

DEADLINE EXTENDED!!!

2019 International CRAG “Severo Ochoa” PhD Program

The International “Severo Ochoa” PhD Program of the Centre for Research in Agricultural Genomics (CRAG) is advertising one PhD position for 2020. This is a four-year program beginning in early 2020. Doctoral students enrolled in this program will obtain their PhD Degree from either the Autonomous University of Barcelona (UAB) or the University of Barcelona (UB). More information about the doctoral program at CRAG can be found here: <https://www.cragenomica.es/training/phd-programme>

If interested in applying to the International CRAG “Severo Ochoa” PhD Program, **please carefully read the Application requirements and procedure** and check out all **available projects**.

Application deadline is **Friday October 25, 2019**. Successful applicants will start their PhD projects in mid 2020.

This four-year PhD grant is funded by the “National Programme for the Promotion of Talent and its Employability 2019” from the Spanish Ministry of Economy and Competitiveness.

Application requirements and procedure

Eligibility:

1. The program is aimed at international students who have completed one of the following options by September 2019:
 - studies that lead to an official Spanish (or from another country of the European Higher Education Area) university degree in Biology, Biochemistry, Biotechnology, or related areas and that have 300 credits (ECTS), of which at least 60 must correspond to master level.
 - a degree in a non-Spanish university not adapted to the European Higher Education Area that gives access to doctoral studies in Biology, Biochemistry, Biotechnology or related areas.
2. Candidates are selected exclusively on merit, on the basis of their curriculum. Academic grades and the curriculum of applicants are evaluated, as well as reference letters and a motivation letter. No selection criteria for positive or negative discrimination are applied.
3. Applicants should have obtained a Bachelor degree after January 2016.
4. Candidates cannot be in possession of a PhD Degree.
5. Candidates cannot have been hired as predoctoral students for more than 12 months before the start of the CRAG “Severo Ochoa” PhD Program
6. Candidates cannot have started a pre-doctoral fellowship funded by the Spanish “Plan Estatal de Investigación, Desarrollo e Innovación Tecnológica” or any previous “Plan Nacional”.

Members of the Consortium:

How to apply:

Applicants should complete and submit the on-line application through [Cragjobs](#).

Applicants will be asked to upload the following documents:

- Curriculum vitae
- A motivation letter, including a brief summary of work experience and a statement of research interests and career goals (2 pages maximum).
- A scanned copy of the student's certified Academic Record, including a detailed record of study / transcript (a list of attended courses and corresponding grades): these documents must show the grades attained in exam periods.
- Copy of passport (international applicants only).
- Any additional files considered relevant to the application, but please only provide documents that are important to support it. Do not overload the application with certificates and documents of lesser significance.

In addition, applicants must ensure the submission of two reference letters from university lecturers or scientists with whom the applicant has studied or worked. Letters should be sent directly by the referees to PhDprogram@cragenomica.es, and should also be received by the application deadline, **October 25, 2019**. Only letters with official letterhead and signature will be accepted. Candidates are responsible for ensuring that referees submit these letters, and should consider that referees may need some time to prepare and send their letters within the deadline. Applications without reference letters will not be considered.

Please [download](#) referee request.

The doctoral program is in English. Therefore, a good knowledge of English is absolutely required. We encourage candidates to support the application with scores of internationally valid language exams like TOEFL or other tests. However, they are not mandatory: a verifiable education in English, or a reasonably long stay in an English speaking country are also convincing.

In the motivation letter, **applicants should indicate up to two research projects in which they would like to work, in order of preference** (see **Available Projects**, below). Moreover, if candidates have a particular interest in any one of these projects, they should also indicate it. More information on the research activities of each group can be found at Crag website.

Applicants must submit information in English (CV, and motivation letter including summary of work experience). If the certified academic records are not in English, Catalan or Spanish, applicants must also attach a translation in one of these languages.

Applicants must upload all the required documents as **PDF files of less than 10MB**.

Please note that we can only consider applications that are complete.

Selection procedure

Applications will be reviewed through a selection process involving Crag group leaders, including the Principal Investigators that will host the fellows. Students are preselected according to their written application, grades, and reference letters.

Short-listed candidates will be interviewed during summer 2019. Candidates who are accepted for the program will be notified by email shortly after the interview period. These PhD positions are funded by the Spanish Ministry of Economy and Competitiveness (MINECO) and Crag. Crag will assist the selected candidates to submit the required documents at the Spanish MINECO website in September-October 2019. Applicants who have not been successful but have received a positive evaluation will be put on a waiting list to cover possible renunciations and future positions.

Available Projects

2019 Crag SO – 2: Computational and biochemical approaches for the analysis of LRR-RLKS involved in peach fruit shape

Principal Investigator: Maria José Aranzana & Ana I. Caño-Delgado

Peach fruit shape is one of the fruit traits highly linked to consumer acceptancy having a great agro-economic impact. Peaches may have round, flat and intermediate shape like ovate or elliptic. Recent analyses in peach conducted by the group of Dr. Aranzana have identified possible polymorphisms in five homologous LRR-RLK genes that cluster together in the flat shape locus *S* (in chromosome 6), being one of them (Prupe.6G281100m; orthologous to Brassinosteroid insensitive 1-associated receptor kinase (*BAK1*)) a strong candidate for the flat shape¹. The present hypothesis is that some of these LRR-RLK receptors signaling mediate fruit shapes. By identifying the causal polymorphisms of different fruit shapes and validating the role of these RLKs proteins in this trait will not only have a high scientific impact but also of application in breeding programs. The laboratory of Dr. Caño-Delgado has an international reputation in the study of the role Brassinosteroid (BR) signal pathway in plant development and adaptation in plants. Plants perceived BRs by the receptor kinase Brassinosteroid-insensitive 1 like family of receptors (*BR11*-like), that dimerizes with *BAK1* to prompt BR signal transduction². By using structural bioinformatics and biochemistry, the lab of Dr. Caño-Delgado is analyzing and modeling protein-protein interactions, as well as predicting protein binding sites using *Arabidopsis* and *Sorghum* as model species. This PhD project aims at implementing such approach to investigate how LRR-RLK of the *S* locus may dimerize participating in signaling mechanisms during fruit development driving differential fruit shapes and will improve our understanding of LRR-RLK function regulating networks during fruit development. This PhD project will investigate the role of LRR-receptor kinases involved in peach fruit shape by combining structural, biochemical and genetic approaches.

References:

¹ López-Girona et al. 2017. *Sci Rep.* 7(1):6714; ² Kinoshita, Caño-Delgado, 2005. *Nature.* 433(7022):167-71.