

RESEARCH ABSTRACT

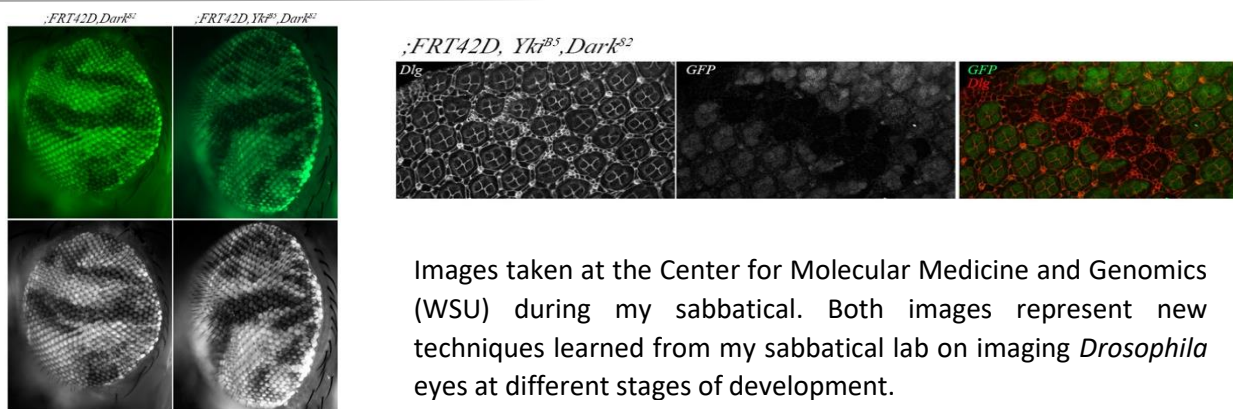
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College/School	Engineering and Science
Leave Semester(s) and Year (e.g. F2018, W2019)	W2020
Report Date	F2020

Description of role of Yki in eye development

We are using the model system *Drosophila melanogaster* (fruit fly) to study genetic and developmental changes associated with the gene *Yorkie* (*Yki*). *Yki* is a well conserved transcriptional co-activator and the human homology, *YAP-1*, is up-regulated in a large number of human tumors. Our understanding of how this gene can accomplish different developmental tasks can help us better understand how changes in *YAP-1* expression can lead to tumor development. Currently, we have identified a key role in cell-survival for *Yki* during the early stages of fly eye development. Continual experiments are being conducted to *Yki*'s role at later stages during eye development.

Description of Fly-CURE project

I designed the Genetics Laboratory (BIO2710) at the University of Detroit Mercy in 2012 as a Course-based Undergraduate Research Experience (CURE) in which students participate in the mapping and characterization of novel *Drosophila* mutants. This project was a great success in the classroom as measured both by student reviews of the course, but also the data generated by students in the class. In 2014, I began to expand this project to other institutions and by 2020 we had expanded to seven schools across the country. Our group has mapped a large number of mutants and published articles with 134 student co-authors. The NSF IUSE proposal will allow us to both expand our project (to 20 institutions) but also design and test an assessment tool to measure the gains of students who take this course.



Images taken at the Center for Molecular Medicine and Genomics (WSU) during my sabbatical. Both images represent new techniques learned from my sabbatical lab on imaging *Drosophila* eyes at different stages of development.

Article describing the NSF grant awarded:

<https://sites.udmercy.edu/campusconnection/2020/10/06/nsf-grant-opens-detroit-mercy-research-to-nations-students/>