



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

## MASTER THESIS OFFER OF CEPLAS (FOR COMPUTATIONAL MASTER STUDENTS FROM TECHNICAL UNIVERSITY OF MADRID, UPM)

### Title of Master Thesis

Strategies to survive stress: Analysis of Transposable Element expression after heat and nutrient deficiency in Arabidopsis plants

### Description of student's tasks

We have generated RNAseq and small RNAseq data from samples of Arabidopsis plants under control, heat and phosphate deficiency conditions. We are looking for a student to study TE behaviour in our study system, by using these data in order to analyse TE expression (activation) and loss of silencing (loss of siRNA accumulation).

The student will set up workflows to analyse TE differential expression in the different samples, will analyse differential TE siRNA accumulation and will study the bibliography in depth to find how our results correlate with previous studies in the field.

### Prerequisites: *(languages, informatics skills, bioinformatic skills, other knowledge, etc)*

Student in the Computational Biology Master

### Training Project

EXTERNAL PRACTICES/MASTER THESIS. 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.

### Activities that will be performed in the academic internship/ Master Thesis:

Workflow design and application to NGS RNAseq and smallRNAseq data in order to analyse TE expression and siRNA accumulation.



POLITÉCNICA



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<b>Nº of positions offered:</b>	<b>1</b>
<b>Has the student dealings with underage persons?</b>	<b>NO</b>
<b>Starting date:</b>	<b>Noviembre 2023</b>
<b>Fecha de fin:</b> <b>(End date)</b>	<b>Junio/Julio 2024</b>
<b>Horas semanales:</b> <b>(Weekly hours)</b>	<b>5-10</b>
<b>Horario jornada laboral:</b> <b>(Working hours)</b>	<b>A convenir</b>
<b>Importe Ayuda/Bolsa de estudio:</b> <b>(Amount of fellowship / remuneration)</b>	<b>€/mes</b>
<b>Tutor académico:</b> <b>(Academic tutor (UPM))</b> Email:	<b>Elena Caro Bernat</b> <b>elena.caro@upm.es</b>
<b>Departamento tutor académico:</b> <b>(Dept. of academic tutor)</b>	<b>Biología Vegetal (ETSIAAB)</b>



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<b>Tutor empresa:</b> <b>(External tutor)</b>	
<b>Email tutor empresa:</b> <b>(Email external tutor)</b>	
<b>Departamento tutor empresa:</b> <b>(Dept. of external tutor)</b>	
<b>Ubicación de la estancia de las practicas</b> <b>(Location of the internship)</b>	
<b>ENTIDAD COLABORADORA:</b> <b>(Collaborating Entity)</b>	
<b>A cumplimentar por Oficina Prácticas ETSIAAB:</b> <b>Créditos a reconocer (Nº ECTS):</b>	