



Lucas McKinnon, photo by Marianne Hunter

UC Davis DEB Student Spotlight on Lucas McKinnon (Theg lab)

The UC Davis Designated Emphasis in Biotechnology (DEB) program would like to thank DEB student Lucas McKinnon (Plant Biology graduate group) and his DEB mentor, Professor Steven Theg, for graciously agreeing to a photo shoot in their lab. See below for a description of Lucas' current research project.

Lucas McKinnon's Bio/Research

"My research has been focused on understanding the function of disulfide bonds in proteins in a particular sub-compartment of chloroplasts called the thylakoid lumen which is the site of oxygen evolution during photosynthesis. Classically, disulfide bonds have been viewed as stabilizing the structure of proteins amidst changes in their molecular environment and hence are quite common in extracellular proteins. Disulfide bonds are also known to allosterically regulate the activity of enzymes or can be directly involved in the catalytic mechanism of an enzyme. A

significant proportion of the proteins found in the thylakoid lumen possess disulfide bonds, but the specific role of these bonds is in most cases unknown. Furthermore, these disulfide bonds are in some cases found in homologous proteins across all known oxygenic photosynthetic organisms and are in other cases restricted to more specific groups of photosynthetic organisms. I have studied a specific thylakoid protein to (1) Understand the function of its disulfide bond and (2) Gain some insight into why there is variability in the conservation of disulfide bonds in this compartment of chloroplasts.

When I am not doing research, I enjoy spending time with my wife and two young kids, hiking, watching movies, and playing guitar."

Stay tuned for the next DEB student in the spotlight post!

If you are a DEB student and would like a photo shoot in your lab, feel free to contact me to set one up!

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