

Introducing First-Year Undergraduates to Research through A First-Year Orientation Camp for Undergraduate Sciences (IFocus) and a Genomics Learning Community

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iFOCUS is a one-week science camp aimed toward fostering an interdisciplinary science community of students and faculty at Linfield College, by engaging a group of students in research projects across the disciplines of biology, chemistry, math, physics, and education. One project was designed to have students explore the relationship between observable traits, genes, and chromosomes through a bona fide novel gene-mapping project using *Drosophila melanogaster*. Students were charged with contributing to the identification of a novel gene required for microRNA-mediated gene silencing. Students worked independently to identify traits in *Drosophila* observable by light microscopy, and subsequently performed fly matings and progeny analysis to determine the nature of the genetic interaction between a chromosomal deficiency and a mutation of interest. Interested students returned to the lab once the semester began to identify the genomic region containing the mutation of interest based on their data collection and complementation analysis. Student learning gains were measured by pre- and post-project assessment indicating attainment of learning objectives. Data generated by iFOCUS students directed the course of independent research projects throughout the year. iFOCUS students' interest in genome analysis led to the creation of a student-led freshman Genomics Learning Community that recruited additional Linfield freshman to analyze raw sequence data to identify a mutation that leads to defective gene silencing in *Drosophila melanogaster*.

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