Start-End date: 01/01/2011 - 15/09/2015
Occupation or position held	Postdoctoral research associate
Main activities and responsibilities	Research and teaching
Name of employer	Arthur Schüssler

Location and dates	Estación Experimental del Zaidín (Granada; Spain)- Spanish National Research Council (CSIC)/ Start-End date: 01/01/2006 - 31/12/2009
Occupation or position held	Predoctoral contract (PDI). Funded by a Spanish Research Fellowship (CSIC-I3P)
Main activities and responsibilities	Research

Name of employer	Francisco Martínez-Abarca
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Location and dates	University of Granada (Spain)/ Start-End date: 01/01/2005 - 01/06/2005
Occupation or position held	Research fellowship in Microbiology. Funded by a Spanish Government Research Fellowship
Main activities and responsibilities	Research
Name of employer	José Muñoz Dorado

Location and dates	University of Granada (Spain)/ Start-End date: 01/06/2004 - 30/09/2004
Occupation or position held	Research fellowship in Microbiology. Funded by the University of Granada
Main activities and responsibilities	Research
Name of employer	José Muñoz Dorado

### Languages

Mother tongue(s)	Spanish				
Other language(s)	<b>Understanding</b>		<b>Speaking</b>		<b>Writing</b>
<i>European level (*)</i>	Listening	Reading	Spoken interaction	Spoken production	
<i>English</i>	C1	C1	C1	C1	C2
<i>German</i>	B1	A2	A2	A2	A2
<i>Add more languages if relevant</i>	(*) Common European Framework of Reference for Languages <a href="http://europass.cedefop.europa.eu/en/resources/european-language-levels-cefr">http://europass.cedefop.europa.eu/en/resources/european-language-levels-cefr</a>				

*Add as many lines as needed, delete fields which are not relevant to your profile*

### Academic Record

<p><b>Publications</b></p> <ul style="list-style-type: none"> <li>• The list of your publications must be numbered in chronological order with the most recent first.</li> <li>• Publication details must be according to standard systems of referencing e.g. Authors (x, y, z...), year, title, journal, issue n°/volume/page range.</li> <li>• Please specify <b>all</b> contributing authors, <b>highlighting your name in bold</b> and respecting the authors' order.</li> <li>• Provide any other essential details that will help us to fully assess your contribution to the publication.</li> </ul>	<p><b>Accepted, in press and published articles / papers:</b></p> <ol style="list-style-type: none"> <li>1. <b>Gloria Torres-Cortés*</b>; Stefano Ghignone; Paola Bonfante; Arthur Schüssler (2015) Mosaic genome of endobacteria in arbuscular mycorrhizal fungi: trans-kingdom gene transfer in an ancient mycoplasma-fungus association. Proceedings of the National Academy of Sciences (PNAS) 112, pp. 7785–7790.        With the associated comment:        Chih-Horng Kuo “Scrambled and not-so-tiny genomes of fungal endosymbionts” (2015) PNAS: 112 (25) 7622-7623  <b>*corresponding author</b></li> <li>2. Carolina Senés-Guerrero; <b>Gloria Torres-Cortés</b>; Stefan Pfeiffer; Mercy Rojas; Arthur Schüssler (2013) Potato-associated arbuscular mycorrhizal fungal communities in the Peruvian Andes. Mycorrhiza 24, pp. 405 - 417.</li> <li>3. <b>Gloria Torres-Cortés</b>; Vicenta Millán; Antonio José Fernández-González; Jose Felix Aguirre-Garrido; Hugo César Ramírez-Saad; Manuel Fernández-López;</li> </ol>
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	<p>Nicolás Toro; Francisco Martínez-Abarca (2012) Bacterial community in the rhizosphere of the cactus species Mammillaria carnea during dry and rainy seasons assessed by deep sequencing. Plant and Soil 357, pp. 275 - 288.</p> <p>4. Jose Felix Aguirre-Garrido; Daniel Montiel-Lugo; Cesar Hernández-Rodríguez; <b>Gloria Torres-Cortes</b>; Vicenta Millán; Nicolas Toro; Francisco Martínez-Abarca; Hugo Cesar Rodríguez-Saad (2012) Bacterial community structure in the rhizosphere of three cactus species from semi-arid highlands in central Mexico. Antonie Van Leeuwenhoek 10, pp. 891 - 904.</p> <p>5. <b>Gloria Torres-Cortés</b>; Vicenta Millán; Hugo Ramírez-Saad; Rafael Nisa-Martínez; Nicolás Toro; Francisco Martínez-Abarca (2011) Characterization of novel antibiotic resistance genes identified by functional metagenomics on soil samples. Environmental Microbiology 13, pp. 1101 – 1114.</p>
<p>Presentations as invited speaker</p>	<p>Invited speaker in the seminar sessions of the Estación Experimental del Zaidín, Granada (Spain), October 2015. Talk title: Uncovering the genome of the Mollicutes-related endobacteria of arbuscular mycorrhizal fungi</p> <p>Invited speaker at the 8th International Conference on Mycorrhiza (ICOM) in Arizona (USA), August 2015. Talk title: Uncovering the genome of the Mollicutes-related endobacteria of arbuscular mycorrhizal fungi</p> <p>Seminar given after invitation in the Ludwig-Maximilians University of Munich (Germany), 2010. Title: Metagenomic analysis of the rizhosphere of xerophite plants from the Central Altiplane of Mexico</p> <p>Seminar given after invitation in the University of Louvain-La-Neuve (Belgium), 2010. Title: Metagenomic analysis of the rizhosphere of xerophite plants from the Central Altiplane of Mexico</p> <p>Invited speaker at the III Meeting of the Group Specialized in Microbiology of Plants in Granada (Spain), February 2009. Talk title: Analysis of the rizosphere of xerophyte plants from the Central Mexican Plateau through next generation techniques</p> <p>Invited speaker at the XXII National Congress of the Spanish Society of Microbiology in Almería (Spain), September 2009. Talk title: Isolation and description of novel antibiotic resistance genes from libraries</p> <p>Invited speaker at the XXII National Congress of the Spanish Society of Microbiology in Gothenburg (Sweden), July 2009. Talk title: Novel antibiotic resistance genes from soil metagenomic libraries</p>
<p>Authored books or book chapter(s)</p>	
<p>Participation in open calls for proposals as contributor or leader</p>	<p>Name of the grant: Train-2-move. Conferring institution: University of Torino (UNITO), implemented with the support of the European Commission and the banking foundation Compagnia di San Paolo. Duration of the grant: 2 years. Name of institution: University of Torino (Italy). Rejected in favour of a Postdoctoral Position in IRHS (INRA; Angers)</p>

	<p>Name of the grant: Beca I3P CSIC_Predocctoral studies. Conferring institution: Consejo Superior de Investigaciones Científicas. Duration of the grant: 4 years. End date: 31/12/2009. Name of institution: Estación Experimental del Zaidín (Granada; Spain)</p> <p>Name of the grant: Fellowship for stays abroad. Conferring institution: Consejo Superior de Investigaciones Científicas. Duration of the grant: 3 months. End date: 31/08/2009. Name of institution: University of Hamburg (Germany)</p> <p>Name of the grant: Fellowship for stays abroad. Conferring institution: Consejo Superior de Investigaciones Científicas. Duration of the grant: 3 months. End date: 30/09/2008. Name of institution: Institute of Marine Sciences (Barcelona)</p> <p>Name of the grant: Research fellowship in Microbiology ("Beca de Colaboración"). Conferring institution: Consejo Superior de Investigaciones Científicas. Duration of the grant: 6 months. End date: 01/06/2005. Name of institution: University of Granada (Spain)</p> <p>Name of the grant: Research fellowship in Microbiology ("Beca de Inicio a la Investigación). Conferring institution: University of Granada. Duration of the grant: 3 months. End date: 30/09/2004. Name of institution: University of Granada (Spain)</p>
Graduate teaching as lecturer or training coordinator	Type of teaching: International teaching. Name of subject/course: Phylogenetic analysis (Bioinformatics). Type of programme: Master's degree. Course given: Bioinformatics. Start-End dates: 30/10/2012-31/10/2012; 18/11/2014- 19/11/2014. Institution: Ludwig-Maximilians University of Munich (Germany). Subject language: English
Awards and prizes, if any	

### Collaboration and Networking

Participation in collaborative projects funded by competitive programmes (specify if at leading position)	<p>Name of the project: <b>Genome-sequencing of the obligate symbiotic, <i>Mycoplasma</i>-related endobacteria of arbuscular mycorrhizal fungi to uncover their function and coevolution.</b> Funded by the German Research Foundation (DFG). Institution where project took place: Ludwig-Maximilians University of Munich (Germany). Head(s) researcher(s): Gloria Torres; Arthur Schüssler. Type of participation: <b>Coordinator</b>. Start date: 01/01/2012 Duration of the project: 3 years. <b>Applicant's contribution:</b> I was involved in the development of the proposal (writing the proposal itself and producing preliminary data). After the proposal was successfully approved, I was involved in data production, collaborations and general project management. <b>Relation to the current proposal:</b> Thanks to this project, I have gained a broad experience in next-generation sequencing methods and in the bioinformatic and computational analysis of next-generation data applied to the <i>Mollicutes</i>-related endobacteria of AMF. Specifically, my experience in the assembly of single genomes from metagenomes will be very useful in the current proposal. In addition, I gained a lot of experience in managing findings and coordinating the project.</p> <p>Name of the project: <b>VALORAM — Valorizing Andean microbial diversity through sustainable intensification of potato-based farming systems.</b> Institution where project took place: Ludwig-Maximilians University of Munich (Germany). Start-End</p>
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	<p>date: 01/01/2011 - 31/12/2015. <b>Applicant's contribution:</b> I was directly involved in sampling collection and data analysis. <b>Relation to the current proposal:</b> Thanks to my participation in this project I learned the basic techniques to work with AMF diversity, and this will have a direct application in the current proposal for the study of the fungal diversity associated to the seeds.</p> <p>Name of the project: <b>Metagenomic analysis of the rizhosphere of xerophite plants from the Central Altiplane of Mexico (PhD thesis)</b>. Institution where project took place: Estación Experimental del Zaidín; Granada, Andalusia (Spain). Head(s) researcher(s): Gloria Torres; Francisco Martinez-Abarca Pastor. Start-End date: 01/01/2006 - 31/12/2009. <b>Applicant's contribution:</b> I was directly involved in sampling collection and data analysis. <b>Relation to the current proposal:</b> During my PhD, I worked on environmental metagenomics and uncultured microorganisms. The topic of my doctoral thesis was soil metagenomics, with the title "Metagenomic analysis of the rhizosphere of xerophytic plants from the Central Altiplane of Mexico". I obtained experience in next generation sequencing, also for diversity assessment, bioinformatics and computational and functional analysis of metagenomics data, the establishment of fosmid libraries and other metagenomics- and genomics-related approaches. All this knowledge will be directly applied to the current proposal.</p>
Partnerships or experience with industry	
University or post-graduate programme leader	
Graduate teaching as lecturer or training coordinator; PhD supervision	<p>Project title: Die Diversität von Endobakterien und Mykorrhizosphärenbakterien arbuskulärer Mykorrhizapilze/ Co-supervision with Arthur Schüssler. Type of project: End of course project. Student: Susanne Kublik. Date of reading: 15/07/2012</p> <p>(see above also regarding teaching) Type of teaching: International teaching. Name of subject/course: Phylogenetic analysis (Bioinformatics). Type of programme: Master's degree. Course given: Bioinformatics. Start-End dates: 30/10/2012-31/10/2012; 18/11/2014- 19/11/2014. Institution: Ludwig-Maximilians University of Munich (Germany). Subject language: English</p>
Membership of professional bodies and committees	Member of the International Mycorrhiza Society (IMS)

## Research management, Technology transfer, and Communication

Team management	<p>I was involved in the management of the project's team: <b>Genome-sequencing of the obligate symbiotic, Mycoplasma-related endobacteria of arbuscular mycorrhizal fungi to uncover their function and coevolution</b> (see above). Start date: 01/01/2012. Duration of the project: 3 years. In particular, I was involved in the development of the proposal (writing the proposal itself and producing preliminary data) and after the proposal was accepted I participated in the coordination of the collaborations and general project management.</p> <p>I was the <b>national agent for the CSIC young researchers</b>. Type of management: Group management. City: Granada (Spain). Institution: FEDERACIÓN DE JÓVENES</p>
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	<p>INVESTIGADORES / PRECARIOS. Start date: 2009. Duration: 1 year</p> <p>Participation in the organization of the conference “VI Jornadas de Jóvenes Investigadores”. Convening institution: FEDERACIÓN DE JÓVENES INVESTIGADORES / PRECARIOS. City: Granada (Spain). Type of participation: Organiser. Start date: 2008. Duration of the conference: 3 days</p> <p>Participation in the organization of the conference “El pabellón del Sol”. Convening institution: Estación Experimental del Zaidín. City: Granada, Spain. Type of participation: Organiser</p>
Technological platform management	
Consultancy for the public or private sector	<p>Name of the activity: Paper peer review. Responsibility held: Paper referee. Organising institution: Scientific Journal. Type of activity: Review of articles in scientific or technological journals</p> <p>Responsibility held: Thesis referee. Organising institution: University of Granada        Type of activity: external evaluator of PhD thesis</p>
<p><b>Other experience and skills relevant to the application</b></p>	<p><b>Work presented in conferences at a national or international level</b></p> <ol style="list-style-type: none"> <li>1. Uncovering the genome of the Mollicutes-related endobacteria of arbuscular mycorrhizal fungi. Eighth International Conference on Mycorrhiza (ICOM8). Arizona, USA. 2015</li> <li>2. Metagenome-sequencing of the obligate symbiotic <i>Mycoplasma</i>-related endobacteria of arbuscular mycorrhizal fungi. Bacterial-fungal interactions: a federative field for fundamental and applied microbiology. Roscoff, France. 2013</li> <li>3. Metagenome-sequencing of the obligate symbiotic <i>Mycoplasma</i>-related endobacteria of arbuscular mycorrhizal fungi. 12th Symposium on Bacterial Genetics and Ecology (BAGECO). Ljubljana, Slovenia. 2013</li> <li>4. Diversity of potato associated arbuscular mycorrhizal fungi from the Peruvian Andes. 7th International Conference on Mycorrhiza (ICOM7). New Delhi, India. 2013</li> <li>5. Diversity of potato associated arbuscular mycorrhizal fungi from the Peruvian Andes. I Molecular Mycorrhizal Meeting. Munich, Germany. 2012</li> <li>6. <i>Mycoplasma</i>-related endobacteria of arbuscular mycorrhizal fungi. I Molecular Mycorrhizal Meeting. Munich, Germany. 2012</li> <li>7. Description and phylogenetic position of a new AMF strain of <i>Glomus invermaium</i> from Ecuador. 4th International Symposium on Microbial Ecology, ISME4. Copenhagen, Denmark. 2012</li> <li>8. Isolation and description of novel antibiotic resistance genes from libraries. XXII National Congress of the Spanish Society of Microbiology. Almería, Andalusia, Spain. 2009</li> <li>9. Novel antibiotic resistance genes from soil metagenomic libraries. 3rd Congress of European Microbiologists. Gothenburg, Sweden. 2009</li> </ol>



	<p>10. Analysis of the rizosphere of xerophyte plants from the Central Mexican Plateau through next generation techniques. III Meeting of the Group Specialised in Microbiology of Plants. Granada, Andalusia, Spain. 2009</p> <p>11. Bacterial community profile of the rizosphere of cactaceae from the Central Mexican Plateau. Workshop on microbial diversity in the biosphere: trends and new perspectives. Baeza, Andalusia, Spain. 2007</p> <p>12. Identification and description of novel esterases from the metagenome of an agricultural soil. Spanish Society of Microbiology. Sevilla, Spain. 2007</p> <p>13. Identification of novel esterases/lipases on a metagenome library from an agricultural soil. International symposium on environmental biocatalysis. Córdoba, Andalusia, Spain. 2006.</p>
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**Scientific References** *Add up to 3 references*

Full name	Francisco Martínez-Abarca Pastor
Position	Senior CSIC Research Scientist
Institution	Estación Experimental del Zaidín (CSIC, Granada, Spain)
Email address	fmabarca@eez.csic.es

Full name	Caroline Gutjahr
Position	Emmy Noether Research Group Leader
Institution	Ludwig-Maximilians University of Munich
Email address	caroline.gutjahr@lmu.de

Full name	Manuel Fernández López
Position	CSIC Research Scientist
Institution	Estación Experimental del Zaidín (CSIC, Granada, Spain)
Email address	manuel.fernandez@eez.csic.es

**How did you hear about AgreenSkills programmes?**

<i>Please indicate here how you first heard of the AgreenSkills programmes (e.g. university call for submissions, job mailing list/website, magazine advertisement, etc.)</i>	I heard about the AgreenSkills programmes from an INRA member, who told me about the many advantages that these programmes have (trainings, meetings...)
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