

Biography of Klaus Arnold

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Received: 12 December 2006 / Accepted: 18 December 2006 / Published online: 31 January 2007
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Klaus Arnold was born in 1942 in Preussnitz, Saxony-Anhalt, Germany. He obtained his academic education at the Department of Physics, University of Leipzig, Germany, from where he graduated with a Diploma in Physics in 1965. He continued his training

at the institute and obtained his PhD in Physics in 1969. His advisors were Prof. Arthur Lösche and Gotthard Klose.

In 1971, Klaus Arnold and Horst Frischleder, under the leadership of Gotthard Klose, founded the research program “Bio- and Model Membranes” at the Department of Physics in Leipzig. The affiliated researchers conducted experiments in the field of membrane biophysics and educated scores of aspiring graduate and undergraduate students.

In 1978, Klaus Arnold successfully defended his Habilitationsschrift in Leipzig and shortly thereafter was appointed as Docent for Molecular Biophysics at the Department of Biology of Berlin’s Humboldt University. During that time he became deeply interested in complex biological events, in particular in cell–cell, and virus–cell fusion.

Four years later he returned to Leipzig and in 1984 took the helm of the Institute of Biophysics (in 1993 renamed into Institute of Medical Physics and Biophysics) at the Department of Medicine of his Alma Mater. Under his leadership the research programs “Structural Studies on Serum Lipoproteins”, “Free Radical Detection by Chemo-luminescence in Stimulated Neutrophil Granulocytes”, and “In vivo NMR Spectroscopy” were launched. His sabbaticals he spent at the Second Medical Institute of Moscow, Russia and the Department of Biophysical Sciences, Medical School, State University of New York at Buffalo, USA.

In 1988, Klaus Arnold became an elected member of the Saxonian Academy of Science. He provided steady leadership to his institute at times of political change in East Germany in 1989. After German unification, work at his institute received generous funding from federal sources, the interdisciplinary Research Programs

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“Molecular Interactions at Interfaces”, “Lipid Organization, Lipid-Protein Interactions”, and “Chemical Signals–Biological Response”. He served as Vice-Dean of the Department of Medicine from 1997 to 2002, and was member of numerous committees.

The research of Klaus Arnold has been guided by experimental and theoretical rigor, through his early education in physics, and by his desire to achieve high levels of biological relevance, based on his exposure to biology and medicine in later years. In the 1970s and early 1980s his interest was focused on the properties of the lipid–water interface, in particular on interaction of ions and water with the lipid headgroup region, investigated by solid-state NMR methods. A fruitful collaboration existed with the groups of Horst Frischleder at the Physics Department who investigated this interface region by quantum chemistry and molecular simulations and the group of Peter Nuhn at the Department of Pharmacy at the University of Halle who synthesized bioactive lipids. This project expanded

later into studies on the role of cations and polyethylene glycols in cell fusion, which received international attention. In the 1990s, Klaus Arnold started to study biological tissues, in particular cartilage structure, dynamics, and degradation. This federally funded program became central to the work of his institute. In recent years he expanded into the field of lipidomics—conducting analytical studies on lipid composition of tissues by mass spectrometry.

Klaus Arnold is author/coauthor of more than 250 scientific papers and reviews and has given countless talks and invited seminars. He has been an advisor to a very large number of PhD and MD students, is known by literally thousands of students for his well prepared lectures, and has collaborated with researchers from all over the world during his career. This special issue contains papers that his current/previous collaborators and students have dedicated to him on the occasion of his 65th birthday, Mai 19, 2007. He intends to retire in September 2007.