



POLITÉCNICA



**E.T.S. DE INGENIERÍA AGRONÓMICA,
ALIMENTARIA Y DE BIOSISTEMAS**

Título de las prácticas (Title of the internship):

Develop an R package for genomics and phenomics exploration of plant breeding data

Descripción de las funciones del alumno (Description of the student's tasks)

The aim of this project is to develop an R package that will be released in 2021 to help plant breeders to perform an automatized explanatory analysis for genomics and phenomics data. The goal is to develop a pipeline in R that will allow to generate graphics outputs from the raw datasets. A similar package to develop could be DataExplorer in R, but the goal is to optimize and update this version specially for genomic data.

Requisitos (Prerequisites): *(indicar titulación y curso) (give Grade and academic year); otros requisitos adicionales (idiomas, informática, otros conocimientos, etc) (other additional prerequisites (languages, informatics, other knowledge, etc))*

Master student with background on:

- High level of R Programming and computational biology skills.
- Analysis and bioinformatic interpretation of different omics data set
- Statistical modelling
- English is mandatory.

Proyecto formativo (Training Project)

Module External practices. The fundamental goal of the external practices is to guide the student in applying his previously acquired knowledge to real tasks in a group work environment that realistically represents the work conditions the students will encounter in their future roles. In this way, the student will be able to get familiar with a working environment (work schedule, responsibility, attitude, organization, etc), and with the adequate working methodology in professional reality, contrasting and applying the acquired academic knowledge.

Actividades a desarrollar en la práctica académica (Activities that will be performed in the academic internship):

We offer a great research environment and cutting-edge facilities where the student will have the opportunity to develop skills in research skills, bioinformatics and statistics. The activities and functions are already summarized in the student tasks descriptions. The goal of this project is to learn how to apply GS in a current breeding program. There will be a PhD possibility after this period.



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- Read literature (papers, book) about genomic and quantitative genetic studies.
- Data mining of phenomics and genomics datasets.
- Develop an R pipeline for genomic and phenotypic dataset.
- Evaluate the results
- Write the thesis report and release an R package.

Nº de plazas: (Nr. of places)	1
¿El alumno tendrá trato habitual con menores? (Has the student dealings with underage persons?)	No
Fecha de inicio: (Starting date)	The sooner the better but will depend on student availability.
Fecha de fin: (End date)	31-05-2021 can be extended depending on student.
Horas semanales: (Weekly hours)	25
Horario jornada laboral: (Working hours)	To be determined by the student
Importe Ayuda/Bolsa de estudio:	€/mes



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(Amount of fellowship / remuneration)	Option of UPM scholarship
Tutor académico: (Academic tutor (UPM)) Email:	Julio Isidro Sánchez j.isidro@upm.es
Departamento tutor académico: (Dept. of academic tutor)	Biología Vegetal - Biotecnología
Tutor empresa: (External tutor)	Humberto Fanelli
Email tutor empresa: (Email external tutor)	h.fanelli@upm.es
Departamento tutor empresa: (Dept. of external tutor)	Biología Vegetal - Biotecnología
Ubicación de la estancia de las practicas (Location of the internship)	CENTRO DE BIOTECNOLOGÍA Y GENOMICA DE PLANTAS (CBGP)
ENTIDAD COLABORADORA: (Collaborating Entity)	CENTRO DE BIOTECNOLOGÍA Y GENOMICA DE PLANTAS (CBGP)
A cumplimentar por Oficina Prácticas ETSIAAB: Créditos a reconocer (Nº ECTS):	



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Enviar por email a: OFICINA DE PRÁCTICAS ACADÉMICAS EXTERNAS – ETSIAAB
secretaria.pei.etsiaab@upm.es – Secretarias: Visitación Pérez / Susana Pardo - Tfno: 913363686)