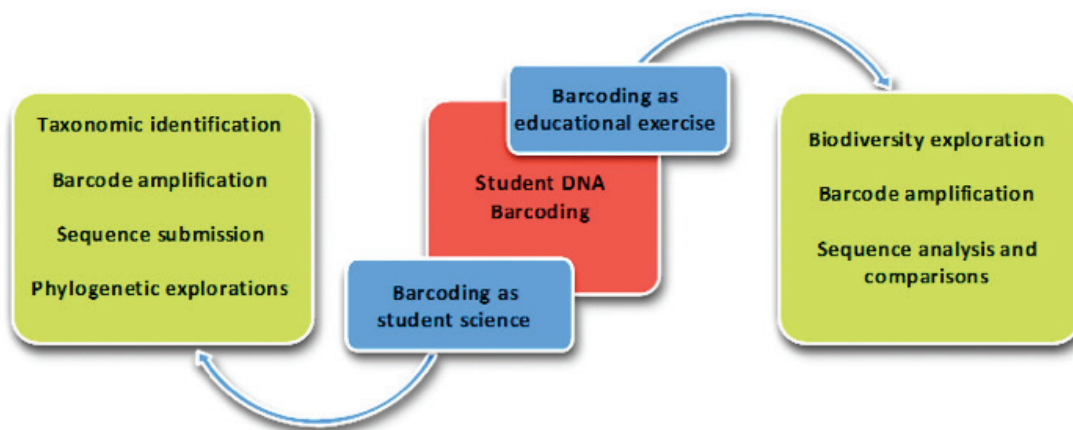


# iPlant Education, Outreach, and Training: Chloroplast Gene Sequencing



This project complements the Plant Tree of Life Grand Challenge project by providing cyberinfrastructure support for college and advanced high school students participating in plant DNA barcoding research. A streamlined workflow will allow students to identify and classify plants for which they have sequenced short, standardized DNA barcoding regions -- such as the *rbcL* and *matK* genes. Finished sequence data will be posted to an iPlant website that provides tools to gauge sequence quality and visualize trace files. Students will use their sequences as a starting point in a study of plant phylogenetics or diversity using alignment and tree-drawing tools on the *DNA Subway*. Validated data can be readily submitted to research databases, such as the **Barcode of Life Database** at the University of Guelph.



## Selected Project Objectives

- Students analyze barcode regions from known species as an educational exercise, or identify species unrepresented in barcode databases for potential novel submissions.
- Introduce students and teachers to Plant Tree of Life Discovery Environments, transitioning them to advanced projects.
- Analysis of whole chloroplast genome sequence data gene from high throughput methods will provide an advanced option, which will integrate with the Genotype to Phenotype project and the next generation sequencing line of *DNA Subway*.

Have ideas? Interested in collaboration on this project? Contact Jason Williams: [williams@cshl.edu](mailto:williams@cshl.edu)

