Retirement Prof. Hans-Werner Fink

Hans-Werner Fink was born in 1952 in Salzgitter-Bad, Niedersachsen. He studied physics, mathematics and chemistry at the Technical University of Clausthal where he obtained his diploma in physics in 1979. His thesis was awarded with the E.W. Mueller "Outstanding Young Scientist Award" for the studies on long range interaction between adatom pairs. Three years later Hans-Werner got his PhD from the Technical University of Munich for his studies of the "Atomistics of Monolayer Formation" that he performed in the group of Gert Ehrlich at the University of Illinois at Urbana-Champaign. His engagement concerning the understanding of the interaction of individual atoms on metal surfaces represents an important contribution to the foundation of the field of physics on the nanometer scale. In fact, Hans-Werner was awarded with the Max Auwärter price in 1983 for the discovery of non-pair wise trio interaction.

In 1984 Hans-Werner joined the IBM Zurich Research Laboratory in Rüschlikon – just at the times of the upgrowth of the nobel years. Here he started to develop the Low Energy Electron Point Source (LEEPS) microscope - a novel type of electron microscope based on the principle of inline holography. In the course of these activities he received the IBM Outstanding Innovation Award for the invention of a coherent electron source.

Of great impact certainly was also his work concerning DNA molecules, that Hans-Werner carried out in the later nineteen nineties, when he was a visiting professor at the Physics Institute of the University of Basel. Applying the LEEPS microscope to measure the conductivity of free-standing DNA ropes not only provided insight into a pivotal and highly debated question in life science but also demonstrated the versatility of his new instrument.

In September 1999 Hans-Werner became a professor here at the Physics Institute of the University of Zurich where he eventually moved into newly built and specifically designed laboratory premises to establish a new branch of research involving the novel LEEPS technology. Along the lines of his research he introduced the lecture "Physik auf der Nanometerskala" and made it an inherent part of the lecture calendar.

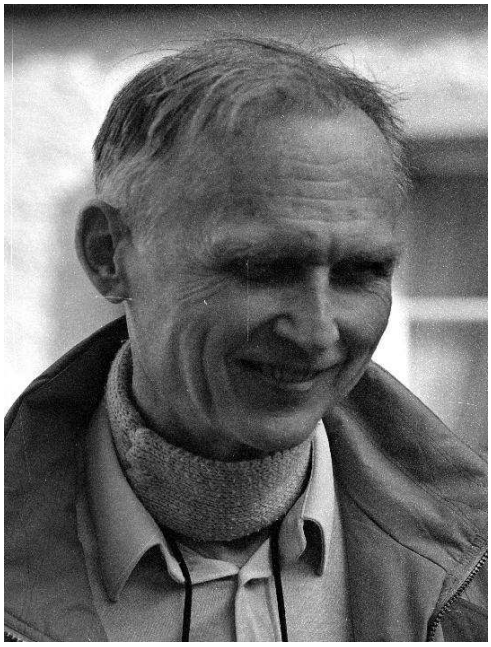
Over the past two decades he persistently advanced his research with a small team of coworkers making fundamental contributions to the field of coherent optics concerning all, experimental, theoretical as well as computational aspects. Owing to his analytic expertise, intuition and ingenuity Hans-Werner successfully refined the LEEPS technology to become a unique tool for structural analysis of individual proteins. Still, his activities have always been accompanied by little divergent and playful projects.

As a subtle experimentalist he still spends a lot of time in the laboratory to further research with his agile and vigilant spirit. It is hence no surprise that he is going to proceed in a non-strictly academic environment to enhance the LEEPS technology for the purpose of routine pharmaceutical analysis and the in-situ study of chemical bonding among individual ligands.

We thank him for all his valuable achievements and wish him all the best for his plentiful future plans!

Ralph Edward Pixley

September 14, 1929 (Centralia, IL, USA) – March 15, 2018 (Zumikon, CH)



Ralph Edward Pixley studied physics at Drake University, Iowa and obtained his PhD under the supervision of W. Whaling at Caltech. Already during his time as a PhD student, he achieved an important experimental success with the discovery of a new excitation state in the Carbon-12 nucleus at 7.68 MeV which is of central importance to the processes of stellar nucleosynthesis.

As a PostDoc Pixley worked in the Plasma Laboratory in Livermore, at the Brookhaven National Laboratory, at ETH Zurich and at the Centre de Recherche Nucleaire in Strassbourg. In 1963 he joined our department as an "Oberassistent". He lead a group of PhD students, working on the 6 MeV Van de Graaf accelerator. Hans Staub, director of the departement at that time, wrote ".. and he has greatly contributed particularly on the experimental side to our nuclear physics research ... and his experimental and technical abilities are very valuable to us".

Already at that time he was in charge of the advance laboratory course in physics (VP). Staub commented this in his letter ".. developed new experiments .. he is very well liked by the students, particularly since he devotes a lot of time to discussions with them..". The students of that generation indeed remember Pix, as we called him, as our most important contact person for physics, who explained us quantum mechanics, experimental methods and - may be most importantly - statistical analysis and uncertainty calculation methods. He was extremely supportive and patient, but often he concluded at the right moment in "try to find out yourself how it works," an attitutde, which was of invaluable importance for our physics education.

1967 Ralph Pixley was appointed assistent professor at the Stanford University, where he however stayed only for three years. For personal reasons he wished to come back to Switzerland, where he was very welcome at our institute again in 1970.

In the 1980 Ralph Pixley started to contribute significantly to our experiment which measured an upper limit of the neutrino mass by determining the endpoint energy of the tritium decay spectrum. The result of that experiment was for several years very well known as the Zurich neutrino mass, the worlds best mass limit at that time.

After his retirement in 1994 a new endeavour began in our institute, the Zurich Gravitational Constant G measurement. Two 1.1 kg test masses were alternately weighed with a precision balance in the presence of two moveable field masses consisting of liquid mercury, each with mass of 7.5 tons, installed in a quiet place at the Paul-Scherrer-Institut. Ralph Pixley devoted all his energy, great experience and wisdom to the final analysis of the data. In 2006 the final result was published and is now known as the Zurich G value, which is one of the three most precise G measurements existing today.

Ralph's ingenious experimental skills were complemented with his unpretentious appearance and very empathic character. Not many of us knew that he was also a gifted player of the classical guitarre, but once in 1990 he gave in the institute a very nice concert for two guitarrs together with one of the PhD students and he entertained the institute's christmas party with his beautiful music.

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