

## INTERNSHIP PROPOSAL

**Institute and Group:** BIG/LPCV/ Floral regulators, group leader: F. Parcy

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**Research project title:** In planta expression and interaction of the “flower-maker” couple LEAFY/UFO

**5 Keywords to describe the project:** flower, reporter lines, patterning, confocal microscopy, FRET

**Description of the project (aims, experimental techniques, recommended background):**

**10 to 15 lines:**

*LEAFY (LFY)* and *UNUSUAL FLORAL ORGANS (UFO)* are master regulators of flower formation : their association even triggers ectopic flower formation from the surface of leaves. We study the molecular process leading to this developmental program – involving transcriptional and/or epigenetic regulation and likely also ubiquitination. LFY and UFO interact in vitro but their interaction was not characterized in planta. This master project aims at characterising this interaction: we will establish reporter lines, image their spatio-temporal expression patterns of both proteins using confocal microscopy and test their in planta interaction by FRET techniques. We will also address the detailed regulation of UFO expression and patterning in the meristem. A background on plant or animal molecular genetics and/or developmental processes is welcome.

**Justification that the internship’s subject fits with the general theme of GRAL (3 lines):**

This M2 internship subject is part of a larger project characterizing the molecular interactions between LFY and UFO and will provides the necessary biological background to have an in planta integrated view of the in vitro characterized molecular interactions.

**Relevant publications of the team (3 max):**

- Chahtane H. et al. (2018) LEAFY activity is post-transcriptionally regulated by BLADE ON PETIOLE2 and CULLIN3 in Arabidopsis. *New Phytologist* **220**:579–592.
- Denay G., Chahtane H., Tichtinsky G., Parcy F. (2016) A flower is born: an update on Arabidopsis floral meristem formation. *Current Opinion in Plant Biology* **35**:15–22.
- Sayou C. et al. (2016) A SAM oligomerization domain shapes the genomic binding landscape of the LEAFY transcription factor. *Nature communications* **7**:11222.