

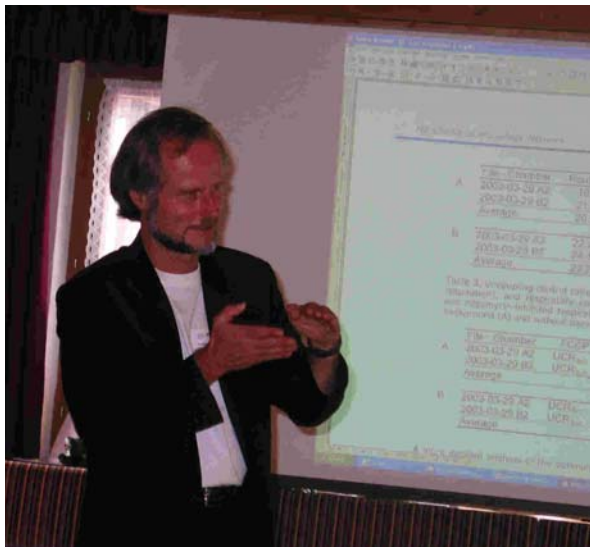


## Course on High-Resolution Respirometry

**IOC-24. Mitochondrial Physiology Network 8.11-B** Photo Archive

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### **Oxygraph-2k Workshop and Training Course on High-Resolution Respirometry** **09-12 Sept. 2003, Schröcken, Vorarlberg, Austria**



Erich Gnaiger introduces high-resolution respirometry with the Oxygraph-2k and hot topics in MiP.



An Oxygraph-2k experiment starts with active participation in groups.



Top: The work of Teresa Roig, Zakaria Almsherqi, and Robert Boushel with the Oxygraph-2k in the center is closely observed by surrounding participants.



Top: Petr Pecina is an experienced user of the Oxygraph-2k in the Mitochondrial Physiology Network (reference laboratory for high-resolution respirometry, Josef Houstek, Prague). He explains the automatic oxygen calibration with the DatLab software to Joan McEwen, Veronica Hollis, Miriam Palacios-Callender and Marisol Quintero.



Left: Bob Balaban starts taking the Oxygraph-2k apart to evaluate options for combining high-resolution respirometry with optical measurements.



Top: Brigitte Haffner checks organizational matters and assists all participants (right: Bob Balaban).



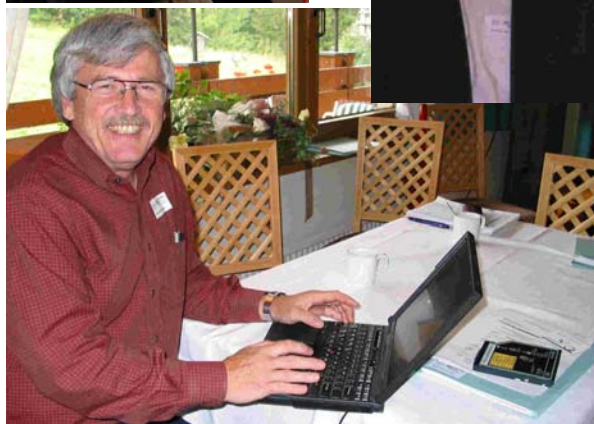
Top: All together in the course – including introductory lectures, hands-on experiments, meals, accomodation and swimming pool in Hotel Mohnenfluh (front, left), Schröcken.



Top: Christoph Schinagl demonstrates sensor service and application of a new membrane. Kathrin Renner and Brigitte Haffner observe his teaching skills, while Andrea Dlaskova and Marek Böhm cannot wait to have a go.



Top: Petr Pecina appears to be happy with his respirometric data.

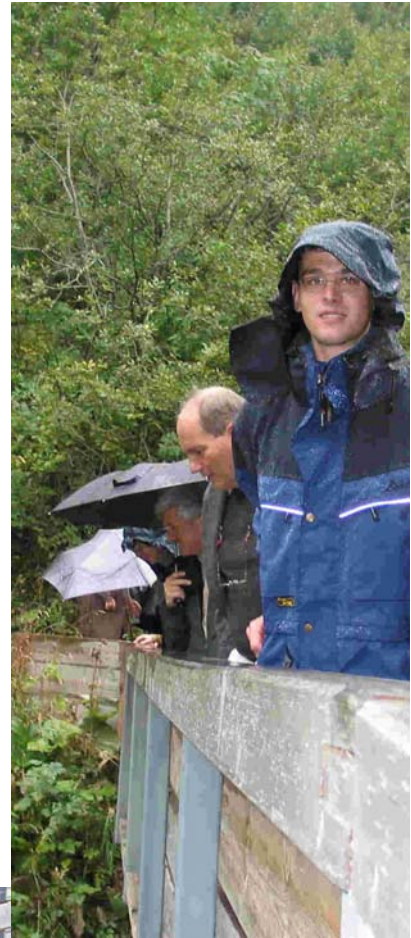


Top: Veronica Hollis and Marisol Quintero in a lecture on advanced high-resolution respirometry by Erich Gnaiger (top left).

Left: Steve Hand has fun with the software DatLab, downloaded from a small CD which contains the entire course material (a stack of CDs top left).



**Alpine walk and talk.**



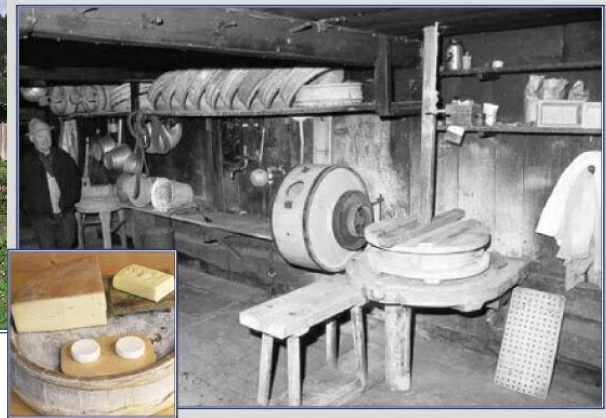
Top and right: Across the bridge over the Bregenzerach in the rain. From right to left: Ondrej Kuda, Bob Balaban, Steven Hand).



Left: At the Alpmuseum of m Tannberg where cheese production proceeded until 1998. Today cheese production continues in the new *Alp* (on the right above the Alpmuseum), where we get a taste of cheese and Schnapps.

Bottom: Snow and mist on the Kuenzelspitze (right) and snow and sun a the Mohnenfluh and Juppenspitze (left).





Marmots are abundant in the area and stay frequently within the Alpmuseum. They are not only a hot topic for uncoupling proteins, but their fat is popular for medical applications – of potential interest for a project in alternative medicine as discussed by Bob and Erich during the walk.

The dairy kitchen with its original tools comprises the center of the *Alp* where the famous Vorarlberger Alpkäse is produced.



Steve Hand explores the upper floor and the mechanics of the cheese press.



Downstairs into the dark dairy kitchen of the Alpmuseum – from left to right: Veronica Hollis, Bob Balaban, Petr Jezek, and Ondrej Kuda.



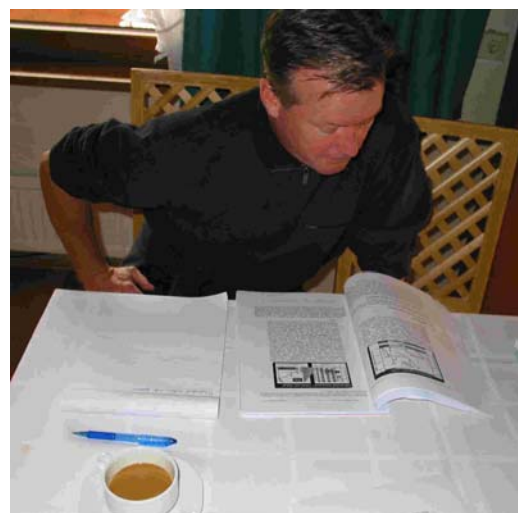
Left: Around the Oxygraph-2k: Marzia Arese looks into the two chambers, Olga Matejkova and Ondrej Kuda discuss, while Frédéric Bouillaud, Robert Boushel and Petr Jezek observe.

Below: Taking care of science and her 7-month old Anita: Marzia Arese with the youngest participant.



Left: Several instruments are available for various applications during tutorials. Here a mixed group from the Czech Republic proceeds with a stability test of the Oxygraph-2k. From Left to right: Petr Jezek, Petr Pecina (in the background), Marek Böhm, and Andrea Dlaskova.

Right: Bob Balaban and Lukas Gradl (programmer of the DatLab software for high-resolution respirometry) discuss the various options for multichannel data acquisition when combining the Oxygraph-2k with optical and other electrochemical sensors. Jacques Leibowitch listens with interest from a clinical perspective.



Working even during the coffee break: Rob Boushel studies the course material (left), while Veronica Hollis, Marisol Quintero and Miriam Palacios-Callender discuss the details (below).





Top: Frédéric Bouillaud and Zakaria Almsherqi have become experts. Another tutorial proceeds in the background.



Top: Olga Matejkova and Ondrej Kuda. Right: The new OROBOROS Titration-Injection microPump (TIP) was not yet completed for the course. Bottom: The Oxygraph-2k for high-resolution respirometry.

