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A Transposon Mutagenesis Screen for Heterocyst Production in a *ΔHETP* Strain of the Cyanobacterium *Anabaena*

Rachel Ende
Illinois Wesleyan University

Loralyn Cozy, Faculty Advisor
Illinois Wesleyan University

Poster Presentation P17

A TRANSPOSON MUTAGENESIS SCREEN FOR HETEROCYST PRODUCTION IN A Δ*HETP* STRAIN OF THE CYANOBACTERIUM *ANABAENA*

Rachel Ende and Loralyn Cozy*
Biology Department, Illinois Wesleyan University

The ability for organisms to genetically control cellular differentiation is a fundamental question of development. The multicellular cyanobacterium *Anabaena* maintains the ability for vegetative cells to differentiate into specialized heterocysts capable of nitrogen fixation. The genetic network responsible for initiating and regulating this differentiation is not fully understood. To identify genes within this differentiation network, a heterocysts deficient mutant of *Anabaena* was subjected to transposon mutagenesis. A transposon, a piece of DNA capable of random insertion into the genome was introduced into this heterocysts deficient strain. Following the introduction of the transposon, the cells were grown on nitrogen-limited media containing antibiotic to select for cells in which the transposon had inserted into the genome and restored heterocyst function. These colonies were then analyzed with light microscopy to characterize the amount and pattern of heterocysts development and inverse PCR was performed to identify the specific location of transposon insertion within the genome. The genes identified through this screen will be the subject of future research.