

# Prof. Dr.-Ing. Helmut “Paul” Reul

\* 03.12.1942

† 03.11.2004



After a brief illness Prof. Helmut Reul passed away on Wednesday, November 3, 2004

After studying Mechanical Engineering at the RWTH Aachen University, Germany, Prof. Reul completed his dissertation in 1971 at the Institute of Pathology and the Institute of Aerodynamics in the area of circulatory mock loops. Since then, he was Head of the working/research group Cardiovascular Engineering at the Helmholtz-Institute for Biomedical Engineering, which was founded in 1971. His outstanding achievements were recognised with the granting of an honorary professorship from the FH Aachen University of Applied Sciences in 1986 and in 2004 with an honorary professorship from the RWTH Aachen University.

Initially, his research focussed on the development and evaluation of prosthetic heart valves. In the 1970s and 1980s procedures and special circulatory mock loops and fatigue testers were developed under his guidance. These continue to be used worldwide to investigate and optimise the properties of various heart valve types. The insight that could be obtained with these mock loops led, among others things, to the development of an innovative 3-leaflet heart valve prosthesis made of polyurethane. This valve combines the advantages of mechanical and biological heart valve prosthesis. Additionally, Prof. Reul was involved in the development of various other types of mechanical heart valves.

From early on, Prof. Reul also took up research in the field of artificial circulatory assist devices. Besides a pneumatic driven external assist device, the Aachen Total Artificial Heart was also developed in his group. At that time, novel fabrication procedures using plastics were being introduced to the biomedical field. In the 1990s, he and his co-workers shifted their focus towards the development of rotary blood pumps. All aspects of rotary pumps have been investigated at the Helmholtz-Institute, from external radial flow pumps and mixed flow pumps to implantable miniature axial flow pumps. His research in the field of flow-induced blood damage is highly reputed worldwide. In the more recent years, Prof. Reul extended his research area at the Cardiovascular Engineering Group to include extra- and intracorporal blood oxygenation.

It was always very important to Prof. Reul to utilise up-to-date and novel technologies for his research. He shared his expertise freely with researchers within the University and throughout the world. He skilfully kept the balance between applied product development and basic research. His research work is reflected in more than 150 publications and about 30 national and international patents. He contributed to numerous textbook publications and conferences. Various research activities at the Helmholtz-Institute have resulted in start-up companies, where several new products have been introduced to the Medical Device market, while the development of prototypes continues.

Besides his research, he was very committed to the education of students. He supervised 28 doctoral theses and numerous student and diploma theses. Several co-workers won awards and recognition due his guidance during their scientific research. On the basis of his contacts worldwide, he was able to facilitate international student exchanges and industrial placements. From throughout Europe and overseas, colleagues and post-doctoral students came to participate in joint projects and for external education.

In discussions, he was valued for his cooperative manners. With his engineering background, he was capable of assessing many ideas without being judgemental. He shared his expertise or asked for advice at any time. At congresses, he was welcome for his scientific contributions at daytime and joyful entertainment at night.

In memory of our shared path through life, we look back gratefully. We will all miss his amicable and optimistic nature. His ever present willingness to support each colleague has been a shining example for us. We will all miss his constructive and motivating encouragement. With respect, thankfulness and deep sympathy for his family we wish him, 'Farewell'.

The Members of the Helmholtz-Institute  
for Biomedical Engineering

Univ.-Prof. Dr. rer. nat. Günter Rau  
Director of the Helmholtz-Institute  
for Biomedical Engineering

## We miss our very dear group leader

After a brief illness, Paul passed away on Wednesday, November 3, 2004. This happened so quickly that we still haven't quite realised that he is gone. There is so much we can say about his professional life, but we only want to talk about working with and for him.

Paul always gathered a group of young students around him and helped them grow to become good researchers. We all benefited from his integrative way of working and living. His hands-off style always gave us lots of freedom regarding how we conducted our work, but in spite of our mistakes he never failed to wholeheartedly back us. With his great experience, he helped us to solve our problems in his characteristic, well-known direct and spontaneous way. He started out with a big smile, gave us a smart expression and lit a cigarette. Then he leaned back in his chair, increasing the suspense, before he gave us a short "three-word" answer or named a person to call. Sometimes, he sketched up a new concept, always starting out with a centreline: "In the beginning, there is a centreline ...". Usually, the conversation ended in a "Do it!".

When he was convinced of a project, he could not be stopped. There were neither "No's" nor "Maybe's", he always found ways to follow up an idea. Even in rougher times (funding issues, deadlines, etc.) his calmness and optimism gave us the grounds to move on with our research. Paul's leadership was joyful and comradely. He even apologised when he had to leave at 5 pm for a tennis match he couldn't miss---obviously we did not object.

Every year, Paul gathered the group at his house for the famous 'Kaminabend' (Christmas party). He stood behind his bar ordering us to 'compare' his different whiskeys, while telling us his best stories.

Paul gave us warmth and friendship. He set an example on how to interact with people and to establish a sincere relationship based on trust and collaboration. His spirit will always remain among us in remembrance of the precious time we had together. We have lost not only a great group leader, but also a true friend.

We would like to have a last whiskey with him.  
We would like to listen to another of his stories.  
We would like to hear his hoarse voice and laughter.  
We would like to have a last chance to thank him.

His Group