

The 2023 Discover Now Teacher Academy

General information

The Discover Now Teacher Academies 2020-2022 were a huge success. We will be having the 2023 academy and the dates will be announced in the near future. Visit Stan-X.org and contact Stan-X director Seung Kim, for more information.

Interested applicants should be secondary school teachers interested in developing an experience-based biology course. In the interim, or for more information, please contact the Discover Now team if you are interested. Space is limited.

Instruction

Discover Now integrates the theory and practice of experimental genetics. Lectures and seminars from instructors of the Stan-X and Discover Now team cover relevant elements of fruit fly biology and husbandry, molecular and cell biology, and histology. These didactic sessions are integrated with hands-on laboratory sections that cover the following elements:

Hands-on genetics: Handling, maintenance and husbandry of flies, visible genetic markers, setting up and scaling fly crosses, Mendelian genetics and selecting the desired offspring, the two-component expression systems Gal4/UAS and LexA-lexAop, transposable element biology, a up-to-date Crisper-Cas9 method of converting Gal4 lines into LexA drivers (hacking of Gal4 lines), and expression analysis of Gal4 and LexA drivers.

Molecular Biology: Basics of PCR and in-silico mapping of transposon insertion sites to the Drosophila genome using bioinformatics.

Tissue immunohistology and microscopy: Principles of fluorescence,

introduction to fluorophores, overview to immuno-histochemistry, primer on fluorescent microscope imaging and image analysis, introduction to the Drosophila larval and adult body plan.

These lab-based sections cover the experimental foundations of the current Stan-X curriculum. Teachers currently using Stan-X curricula will share their experiences, including implementing and running the course at their schools.

Course implementation and coaching

We will devote time to develop an individualized course development program for each participant. As before, Discover Now team members will work with each participant to understand the goals and challenges for implementing experience-based science instruction at the participant's school. Participants will receive course syllabi, course plans, student evaluation materials (problem sets, sample exam questions, original manuscripts for student discussions, instructional videos) and more. The Discover Now team and network will also provide weekly term-time mentoring to instructors who establish courses at their school.