A Look at Plant Response to Increased Atmospheric CO₂ Levels by: Nicole Hackman

- Different levels of CO₂ can alter the amount of stomatal pores a plant has;
- I will monitor CO₂ levels in the city of Seattle where I expect to see the highest values (heavily trafficked roads) and the lowest values of CO₂ concentration in the city (such as the arboretum).
- Arabidopsis thaliana seedlings will be placed at these locations exposing them to different CO₂ levels.
- Leaf impressions will allow me to calculate the stomatal density and frequency of the plants.
- Some implications that altered stomatal frequency may have on vegetation include: a change in the plants’ Water Use Efficiency and their heat and water balance which can influence the environment around the plant.

Stomatal cells
Epidermal Cells

Stomata cells (as seen in this leaf impression) are pores located on the top and bottom of leaves where CO₂ molecules enter and oxygen is respired from a leaf.

Water vapor also enters and exits the leaf through these pores.