

FYRE First Year Research Experience

Yoshi Tomoyasu is looking for First Year students to become part of his research projects through the new FYRE program.

To apply, e-mail Martha Weber at weberme@muohio.edu

YOSHI TOMOYASU
ASSISTANT PROFESSOR
ZOOLOGY
tomoyay@muohio.edu

513-529-3126
252 Pearson Hall



Zoology Research - Genetics and Molecular Biology

More information about ongoing projects on Yoshi's web site
<http://web.me.com/tomoyasu/lab/home.html>

What is the best way to know the function of a gene?

The answer is to observe the effect when the gene is removed. That is why disrupting gene function is such a powerful technique in biological studies. Students will learn basic molecular biology techniques such as PCR, DNA purification, RNA synthesis, and also beetle manipulation.

Available FYRE Project

Establishing an alternative gene disruption method in a beetle *Tribolium*

Establishing a gene disruption method often requires complex genetic manipulation tools, and therefore applicable only on several highly established model organisms such as fruit flies and mice. We have established an injection-based method for gene disruption in a beetle *Tribolium* (see pictures).

This is a simple convenient method, however, it is still time consuming to apply to a large scale analysis. In this project, we will seek alternative means of gene knock down in a beetle *Tribolium* (such as via soaking or feeding). Establishing a new method will impact many fields in biology, including cell biology, medical science, agriculture, and pest management.

Looking forward to your participation!!

Yoshi Tomoyasu



Wild-type (above), and gene-disrupted beetles which have abnormal number/identity of wings.