Karl Friedrich Bonhoeffer Lecture

Dienstag, den 19.06.2007 - 17:00 Uhr
Manfred-Eigen-Hörsaal
Max-Planck-Institut
für biophysikalische Chemie

Am Fassberg 11, 37077 Göttingen

"Fluorescent Probes for Imaging"

Alan Waggoner is distinguished by his research on the development of fluorescence based detection systems for biology and biotechnology, which have played a central role in advancing research across the world. The cyanine dye fluorescent labeling reagents developed in Waggoner's laboratory have become widely used in industry and academic research for multicolor analysis of proteins, nucleic acids, cells and tissues with imaging microscopes and flow cytometers. Recently, Waggoner's group developed new fluorescent markers to detect fundamental components of life (DNA, carbohydrates, lipids and proteins). These markers have been integrated into a transportable unit for remote use in harsh environments, such as space. He is presently the Principle Investigator on one of the five NIH Technology Centers for Networks and Pathways. The goal of the NIH Center is to develop fluorescent biosensors, imaging and informatics tools to help understand the detailed regulatory mechanisms of the 20,000 or so proteins that control cell health and function.
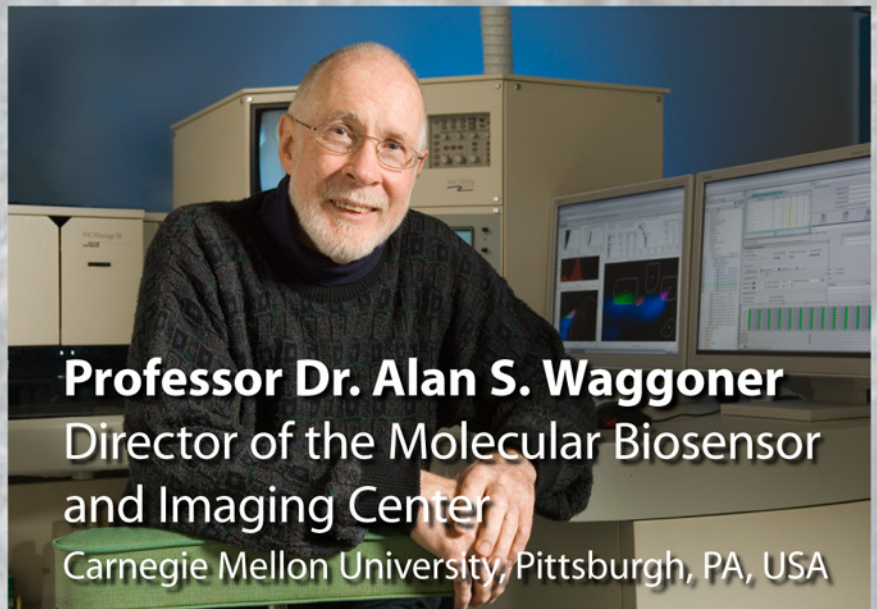
Professor Dr. Alan S. Waggoner
Director of the Molecular Biosensor and Imaging Center
Carnegie Mellon University, Pittsburgh, PA, USA

The lecture will cover new fluorescent probe technologies for obtaining molecular and structural information from living cells and tissues. This will include recent developments in organic fluorophores for targeting disease *in vivo* in mice. Concepts for creating fluorescent biosensors that can monitor cellular networks and pathways will be presented with examples. A new class of these probes called FLAPs (fluorogenic activating proteins), when expressed transgenically on the cell surface, bind their cognate fluorogenic compounds with nanomolar affinities and fluorescent enhancements of 10^3–10^4. The talk will also demonstrate the integration of fluorescence detection technologies and microscope imaging methods for reading out signals from the fluorescent probes within the cells and tissues.

Gastgeber: Dr. Thomas Jovin