The two sides of fruit development

Dr Beatriz Gonçalves

From leaves to floral organs, plants exhibit a remarkable diversity of organ shapes, which are not only beautiful but reflect the ingenious ways in which they adapt to the environment. The carpel, which is the female reproductive organ of all flowering plants, has a closed structure so that it protects the ovules inside. Despite the significance of this structure for the reproductive success of the plant, the mechanisms that shape the carpel are still a mystery. This project addresses the fundamental mechanisms that regulate shape formation in plant organs and aims to understand if there is a common developmental programme that generates a diversity of organ shapes, from leaves to carpels.

As the student in this project, you will use a reverse genetics approach to investigate whether the genes that pattern shape formation in leaves are conserved in carpel development. This project will provide training and experience in molecular biology and genetic approaches, as well as a range of microscopy skills. This studentship will generate valuable new insights into the molecular processes that underlie plant morphogenesis, and build fundamental knowledge that can help us better understand and engineer seed and fruit production.