

AGeNT Guide for Applicants

FOURTH CALL – JULY 2023



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1. THE AGenT PROGRAMME

1.1 Programme Description

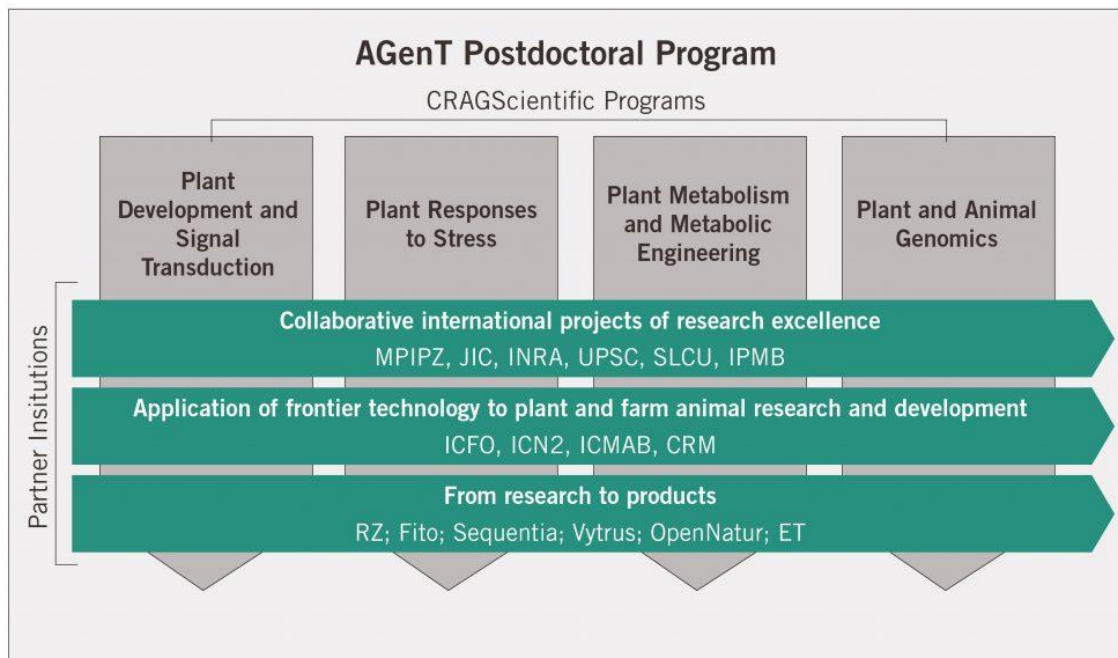
The **AGenT** (Agricultural Genomics Transversal) **postdoctoral** programme is a Marie Skłodowska-Curie COFUND Programme (H2020 Grant Agreement No. 945043) at the **Centre for Research in Agricultural Genomics** (Crag; Barcelona).

AGenT is an ambitious research and training initiative designed to conduct multidisciplinary and intersectoral research projects at Crag in conjunction with associated partner organizations (private companies, research centers and academic institutions), both national and international.

The programme offers **twenty (20) two-year postdoctoral fellowships** in four calls and is focused on: training both in specific research areas and in transferable and transversal skills; secondments and research collaborations; and networking activities in both the academic and the industrial sectors; all in order to enrich the training of the fellows and enhance their professional development while conducting projects of research excellence.

AGenT is an international, interdisciplinary, and intersectoral programme that can be summarized as an orthogonal grid that combines the four scientific programmes at Crag (Plant Development and Signal Transduction; Plant Responses to Stress; Plant Synthetic Biology and Metabolic Engineering; and Plant and Animal Genomics) with three priority lines that are specifically supported by the three different types of partner organizations of the AGenT programme. These are:

1. **Collaborative international projects of research excellence.** Partner institutions include many of the best research Centers in plant sciences in Europe: Max Planck Institute for Plant Breeding Research (MIPZ, Germany); John Innes Center (JIC, UK); National Institute for Agricultural Research (INRA, France); Umeå Plant Science Center (UPSC, Sweden); The Sainsbury Laboratory at Cambridge University (SLCU, UK), and Institute of Plant and Microbial Biology, Academia Sinica (IPMB, Taiwan).
2. **Application of frontier technologies to plant science research and development** (e.g., advanced materials, nanosciences, and photonics). Partner organizations are: Institute of Photonic Sciences (ICFO, Barcelona); Catalan Institute of Nanosciences and Nanotechnologies (ICN2, Barcelona); Institute of Materials Science of Barcelona (ICMAB), and Center for Research in Mathematics (CRM, Barcelona), all of which are also “Severo Ochoa” programme Centers of Excellence.
3. **From research to products.** Partner organizations are private companies: Rijk Zwaan (RZ); Fitó Seeds; Sequentia Biotech; Vytrus Biotech; OpenNatur; and Enlighting Technologies (ET).



AGeNT (Agricultural Genomics Transversal Postdoctoral Programme) scientific structure.

The AGeNT programme will improve career prospects for plant and farm animal researchers in Europe; contribute to the training of future leaders in the areas of plant and agricultural sciences; support research of excellence and boost the research capacity and international visibility of CRAG and its collaborating institutions; and support advancing research in topics of high social impact and of importance for the UN Sustainable Development Goals. Addressing many of the challenges that human societies will face in coming decades (e.g., climate change and increased weather variability and their consequences; the increasing demand on agricultural products and natural resources - food, feed, and fibre- at the global scale; agricultural sustainability; or the preservation of the ecosystems on which societies depend, to name a few) will crucially depend on plant research at multiple levels.

Funding

The AGeNT Postdoctoral Programme has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie (Grant Agreement No. 945043) and will be co-funded by the Spanish Ministry of Science and Innovation through the "Severo Ochoa" Centres of Excellence and "Maria de Maeztu" Excellence Units Programme 2019 (Project No. CEX2019-000902-S).

1.2 What we offer

The AGeNT Postdoctoral Programme at CRAG offers the possibility for AGeNT fellows to perform highly innovative and multidisciplinary research projects using state-of-the-art facilities within a scientifically-oriented nurturing environment. CRAG will provide AGeNT fellows with additional benefits including:

Training on research skills

AGeNT fellows will receive hands-on training on additional research-related skills and they will have also available a variety of scientific activities including weekly group meetings, CRAG seminars with external speakers, outreach events and internal institute talks and retreats, where CRAG scientists present their research (a valuable source of information about the different research lines and programmes carried out at the Center).

The host groups will provide an optimal environment to develop the scientific and leadership skills encouraging fellows to acquire leader roles in new grant applications and research, to co-supervise the training of new graduate students and collaborate in teaching activities, and to participate in dissemination of results at national and international meetings. Finally, the international character of the Center, with research collaborations with top research groups between EU and non-EU countries, will expand their scientific network in an international environment.

In addition, specific courses on research-related topics of relevance are regularly offered at CRAG, either by the Center's technical personnel (for example, the Bioinformatics Unit, or the Confocal Microscopy facility), or by external providers.

Support and additional training in non-research oriented transferable skills

This programme is focused on training future research leaders to be able to manage and lead their own research group. To succeed in this new role, researchers need to be excellent in science but also need to be best at their soft and transversal skills. AGeNT fellows will play an active role in managing their research project, with the supervision and support of their corresponding Group Leader, having in most cases a first experience in Project management that will help them in their future career as PIs.

Currently at CRAG, postdoctoral researchers are receiving training on career development, scientific writing skills and intellectual property. This training will be enhanced and complementary training will be organized for researchers involved in AGeNT Project.

Monitoring and guidance of career development

Monitoring and guidance of career development is an inherent part of mentoring early-career scientists. Fellows hired under the AGeNT programme will carry out their project in a Research Group, under the guidance and supervision of the corresponding **Group Leader**. The Group Leader is the main supervisor of the fellow and s/he will logically be the first supporter for the Fellow in the next step in her/his career. It is therefore expected that a strong scientific and professional link between the Fellow and the Group Leader will be established and reinforced, both throughout the stay of the fellow at CRAG and beyond, enabling future research collaborations. In addition to the Group Leader, AGeNT postdoctoral fellows will have the option (voluntarily) of having an **additional Mentor**.

An additional level of guidance and monitoring will be provided to the AGeNT fellows through the **Scientific Advisory Board (SAB)** of CRAG. AGeNT fellows will have the opportunity to meet and discuss with the SAB during its yearly visit.

Short stays

As part of the AGenT fellows' training in research-related skills, secondments to partner organizations (or additional institutions) will be encouraged with a view to help the fellows grow their network of contacts and acquire relevant experience.

Secondments will be performed before the end of December 2024.

Appointment conditions of researchers

- 2-year full time employment contract (Salary approx. 35,300€/year)
- Family allowance: 100 Euro/month. The family status of a researcher will be determined at the date of deadline of the call and will be revised during the lifetime of the action only if fellows change their status in terms of dependent children.
- Relocation allowance: a single payment of 1,992 Euros at the beginning of the appointment for researchers with residence out of the Barcelona area at the time of signing the AGenT contract.

1.3 Who can apply

All applicants fulfilling the eligibility criteria (please consult section 2.3 below) at the time of the call deadline can apply to this programme.

Crag is committed to the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, and has received the '**Human Resources Excellence in Research**' award from the European Commission. Crag is an equal opportunity / affirmative action employer and always encourages women and underrepresented minorities to apply. No restrictions on gender, age, ethnic groups, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, and social or economic conditions apply to Crag positions.

1.4 Host Groups

Twenty-seven Research Groups at Crag participate in the fourth AGenT call as Host Groups (see list of participating groups in the following 2 pages)

***Please note that a research group can only be awarded with one grant funded under the same AGenT call.** In case several candidates are shortlisted for the same research group, only the one with higher score will be invited to join Crag.

Host groups

Host Groups for the 2023 AGenT call are the following:

Principal Investigator	Research line	e-mail address and website link
Albert Ferrer and Teresa Altabella	Free and glycosylated sterols play a key role in lipid rafts (LR) formation, which have emerged as central players in plasma membrane-dependent biological processes. Our main research interests are: (i) Understanding the molecular mechanisms underlying the effects of changes in sterol profile on plant development and stress response. (ii) Establishing a working model of LR-based biological processes involved in the phenotypic alterations induced by changes in the membrane sterol composition. (iii) Exploring the effects of changes in the sterol profile on root exudate composition and the rhizosphere microbial community.	teresa.altabella@cragenomica.es albert.ferrer@cragenomica.es https://www.cragenomica.es/research-groups/sterol-and-terpenoid-metabolism-plant-development-and-stress-responses
Àlex Clop	The project seeks to understand the genetic and molecular basis of semen quality in swine. To this end, we will implement whole genome sequencing and single cell multiome analysis (RNA + ATAC) from testes samples belonging to boars from artificial insemination centres with eGBV for semen quality. The main aims are to (i) obtain a single cell atlas of testicular cells in 4 pig breeds and (ii) identify genetic variants with high causative potential related to semen quality and fertility in boars with high genetic merit for production traits.	alex.clop@cragenomica.es https://www.cragenomica.es/research-groups/animal-genomics
Amparo Monfort	Enhancing of disease resistance in cultivated strawberries. Our research aims to improve the specific resistance of fungi and pests such as insects. Leveraging genetic tools such as genotyping and candidate gene analysis, we aim to identify genetic factors associated with disease resistance. This approach not only allows us to unlock the greatest production potential of disease-resistant varieties, but also promotes sustainable strawberry cultivation by reducing the need for chemical treatments. By minimizing treatments, we can mitigate the environmental impact and contribute to a balanced agricultural system.	amparo.monfort@cragenomica.es https://www.cragenomica.es/research-groups/rosaceae-genetics-and-genomics
Ana Montserrat Martín-Hernández	Role of the cell secretory pathway in the resistance/susceptibility to viruses in melon and tomato. Plant viruses alter the endomembrane system and the secretory pathways during the infection. We have found in melon two genes involved in the susceptibility to cucumber mosaic virus (CMV) and have generated CRISPR melon and tomato plants in one of them. These two genes are related to sterol metabolism and are involved in membrane trafficking. We aim to characterize their role during the infection and to generate melon and tomato plants resistant to CMV and other viruses that use the same infection pathway.	montse.martin@cragenomica.es https://www.cragenomica.es/research-groups/plant-viruses
David Caparrós	Elucidating the role of cell wall phenolic metabolites in the production of trichloroanisole (TCA) in <i>Quercus suber</i> . Within a private-public project, we identified several cell wall phenolic metabolites in <i>Quercus suber</i> as putative substrates to generate TCA, an undesirable compound for the cork and wine industry. We propose here to produce these metabolites synthetically coupled to a tag, injected them directly into the cork and determine the appearance of tagged TCA. We will also overproduce these <i>Quercus</i> phenolic metabolites in <i>Arabidopsis</i> to study in vivo the role of these compounds in the production of TCA.	david.caparros@cragenomica.es https://www.cragenomica.es/research-groups/bioengineering-licnocellulosic-biomass-maize
Elena Monte	To understand how photoprotection and growth are regulated under fluctuating light and temperature is key in the current climate context. Our laboratory studies how plants and microalgae sense and respond to their environment, employing cell imaging, photobiology, transcriptomic, epigenetic, and computational approaches to decode fitness optimization. Our research includes processes like the rhythmicity of growth and stomata aperture, photoreceptor and retrograde signaling, leaf growth, or chloroplast biogenesis. Our objective is to understand the basic biology with the further aim to have an impact in the field.	elena.monte@cragenomica.es https://www.cragenomica.es/research-groups/environmental-control-plant-and-algae-growth
Iban Eduardo	In the IRTA's peach and almond breeding programs, marker assisted breeding (MAB) is focused in three areas. Marker assisted selection (MAS) has been implemented for different traits and new markers are being developed. Marker assisted introgression (MAI) is a breeding strategy to increase the genetic variability introgressing new traits from closely related compatible species. Several ILS collections are under development. Finally, the resynthesis strategy is used to develop new cultivars very similar to already existing successful ones with few improved characteristics.	iban.eduardo@cragenomica.es https://www.cragenomica.es/research-groups/rosaceae-genetics-and-genomics
Ignacio Rubio Somoza	Research at the MoRE lab focuses on understanding the evolution of plant-microbe interactions and the underlying molecular processes (i.e., hormone-mediated communication, crosskingdom RNAi...). We also aim to understand the immunity programs specific to each plant cell type and how those impact on viral infection strategies and viral genome plasticity.	ignacio.rubio@cragenomica.es https://www.cragenomica.es/research-groups/molecular-reprogrmning-and-evolution
Igor Florez-Sarasa	Plant primary metabolism under stress. Our group is dedicated to enhancing the understanding of primary metabolism in vegetable crops under changing environmental conditions. Our main expertise is in metabolomics, respiration, photosynthesis and stable isotopes. Gene-edited and transgenic vegetable crops with altered mitochondrial respiration components are being developed to study their role and regulation during climacteric ripening and photosynthesis under stress. The knowledge generated can be used for obtaining crops with improved productivity and fruit quality in the upcoming global change scenarios.	igor.florez@cragenomica.es https://www.cragenomica.es/research-groups/genetics-and-genomics-vegetable-crops
Ivan Reyna-Llorens	The research project aims to investigate the coexistence of C4 and CAM photosynthetic pathways in the <i>Portulaca</i> genus, uncovering the morphological and molecular determinants for a C4-CAM switch, and then engineering a C4-CAM prototype in other plant species, potentially revolutionizing crop resilience and providing valuable insights for crop engineering.	ivan.reyna-llorens@cragenomica.es https://www.cragenomica.es/research-groups/synthetic-biology-and-photosynthesis
Jae-Seong Yang	Computational and Synthetic Biology Group is utilizing high-throughput experimental techniques and machine learning methods to understand the impact of genetic variation on gene expression in microalgae. We are currently seeking post-doctoral candidates with an interest in synthetic biology or metabolic engineering in microalgae, or in transcription and gene silencing mechanisms.	jaeseong.yang@cragenomica.es https://www.cragenomica.es/research-groups/computational-and-synthetic-biology
Jordi Garcia-Mas and Marta Pujol	Genetic dissection of climacteric fruit ripening in melon. We are interested in performing epigenomic studies (DNA methylation and histone modification) in CRISPR/Cas9 knock-out mutants already obtained in two master transcription factors, where climacteric ripening has been abolished. Preliminary data suggest that one of the transcription factors regulates chromatin remodelling in the transition between fruit growth and fruit ripening.	jordi.garcia@cragenomica.es marta.pujol@cragenomica.es https://www.cragenomica.es/research-groups/genetics-and-genomics-vegetable-crops
José Luis Riechmann	Peptides play multiple roles in plants, controlling development and growth or affecting stress responses. However, the genome-wide coding potential of short open reading frames in eukaryotes has been underestimated and overlooked, and the plant peptidome is still largely uncharacterized. We are interested in defining the plant peptidome and in the identification of novel peptides potentially involved in developmental processes, using <i>Arabidopsis</i> flower/inflorescence development and legumes as our experimental systems, to eventually develop peptides as a tool for sustainable agriculture.	joseluis.niechmann@cragenomica.es https://www.cragenomica.es/research-groups/gene-regulatory-networks-plant-development
Josep M ^a Casacuberta	Our research group studies the structure and the evolution of plant genomes. We are investigating the impact that genome structural variation have in phenotypic variation and we are particularly interested in the regulation and impact of transposable elements. We are currently working in capturing the structural variability of crop species in pangenomes, connect structural variability with transcriptional variation, and understanding the molecular determinants of retrotransposon integration in plant genomes. We use a variety of approaches and tools spanning from bioinformatics to molecular biology and biochemistry.	josep.casacuberta@cragenomica.es https://www.cragenomica.es/research-groups/structure-and-evolution-plant-genomes
Josep M ^a Folch	This project will integrate different OMICs to study energy metabolism and immunity in pigs, identifying regulatory gene networks, genes and genetic variants. The main aim is to improve animal disease resistance, production performance, and product quality while maintaining the sustainability of production systems and reducing antibiotic resistance.	josepmaria.folch@cragenomica.es https://www.cragenomica.es/research-groups/animal-genomics
Julia Qüesta	Our lab studies novel epigenetic mechanisms underlying plant developmental transitions and rendering resilience to changing climates. We focus on the role of long non-coding (lncRNAs) and the VAL/Polycomb Repressive Complex system in regulating <i>Arabidopsis</i> development. Furthermore, we are characterizing the epigenomic landscape modulating plant responses to cold temperatures. To this end, we combine innovative methodologies including CRISPR, single molecule imaging, proteomics, transcriptomics and epigenomics.	julia.questa@cragenomica.es https://www.cragenomica.es/research-groups/epigenetics-and-plant-development
L. Maria Lois	SUMO conjugation to proteins is essential during seed development and modulates agronomic traits, such as seed dormancy. Our group is interested in elucidating novel molecular mechanisms involved in SUMO homeostasis with implications in plant evolution and crop productivity.	maria.lois@cragenomica.es https://www.cragenomica.es/research-groups/protein-regulation-development-and-stress

Laura R. Botigué	Laura Botigué is interested in the study of genome evolution during plant domestication and cultivation history. She uses population genetics theory and in modern and ancient DNA to unravel the events and adaptive processes that shaped the genetic variability of modern crops and identify the lost variability that could have agronomic interest. She also studies population structure in crop wild relatives to identify the main contributors of the domestication process.	laura.botigue@cragenomica.es https://www.cragenomica.es/research-groups/genomics-ancient-crops-and-domestication
Marc Valls	Genes controlling the fitness of the plant pathogen <i>R. solanacearum</i> inside and outside the plant host: <i>Ralstonia solanacearum</i> is an emerging plant pathogen that causes major losses in agriculture. We will decipher the genes that are essential for pathogen survival in the soil microbiome and for adaptation to the plant. We will use global gene expression studies combined with synthetic microbiome communities (syncoms) to understand key genes used by the pathogen to complete its life cycle, which may identify targets to control the bacterial wilt disease on crops.	marc.valls@cragenomica.es https://www.cragenomica.es/research-groups/bacterial-plant-diseases-and-plant-cell-death
Marcel Amills	The CAPRAGENE project focuses on the identification of mutations with potential causal effects on goat dairy and health phenotypes by combining whole-genome sequencing of 100 bucks, imputation to 1,400 goats with 50K chip data, and fine mapping of potential causal mutations with Bayesian methods. Moreover, we also expect to identify copy number variation (CNV) segregating in the 1,400 goats and to carry out association studies between selected CNVs and dairy and health phenotypes, thus providing an unprecedented view about the genomic architecture of traits of economic interest in dairy goats.	marcel.amills@cragenomica.es https://www.cragenomica.es/research-groups/animal-genomics
María José Aranzana	The group of Rosaceae Genetics and genomics at Crag works in close collaboration with the apple breeding program at IRTA, developing molecular tools to increase breeding efficiency. We offer a postdoctoral position to establish a methodology for CRISPR-Cas9-based gene editing apple at Crag, with the main objective of gene validation and development of novel genetic resources for breeding. The project will be in close collaboration with Mickael Malnoy at FEM (Fondazione Edmund Mach, Italy), with demonstrated experience in cis-genic and gene edit modification in apple. A secondment at FEM is planned.	mariajose.aranzana@cragenomica.es https://www.cragenomica.es/research-groups/rosaceae-genetics-and-genomics
Nicolas Bologna	DICER-LIKE1 (DCL1) plays a central role in plant miRNA biogenesis, however, its dsRNA substrates have never been directly isolated. By point mutations in their RNaseIII domains, we generated catalytically inactive DCL1. RNA sequencing of DCL1c1 IP allowed us to detect a novel set of DCL1 RNA substrates generated from transposable elements, in addition to miRNA precursors. As a part of this research line, in collaboration with Dr. Yiliang Ding (JIC, UK), the goal of the project is to determine the in vivo single molecule secondary structures and characterize the biological roles of all regions interacting with DCL1.	nicolas.bologna@cragenomica.es https://www.cragenomica.es/research-groups/molecular-biology
Paloma Mas	Our lab focuses on understanding how plants can measure time and use this measurement for improved growth development and responses to stresses such as drought and heat. We propose to use novel gene-editing strategies to specifically manipulate the circadian system in order to obtain plants that are resistant to drought and heat.	paloma.mas@cragenomica.es https://www.cragenomica.es/research-groups/molecular-mechanisms-circadian-clock-function
Robertas Ursache	Our research is focused on uncovering the mechanisms of cell wall remodelling and developing new tools for better plant adaptation. The proposed project aims to create an improved plant gene targeting approach to modulate the activity of secondary cell wall remodelling enzymes. The research will involve both the development of synthetic biology tools and the behavioural analysis of cell wall remodelling genes in native genomic backgrounds using <i>Arabidopsis thaliana</i> as a model, with the goal of adapting the technology to crop species.	robertas.usache@cragenomica.es https://www.cragenomica.es/research-groups/plant-cell-wall-remodeling-and-adaptation
Salomé Prat	Potato tubers differentiate from the subapical region of underground branches or stolons. Although it is widely accepted that formation of these organs involves a developmental process that is unrelated to formation of storage roots, our preliminary data indicate that both shoot- and root-derived organs originate from the vascular meristem. The proposal aims at using scRNA-Seq to unveil the regulatory pathways switching the pre-set xylem differentiation pathway into a storage parenchyma identity.	salome.prat@cragenomica.es https://www.cragenomica.es/research-groups/light-and-temperature-control-plant-development
Sebastián Ramos-Onsins	The team is focused on (i) the Development of Population statistics and methods to measure the levels and patterns of diversity in domestic and wild diploid and polyploid species; (ii) Development of bioinformatic tools for the scientific community interested in variability studies, and (iii) Genome-wide studies of empirical data, focused on understanding the adaptation process under changes in environmental (domestication, climate change) or genomic (polyploidization) contexts.	sebastian.ramos@cragenomica.es https://www.cragenomica.es/research-groups/statistical-and-population-genomics
Soraya Pelaz	Plants as sessile organisms must maximize their chances to survive adversities by reprogramming their development for adaptation to environmental changes. We aim to deeply explore the potential role of RAV genes on adaptation to environmental conditions, including an evolutionary developmental approach, because tem mutants performed better than wild-types when exposed to abiotic stresses, indicating a key role for RAVs in adaptive growth.	soraya.pelaz@cragenomica.es https://www.cragenomica.es/research-groups/floral-induction-and-development

1.5 Partner Organisations

At the time of launching the first call, CRAG has 16 Partner Organisations interested in participating in the AGenT Program through the hosting of researchers in secondments. The Partner Organisations are from 7 different countries, and 6 of them are from the private sector. During the lifetime of the project, CRAG will identify additional Companies and institutions interested in hosting researchers for secondments or to provide training. In addition, AGenT researchers are free to suggest or bring potential collaborations.

Research Centers: Life Sciences



Research Centers: Other Sciences



Industry



2. CALL FOR PROPOSALS

2.1 Timeline

- **Publication of the fourth call:** first week of July 2023
- **Deadline fourth call:** August 27th, 2023
- **Evaluation and Selection:** September 4th - October 8th, 2023
- **Expected publication of results:** October 16th, 2023
- **Fellowships start date:** January 2024

Duration		8 weeks Jul-Aug 23	1 week	5 weeks		1 week	10 Days	Up to 3 months
Action	Call Publication	Application	Administrative Eligibility check	Assessment Process	Interviews	Final Ranking	Appointment of Selected Applicants	Recruitment
Outcome	Announcements in different websites, social media, etc.	Nº proposals submitted	Nº eligible proposals	- Evaluation reports - Ranking of applicants - Applicants recommende d for Interview	- Evaluation reports - Ranking of applicants	- Final Ranking - Applicants recommende d for funding and reserve list	- Invitation letters - Acceptance letters	Hired researchers January 2024
Actors	Crag	Applicants	Crag	Selection Committee	Interview Committee	Interview Committee	Crag/Applicants	Crag

2.2 Application Process

Applications should be submitted through **Cragjobs** (<https://recruitment.cragenomica.es/>, it requires a registration with a password-protected user account). The application must be complete and include all obligatory information and documents.

Applicants will have to provide the following information via Cragjobs:

- 1) **Cover letter**, introducing themselves and highlighting the most relevant aspects of their CV;
- 2) Curriculum Vitae;
- 3) **PhD certificate** or official notification of the award (if applicable);
- 4) Documents accrediting research activities counting towards the total full-time postgraduate research experience (if applicable);
- 5) **Statement of Research interests**, including a short proposal of a prospective research project to be carried out at Crag in collaboration with a Partner Organization and indicating the research group of their interest and the corresponding Principal Investigator (applicants are required to include elements of interdisciplinarity and/or cross-sectoral mobility in their research proposal);
- 6) **Mobility Declaration**, indicating the main activity (work, studies, etc.) during the last 3 years in order to demonstrate you have not resided or carried out your main activity in Spain more than 12 months in the 3 years prior to the call deadline;
- 7) **Ethics Declaration**, indicating any ethical issue related to their project.

In addition, applicants must ensure the submission of **at least two reference letters** from scientists with whom the applicant has studied or worked. Letters should be sent directly by the referees to a specific e-mail address of the AGenT programme, and should also be received by the application deadline. Instructions about how to write a letter of reference to support a candidate will be available in the webpage of the [AGenT project](#). The letters must be as informative as possible and

should refer clearly and objectively to the professional, technical and academic abilities of the candidate.

2.3 Eligibility criteria

The eligibility criteria must be fulfilled at the time of the call deadline. If it becomes clear before, during or after the evaluation phase that one or more of the eligibility criteria have not been fulfilled, the proposal will be declared ineligible and it will be withdrawn:

- Applicants must be **Recognised Researchers (R2)**, based on the [research profile descriptors](#) of the European Commission, i.e. researchers who hold a doctorate degree (PhD) but have not yet established a significant level of independence. Recognised Researchers must be in possession of a PhD or have accumulated at least 4 years of full time equivalent postgraduate research experience prior to the call deadline.
- Applicants are eligible for a period of 5 years following successful completion of their PhD at the date of the call deadline. Exceptions to the 5-year rule are allowed for applicants whose academic career has been interrupted for parental leave, for industrial job experience, or other special circumstances such as mandatory military service or illness. These circumstances will be indicated in the application form in the field “Additional Notes” and must be documented. Extensions will be up to one year per child in case of parental leave and up to two years for industrial breaks. The extension in the case of illness or mandatory military service will depend on its duration.
- Applicants must **not** have resided or carried out her/his main activity (work, studies, etc.) in Spain for more than 12 months in the 3 years immediately before the call deadline. Short stays, such as holidays, will not be considered. Exceptions to the mobility rule will be considered in duly justified cases, like for researchers undergoing a procedure for obtaining refugee status under the [Geneva Convention](#).
- Researchers from any nationality may apply.

2.4 Documents of interest

The following documents will be available in the AGenT website (<https://www.cofund-agent.eu/call-documents-templates/>)

- Guide for applicants
- Research Project template (Statement of research)
- CV Template
- Mobility Declaration
- Ethics self-assessment
- Guidance: How to complete your ethics self-assessment
- Reference letter template
- Redress template

3. SELECTION PROCESS

3.1 Evaluation Process

The evaluation process is divided into five stages:

1) Administrative Eligibility check (1 week): once the call has closed, the administration of CRAG will check that applicants a) fulfil the eligibility rules; and b) obligatory documentation has been provided and that it respects the formatting rules. Ineligible applications will be excluded from further evaluation.

2) Assessment Process and interviews (5 weeks): A Selection Committee formed by external independent experts from recognized national and international universities, research centers and industry will remotely evaluate the applications. Each application will be evaluated by at least 2 experts (gender balanced if possible) from the same or a close area of discipline as the application being evaluated (avoiding conflict of interest between applicants and experts). The assessment process will be focused on the **scientific merit, trajectory of the researcher** (i.e., *past performance*) and the **proposed research project**.

The Selection Committee will elaborate a ranking list defining the applicants selected for a subsequent interview. All applicants will be informed about the results of the evaluation. A minimum of two applicants for each vacancy offered in the call will be invited for interview.

Selected applicants will be invited to present their projects to the Interview Committee. All interviews will be conducted in English through a video-conference tool in the same specified date(s) to provide equal opportunities to all applicants worldwide and avoiding long, environmentally-costly trips. Applicants will be asked to make a 10-minute presentation of themselves and their proposal, followed by 10 minutes of questions and answers. This evaluation stage puts more emphasis on the **potential of the applicant**.

The **final evaluation report** will include the score and feedback to the applicant about the strengths and weaknesses of the application with regard to the evaluation criteria.

3) Final ranking of applicants: After the interviews are completed, the Interview Committee will agree on the final score for each applicant, considering the results of both the Assessment process and the Interview. The Interview Committee will produce the **final ranking list** that will determine the awardees, and those included in a **reserve list**.

4) Ethics evaluation: an ethics committee formed by two senior researchers of Crag, with no conflict of interest in the call, will evaluate the Statement of Research Interest of applicants proposed to be awarded.

5) Appointment of Selected Applicants: the selected applicants will be invited to initiate the appointment process. Selected applicants will be required to confirm acceptance of the offered position within 10 days. If an offer is rejected or the applicant does not reply to the offer in the allotted time, the reserve list will be activated by order of ranking. Selected applicants will have up to 3 months to join Crag.

3.2 Evaluation criteria

AGenT is looking for highly talented and motivated scientists interested in modern, multidisciplinary challenging research to become future leaders in the areas of plant and agricultural sciences. A transparent, merit-based selection procedure will be established with the participation of international external experts.

Administrative Eligibility check

CRITERIA 1: Eligibility rules (eligible/not eligible)

CRITERIA 2: Obligatory documentation (eligible/not eligible)

Evaluation criteria for the Assessment Process

The assessment process is focused on the **scientific merit, trajectory of the researcher and project proposed** and will be based on the following criteria:

CRITERIA 1: Excellence of the professional background (Score: 0-50)

1.1 Research experience: PhD thesis and related work, prior postdoctoral experience, other research or technology development experience. (Score: 0-20).

- 1.2 Scientific production: number and relevance of peer-reviewed articles, conference presentations and proceedings (usual indicators will be used for evaluating this part: number of citations for articles, impact of the Journal or of the publication, position of the applicants in the authors order, etc.). (Score: 0-20).
- 1.3 Personal grants and fellowships, awards and other professional activities (reviewer, chair, etc.). (Score: 0-5).
- 1.4 Teaching and supervision of early-career students. (Score: 0-3).
- 1.5 Participation in dissemination and communication activities. (Score: 0-2).

The criteria used for the evaluation of the curriculum will be weighed and parameterized (e.g., publications per research period, i.e. PhD, Postdoc, rather than total number of publications). This will guarantee avoiding any possible bias against youngest researchers or researchers with career breaks despite the fact that the CV will have a 50% weight in this step.

CRITERIA 2: Excellence of the Statement of Research (Score: 0-40)

- 2.1 Quality, originality, innovative nature of the proposed project, including international, interdisciplinary and intersectoral aspects. (Score: 0-10).
- 2.2 Coherence and feasibility of the research plan. (Score: 0-10).
- 2.3 Impact on enhancing the potential and future career prospects of the researcher. (Score: 0-10).
- 2.4 Techniques/scientific facilities to be used and collaborations. (Score: 0-5).
- 2.5 Scientific, societal and economic impact of expected results. (Score: 0-5).

CRITERIA 3: Letters of Reference (Score: 0-10)

- 3.1 Personal nature of the letter, specific to the project in question, and whether or not it refers to subjective aspects and personal characteristics of the candidate and also to his or her intellectual skills and to the academic or professional project presented. Assessment of the reference letters should consider the suitability and aptness of the person who writes the letter with regard to the candidate's project (Score: 0-10)

The overall threshold for applicants to be ranked for interviews will be 70/100. In case of ex aequo, priority is defined by the score of Criteria 1.

Evaluation criteria for the Interview

This stage emphasizes on the **potential of the applicant** and will be based on the following criteria:

CRITERIA 1: Scientific knowledge and skills in the area of research. (Score: 0-70).

CRITERIA 2: Presentation and communication skills, defence of the project and ability to take part in scientific discussions. (Score: 0-30).

The overall threshold for applicants to advance to the final ranking step will be 70/100. In case of ex aequo, priority is defined by the score of Criteria 1.

Final ranking

The final score will be calculated based on the score of the Assessment Process (weight 60%) and the score of the Interview (weight 40%). The threshold for selection will be 75/100.

PHASE	CRITERIA	SCORE	TOTAL SCORE	THRESHOLD	WEIGHT
1. Eligibility check	CRITERIA 1: Eligibility rules	n/a	n/a	Eligible / not eligible	n/a
	CRITERIA 2: Obligatory documentation				
2. Assessment Process	CRITERIA 1: Excellence of the professional background	0-50	0-100	70	60%
	CRITERIA 2: Excellence of the Statement of Research	0-40			
	CRITERIA 3: Letters of Reference	0-10			
3. Interview	CRITERIA 1: Scientific knowledge and skills in the area of research	0-70	0-100	70	40%
	CRITERIA 2: Presentation and communication skills, defence of the project and ability to take part in scientific discussions.	0-30			
FINAL SCORE = Total score from phase 1 * 60% + Total score from phase 2 * 40%				75	

3.3 Redress

All applicants are entitled to request a redress procedure during the selection process if the applicant believes that a mistake has been made during the selection process that may affect the outcome of the eligibility check or evaluation.

The request for redress must be filed within 5 days upon reception of the results of the eligibility check or the assessment process.

The redress procedure will look at procedural shortcomings and into possible errors, it is not intended to object or to challenge the scientific or technical opinion of adequately qualified experts. All requests for redress will be reviewed within 5 working days.

To request a redress, please fill in the redress form and send it to agent@cragenomics.es

3.4 Documents of interest

The following documents will be available in AGeNT website (<https://www.cofund-agent.eu/documents-of-interest/>):

- Evaluator Guidelines

4 ABOUT US

4.1 CRAG Description

CRAG is an independent and self-managed Center of Excellence created as a consortium by the Spanish National Research Council (CSIC), the Institute of Agrifood Research and Technology (IRTA), the Autonomous University of Barcelona (UAB), and the University of Barcelona (UB), with the global mission of **achieving the highest level of research and technology development and training in the fields of plant sciences and agricultural and farm animal genetics and genomics.**

CRAG conducts leading-edge research in plant development, physiology, stress responses, adaptation, metabolism and genetics; bioinformatics and genomics of plants and farm animals; and

applied projects developed together with Agbio (Agricultural Biotechnology), Biotech, and Breeding companies.

A main scientific mission of CRAG relies on bringing together basic and applied plant and farm animal research, promoting synergies and facilitating translational research. This represents an ideal combination for nurturing and training the next generation of plant and farm animal scientists, which is another of CRAG's goals. In addition, CRAG also strives to communicate its area of research to Society at large and, importantly, to contribute to the public debate on plant research and its applications and implications.

CRAG has been recognized with the **“Severo Ochoa Center of Excellence” award**, the most prestigious programme by the Spanish Government to reward scientific and institutional excellence.

There are 24 research groups integrating 32 research lines at CRAG. The research groups are organized into four different **Scientific Programmes**:

A. Plant Development and Signal Transduction. Genetic and molecular determinants underlying plant development and the signalling pathways and mechanisms connecting the plant life cycle with the changing environment. In the long-term, fundamental knowledge of plant biology is essential for crop improvement and agricultural sustainability.

B. Plant Responses to Stress. Mechanisms involved in plant signalling and responses to biotic and abiotic stresses. The Programme also aims to develop practical applications to boost plant resistance or adaptation to changing and challenging environments.

C. Plant Synthetic Biology and Metabolic Engineering. To understand how plants control their primary and secondary metabolism to respond to environmental cues; and to improve the quality of plant products.

D. Plant and Animal Genomics. To understand the genome organization, variability and evolution of different crops and domestic animals and to elucidate the genetic basis of important traits in species of agricultural interest.

CRAG currently hosts 200 members from across the world, including group leaders, postdoctoral researchers, PhD students, and technical staff. About 50% of both the postdoctoral fellows and the PhD students are from international origin.

For more information about CRAG, please visit our [website](#) and check out the latest [biennial report 2020-2021](#).

5.2 Research facilities

CRAG is located in a **dedicated building at the campus of the Autonomous University of Barcelona (UAB)**, specifically designed for modern plant biology, agricultural and genomics research and that was inaugurated in 2011.

CRAG location at the UAB campus provides it with a privileged access to the academic community, and to university facilities such as libraries, experimental platforms, technical services, and social and sports amenities, that all CRAG members can use.

CRAG hosts several core units or platforms that are tailored to the needs of its different Research Programmes and scientific goals. The facilities include:

- Plant Growth

The Plant Growth Service facilitates the cultivation and growth of plants as well as of plant cells and tissues. For this purpose, CRAG is equipped with confined greenhouses, chambers for plant cultivation in soil and in vitro, and laminar flow cabinets for work under sterile conditions.

- Genomics

The Facility provides a suite of advanced high-throughput technologies for gene expression analysis, genotyping and other molecular genetics assays.

- Genotyping

The service offers marker (mainly SNPs and SSRs or microsatellites) development and application for public research projects as well as private breeding programmes within a broad spectrum of plant species.

- Capillary Sequencing

The service offers the sequencing reaction, purification and analysis; running samples sequenced and purified by the customer; and genotyping (microsatellites, SNaPshot, SNP's, SNPlex, AFLPs).

- Microscopy and Imaging Facility

The Microscopy and Imaging Facility consists of a fully equipped laboratory with advanced instrumentation for optical microscopy and microanalysis, and a laboratory to work with photo documentation, photography and different techniques related to the light detection. The service covers complete processes, from sample preparation and sectioning to observation, as well as the application of immunotechniques and in situ-hybridization techniques. The Service also has a laser microdissection platform that allows recovery of cells or cell groups, selected under microscopic control from complex tissues, for the specific molecular analysis of those cells.

- Bioinformatics

A self-service bioinformatics computing cluster is maintained and available to the research community, and support is provided for software development of tools and data management.

The Molecular Data Analysis Area provides support to apply computational methods to the understanding of novel biological questions.

In addition, CRAG has a formal agreement of sharing scientific platforms with the UAB, and has also access to the technological platforms of other research centers in the area that form part of the Catalan research system (CERCA).