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Restoration of Heterocyst Production to a Δ HETP Strain of *Anabaena*

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Poster Presentation P33

**RESTORATION OF HETEROCYST PRODUCTION TO
A Δ HETP STRAIN OF ANABAENA**

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Anabaena sp. Strain PCC 7120 is a filamentous cyanobacterium capable of differentiating a nitrogen-fixating cell type called a heterocyst. The *hetP* gene has been identified as being required for the normal magnitude and timing of heterocyst formation. Where as a wild type strain produces 10% heterocysts in 23 hours, a Δ *hetP* strains produces only 2-3% heterocysts in 48 hours. How the loss of *hetP* leads to this phenotype is currently unknown. To identify genes downstream of *hetP* in the differentiation pathway that could be aiding in its function during heterocyst formation we performed a forward genetic screen. A Tn5 transposon was introduced via conjugation into a Δ *hetP* strain and plated on nitrogen deficient media with selection. Surviving colonies were assayed for restoration of wild-type heterocyst accumulation and timing of development. The DNA of these strains was isolated and the transposon location was identified. We demonstrated a class of genes whose inactivation is capable of restoring wild-type heterocyst formation in the absence of *hetP*. Future work will examine the function of these genes in relation to *hetP*.