

Department of Cell and Developmental Biology (<http://www.med.umich.edu/cdb>)

CDB is currently undergoing a period of tremendous growth. Outstanding new faculty have been recruited by the new chair of the department, Dr. James Douglas Engel, and are already contributing exciting new research directions to the present excellent faculty base. Upon completion of the new Biomedical Science Research Building, our entire department will move into this state-of-the-art research facility. CDB has close ties with the Center for Organogenesis - with over 100 members representing five schools and colleges, the Center promotes interdisciplinary collaborations analyzing organ development, disease and stem cell therapies.

The Faculty and their Research

CDB faculty are actively engaged in two broad areas of research:

- **Cell biology:** Molecular, biochemical and cell imaging approaches to elucidate fundamental biological and chemical properties of cells.
- **Developmental biology/organogenesis:** Studies focus on development and disease of organs and tissues; model systems include stem cells, cell lines and multiple animal models (humans, mice, rats, zebrafish, *Drosophila*, chick and quail).

The genome projects offer profound new insights into all aspects of biology, and have revealed new and exciting possibilities for the understanding of gene function. Over half of the genes in the human genome function in development. Many of these same genes are, in mutant form, responsible for diseases. Discerning the normal function of these genes and their mutant contribution to human pathology requires fundamental training in cell and developmental biology, such as that offered by this program. Moreover, the current national emphasis on stem cell research holds great promise for gene therapy, tissue and organ repair. Cell and Developmental Biology is one of the major areas being emphasized as the University continues to build in the Life Sciences.

CDB Graduate Students

Graduate students are a vital part of CDB. Many CDB students have won Graduate Student Awards for teaching, research and service. The students organize and participate in CDB801, a noon seminar at which students share lunch and science. In addition, the annual CDB retreat provides an opportunity to combine science, food and fun with people who share professional interests. Graduate students serve on Departmental committees, aid in graduate and faculty recruitment, and contribute to our exciting research environment in many other ways. Each student receives \$1000 to present his/her work at a national meeting in one of the last 2 years of the student's program.

Program Requirements

Courses - The core PIBS curriculum plus two departmental courses (organogenesis, developmental biology, histology, neuroanatomy or stem cell biology).

Teaching - One semester required.

Rotations – Participation in a minimum of 3 rotations, at least one in CDB, in the first year. Under the new rotation policy (2003) students may do up to 6 half term rotations.

Thesis - Students choose a thesis lab by their second year. The average time to complete a degree in CDB is 5.5 years.

Preliminary Exam - The written and oral prelim, taken in the second year on a topic of the student's choice, consists of a shortened NIH grant application which is defended before the graduate committee.

Average time to complete a degree is 5 years.