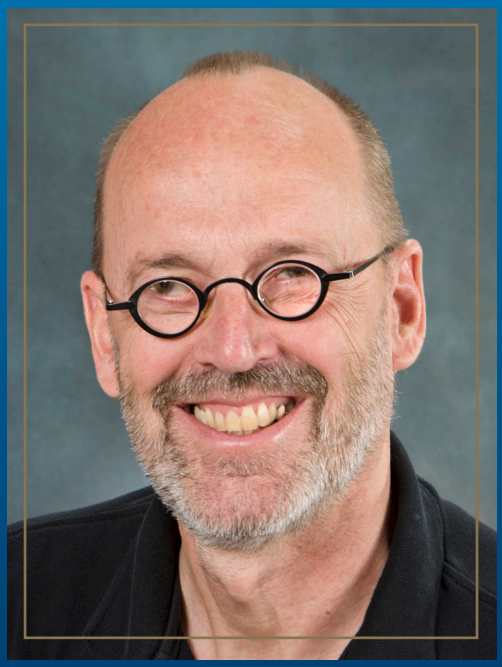
Meet the Scientist

Discovering What Causes Aging and Diseases Like Cancer



Dirk Bohmann, Ph.D.

Professor of Biomedical Genetics

There are still a lot of "big questions" left to answer in biomedical research: Why and how do we age? Why and how can cells in the body suddenly decide to leave their place and start to move around as cancer cells? How does the vast information stored in the genome instruct the development and function of organisms including humans? How are mistakes in this information flow related to disease? What happens when such control becomes flawed or imprecise? To Dr. Dirk Bohmann, finding answers to these questions is not just an intellectually thrilling challenge.

Successfully tackling such longstanding questions is not easy. For example, to understand how a rogue gene that has been associated with cancer cells invades healthy tissues, Dr. Bohmann chose to investigate the function of a very similar gene in the fruit fly, Drosophila. Much of Drosophila's basic genetic structure is similar enough to human's, and so easy to work with, that scientists have made innumerable medical advances based on fruit fly experiments. It is just much easier to look at what's happening "under the hood" in the case of the fly. By taking the detour to such simple "model organisms" Dr. Bohmann and his coworkers identified ways to stop or control malignant cell movements. These discoveries are now the basis for experiments in collaboration with colleagues in the Wilmot Cancer Institute to explore their potential therapeutic utility.

> ***"Once you identify an important problem, you tackle it with all you have."***

"This is just one example of how biomedical research is done at the University of Rochester," Dr. Bohmann points out. "Once you identify an important problem, you tackle it with all you have. You choose the best combination of strategies to get the answer, whether that involves biochemistry, computers, patient samples or, well, fruit flies. The broad range of expertise among the faculty and the collegial, collaborative atmosphere are conducive to this productive and exciting style of research."