

JULES STEIN EYE INSTITUTE

NATIONAL EYE INSTITUTE VISION SCIENCE TRAINING GRANT TRAINING PROGRAM CURRICULUM

COURSES

Introductory Course

Predocutorial and postdoctoral fellows entering the Jules Stein Eye Institute's vision science training program are expected to take the course *Fundamentals of Vision Research*, which is taught by the Institute's basic science faculty. Topics covered include: anatomy of the eye, structure and function of rhodopsin, structural proteins of the outer segment, phototransduction, photoreceptor metabolism, photoreceptor-RPE interactions, physiology of light perception, retinal development, regulator of photoreceptor genes, mechanism of retinal degeneration, ocular gene-replacement therapy, and use of stem cells in retinal disease. This course provides incoming trainees with an overview of basic vision science and an understanding of the important questions in vision research.

Fundamentals of Clinical Ophthalmology

Another course offering is the clinically-oriented *Fundamentals of Clinical Ophthalmology*. This two-day course, taught by the Institute's clinical faculty, provides training program fellows with basic knowledge of clinical ophthalmology, including descriptions of major ophthalmic diseases, illustrations of significant ophthalmic findings, and actual examination experience. The course helps put basic research into an ophthalmologic disease perspective, and stimulates collaboration between scientists and clinicians.

SEMINARS

Seminar Series

This series involves weekly seminar presentations by invited vision scientists from other institutions or from the Jules Stein Eye Institute. After the seminar, the fellows are invited to join the seminar speaker for lunch.

Annual JSEI Clinical and Research Seminar

The Institute hosts an annual, two-day seminar on basic and clinical research. Vision scientists and ophthalmologist researchers from around the country attend the seminar. The Institute's training program fellows are invited to attend. Generally, one fellow from each basic science laboratory presents his or her work to this distinguished assembly of scientists.

RESEARCH AND TRAINING ACTIVITIES

Journal Club

Training program fellows are encouraged to participate in the journal club, which meets every other week on Wednesday afternoons. Students, postdoctoral fellows, and faculty members are placed on a rotating schedule. The presenter selects a recent paper in any area of vision science and distributes it to the other journal club members. Everyone is expected to read the paper. Using PowerPoint slides, the presenter goes through the figures, and all members contribute to the critical discussion. Nearly half of the journal club participants are faculty members. Journal club meetings are an opportunity for impromptu teaching, and faculty members ensure that the discussions are at a high scientific level.

Annual Vision Science Retreat

The Institute's annual Vision Science Retreat at Lake Arrowhead is an opportunity for students, postdoctoral fellows, and faculty members to interact informally in a beautiful setting. Training program fellows are required to attend this two-and-a-half-day retreat. Every training program fellow in has the opportunity to present a talk or a poster on his or her research. Selected faculty members present overview talks about ongoing research in their laboratories, and an outside keynote speaker is invited each year to present a seminar. The program also includes a scientific ethics session.

Stem Cell Works-in-Progress Meeting

A team of vision scientists at the Institute is involved in a collaborative project to develop a stem-cell based RPE transplantation strategy for treating macular degeneration. This team was awarded a translational grant from the California Institute of Regenerative Medicine. Monthly works-in-progress meetings include training program fellows from the five participating laboratories. These meetings are open to fellows from all training program laboratories with an interest in ocular applications of stem cell technology.