Biol 480/481 – Molecular genetics of light stress

My research program uses molecular genetics to study how plant cells communicate. Plants exposed to high light suffer damage similar to sunburn. Excess light leads to reactive oxygen compounds (oxygen radicals) that damage lipids and proteins in the cell. In the lab, we use green algae as a simple plant model to look at how metabolic changes in the chloroplast result in signals sent to the nucleus to regulate gene expression. We identified a mutant algal strain with a diminished signaling capacity. One project available will characterize the mutant by measuring growth rates, gene expression, and subcellular localization of proteins using fluorescent microscopy. The student will have the opportunity to learn and use techniques such as: PCR, immunoblotting, and fluorescence microscopy. No experience in these techniques is expected, but interest in biochemistry and genetics would be a great starting point.

I am willing to supervise students in Biol 479, 480, or 481 classes. I am open to discussing other topics within this theme. Contact me for more details (ken.wilson@usask.ca)