

The 15th Aline U. and James M. Orten Memorial Lecture

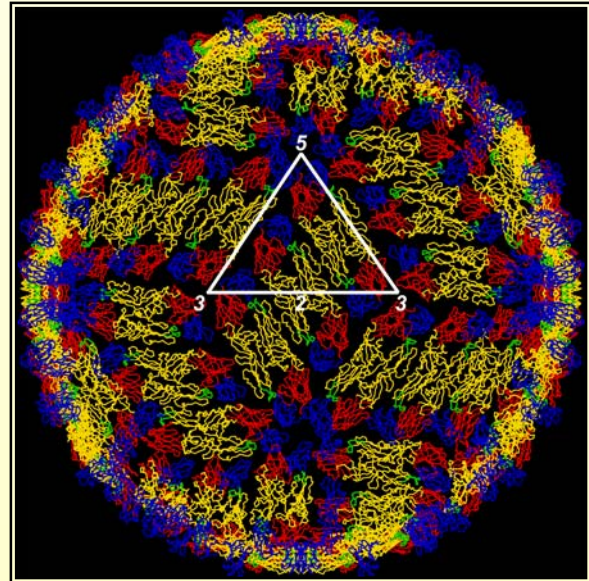


Michael G. Rossmann, Ph.D.

Hanley Distinguished Professor
Department of Biological Sciences
Purdue University

Structure and function of Dengue virus and other Flaviviruses

Crystal structure of the dengue virus, the cause of hemorrhagic fever. This is the first structure of the immature dengue virus, which is related to other Flaviviruses such as yellow fever, St. Louis, Japanese and West Nile virus. Dengue is a mosquito-borne pathogen that kills more than 24,000 people in the world annually. A high-quality image of a virus still forming in its cellular host is a significant step toward unraveling the behavior of viruses and sheds light on how viruses reproduce, knowledge important to the development of new antiviral drugs and vaccines.



Tuesday, February 12, 2008

Noon

Room 2268 Scott Hall

About Professor Rossmann:

Michael G. Rossmann, born in Frankfurt, Germany, is an American biophysicist and virologist who led a team of researchers to solve the structure of the human cold virus at atomic resolution. Professor Rossmann received B.Sc. (Hon) in Math and Physics from the University of London, and Ph.D. in Chemical Crystallography from the University of Glasgow, following which he was a postdoctoral fellow with William Lipscomb at the University of Minnesota. He returned to England and worked with Max Perutz on the crystal structure of hemoglobin at the MRC Laboratory of Molecular Biology in Cambridge. Dr. Rossmann went to Purdue University where he is currently in his 25th year as Hanley Distinguished Professor of Biological Sciences. In 1973 Rossmann published the description of a nucleotide binding motif found in enzymes such as dehydrogenases or kinases that bind molecules such as adenosine triphosphate or nicotinamide adenine dinucleotide. This has been named the Rossmann fold after its discoverer. In 1985, he published the first crystal structure of the common human cold virus in the journal *Nature*. In a press conference, the National Science Foundation called this a breakthrough for human health and disease. Professor Rossmann's group solved the crystal structure of the cell's receptor that binds the cold virus. This greater understanding of how cold viruses enter cells led to the development of a drug called pleconaril that shortens the duration of disease symptoms. Among his various honors, Michael Rossmann was elected Fellow of the American Academy of Arts and Sciences in 1978, a Member of the National Academy of Sciences in 1984, Foreign Member of the Royal Society of London in 1996, and Fellow of the American Association for the Advancement of Science in 1999. He was awarded honorary doctorates by the University of Uppsala, Sweden; the University of Strasbourg, France; Vrije Universiteit Brussel, Belgium; University of Glasgow, Scotland; University of York, England; Institute Armand-Frappier, University of Québec, Canada. He was awarded the Purdue University Medal of Honor in 1995.

The Orten Lectureship:

Dr. James M. Orten was a respected faculty member in the Department of Biochemistry from 1937 until his retirement in 1975, when he continued as Professor Emeritus of Biochemistry until his death on March 2, 1991. He was an excellent teacher and was popular among students. He was well known for his text books in biochemistry and for his research in the areas of porphyrin-heme biosynthesis, nutrition and intermediary metabolism. For his contributions, Dr. Orten was elected a Fellow of the American Institute of Nutrition. Dr. Aline U. Orten received her Ph.D. in biochemistry from Yale University in 1937 and came to the Wayne State University School of Medicine later that year as an instructor of physiological chemistry. Over the next half-century, the Ortens served as dedicated members of the Wayne State community.

The James M. Orten Memorial Fund was established through the generous donations of Dr. Aline U. Orten, as well as friends of the Ortens. The fund was created to benefit graduate and postdoctoral students in the Department of Biochemistry and Molecular Biology. It allows the graduate students and postdoctoral associates to invite a renowned researcher in the field of biochemistry and molecular biology to present the James M. Orten Lecture. In addition it gives them an opportunity to meet with and interact personally with an internationally renowned scientist. Upon her death on February 16, 2000, the fund was renamed the Aline U. and James M. Orten Memorial Lecture to honor both Drs. Orten.